Bulletin of the NSW Association of Agriculture Teachers





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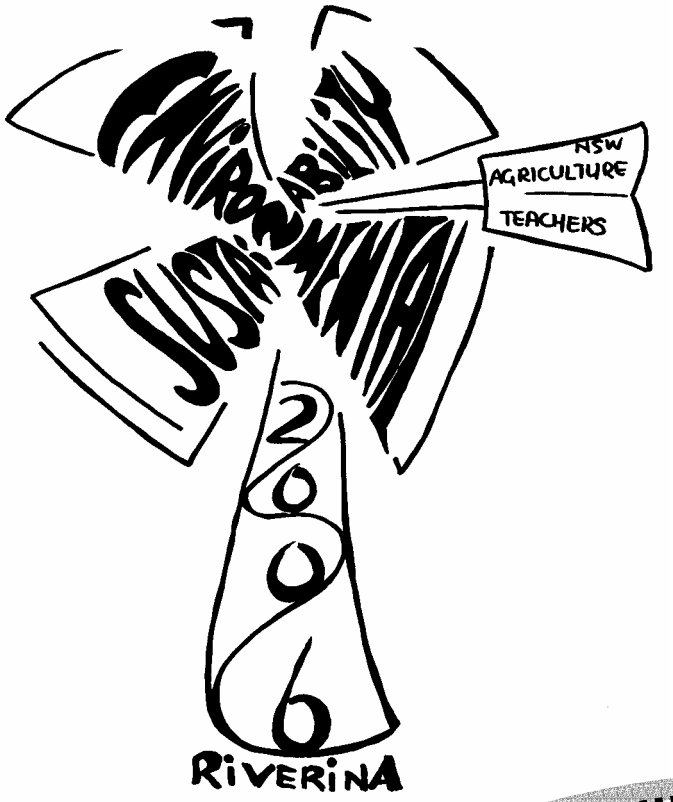
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2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

"FROM THE DESK"

1. EDITORIAL:

…….JANS THOUGHTS

2. PRESIDENT:

…….TONYS THOUGHTS

People aged 15 & under are the least likely to litter.

Editorial....

Jans Thoughts

Welcome:

To this issue of the BAAT. Another season unfolds and areas across NSW are experiencing vastly different conditions. Let's hope yours are favourable.

You may be itching to send us in some information to add to the next issue of BAAT. We are constantly asking for any contributions to make this magazine your magazine.

We have agreed to stick to a format that may give you some ideas
Sections:

- ***From the desk***
- ***Correspondence***
- ***2006 conference matters***
- ***What's Hap'ning in my paddock! – your Ag plot report***
- ***What' the go – Activities that have been happening at different locations***
- ***Special feature***
- ***Agriculture and PI Resources***
- ***Professional Development in Ag***
- ***Agriculture and PI in the Riverina***
- ***Membership section***

Where to send information for BAAT:

Your information can be sent through:

Email to: jantekooti@yahoo.com.au

or by post to: **Jan Young**
Murrumburrah High School
Smith St
Harden NSW 2587.

Items could be faxed to (02) 63 863 048 attention Jan Young.

Conference:

Our conference planning 2006 is well under way with an exciting schedule set. The theme for this conference is "Environmental Sustainability" with the windmill as our logo. We have been fortunate to acquire **Visy Pulp and Paper** as our **GOLD sponsors**.
Please find more information in this BAAT as well as more in subsequent BAAT's about the conference.

Feel free to contact us at any stage with your ideas or thoughts regarding BAAT.

Cheers Jan.

Presidents Point of View.....



Welcome to the Riverina:

I would like to welcome, on behalf of all the Aggies & PI teachers in the south of the state; the NSW Association of Agriculture Teachers to the Riverina.

It has been some 14 years since the Association was last in this region. I have attended many Ag. Conferences over the years & thoroughly enjoyed the camaraderie, the great yarns, the social aspects & the variety of venues & locations. By attending these conferences it showed to delegates the variety & importance of the value that agricultural industries have to offer our students & the economy. With all these experiences I found wanting to fly the flag at the Armidale conference in May for the Riverina region. It was time for the Association to come back down south & for the Riverina to showcase what this fabulous region has to offer for our students.

This was only possible, due to the great support & assistance from people right across the Riverina including; Allan Mc Millan, Steve Trickett, Rod Francis, Jan Young, Alison Dalhenburg, Judy Lawson, Ian Baird, Ilka Klepper, Dave Gillard, Richard Said, Bryan Adamson, Robyn O'Leary & Greg Fulljames in establishing an executive for the Association.

Extended Thanks:

On behalf of all members of the Association I wish to extend a huge thank you to Graeme Harris, Lisa O'Brien & Stuart Hemmings for their commitment & dedication to the professional Agriculture Teachers Association for the last 2 years.

We are about to find out over the next two year what energy it takes to continue to take this great Association forward while addressing issues that members have in their deliverance of this fabulous subject. What other subject would we teach?

Appreciation is extended to the organising committee of the May Conference at Armidale for the many hours of planning & ensuring every delegate was made feel welcome. To John Lee, Tony Barnett, Rowan Chandler, Michael Ball, Peter Coley, Karlene Bailey, Jill Wagner, Rebecca Smith, Alan Thomas, Graham Pagden & Phil Jones we are grateful for a job well done.

The Echidna Gully Experience certainly lived up to its name with fantastic views & the charm of the woolshed & surrounds. This was conducive for a top conference with many a long yarn being told at the bar into the early hours.

Congratulations to Tony Barnett:

Tony is a committed person who pulls no punches when dealing with bureaucrats & is fair dinkum in what he does for his students and the Association. Tony is a well deserved recipient of the J.A. Sutherland Award & has worked hard for Agriculture students. We have all benefited by this. Tony played an integral part in the organisation of the 2004 Ag conference at Armidale. Well done Tony & keep up the great work for your students.

Chemical Course in Schools:

By now you would most likely know that the Department is no longer the RTO for chemical courses in schools. The implications of this are very simple; you can no longer deliver & assess students using the SMARTtrain chemical course at your school. This decision is at the detriment to most rural students who have ambitions to return to their family farm, where they are involved in all decisions in the use of chemicals on farm. This course provided these students with a vehicle to learn about all aspects of chemical usage.

The course provided students with a qualified trainer, a familiar setting with peers of similar age and most importantly a course that was useful to them & at a reasonable cost. As we all know this course provided students with national competencies that were transportable skills to assist them in future career opportunities in the rural arena. Isn't that what our job is? The course provided students with that advantage over others seeking employment. I know from experience that these opportunities are very minimal in small country towns & any edge that students have is a benefit in securing employment. Students applying for part time work in orchards, vineyards and any rural industry are looked on favorably by having in their possession a national ticket that is credible for five years. We've all seen rural ads in local newspapers that require employees trained in a recognized chemical course.

I am not surprised by the pattern of events over the last 4 years when we were directed by our employer to relinquish our ChemCert credentials and be retrained as SMARTtrain instructor. We all remember the turmoil & lack of resources that were offered to us at that time. However with one chemical unit of competence in the PI syllabus it appears that our university course will be adequate for the delivery of this unit. Does it? With the Department remaining silent on this issue over the last year, the executive wrote a letter to Glen Bennett Principal Officer, VET in Schools, Vocational Education in Schools Directorate. The letter & her response are in the bulletin for you to make up your own opinion on the matter.

In September this year 17 PI teachers from across the Riverina completed a ChemCert trainer course to be re-credentialed as ChemCert instructors. This in the interim is a method for us to have some industry qualification to not only teach & deliver chemical instruction in schools but also be frequently updated in chemical legal & industry issues. I would like to thank those people who could see the advantages of retraining under ChemCert because we are now meeting the educational & training needs of our students which is what education is all about.

Other Issues:

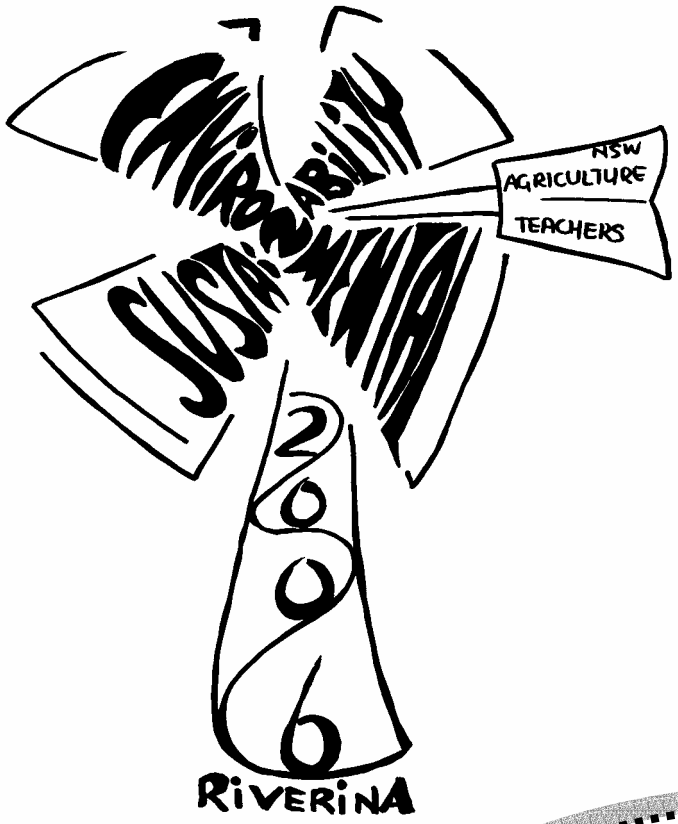
New Syllabus:

1. *Primary Industries Syllabus:*

This year has seen the implementation of the new Primary Industries syllabus in schools delivering this course to students. We are all sinking our teeth into the writing of our programs & the delivery of this course while modifying our approach to the new syllabus as we know how to. The new syllabus requires us to deliver 1 core chemical unit as opposed to the previous syllabus that required delivery & assessment of 8 core chemical units. You can read the letter sent to DET & their response to this issue.

2. *Agricultural Technology Year 7-10 Syllabus (Stage 4 & 5)*

Next year will see the implementation of this syllabus into year 7 & 9 with implementation into year 8 & 10 in 2006. Most likely you have attended a workshop sometime in 2004 to assist you unpack the Agricultural Technology syllabus & obtain assistance in the implementation of this syllabus. A big thanks to Sally Bannermans tutelage & for conducting these workshops state wide, while making the day worthwhile amongst colleagues; thus ensuring our task on this potentially a little easier. You will find resources & support material about the stage 4 & 5 syllabus on the web site of Curriculum K-12 Directorate at: http://www.curriculumsupport.nsw.edu.au/technology/ Follow the 7-10 syllabus link.



2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

INTRODUCING:

NSW AG. EXECUTIVE 2004 - 2006

^ **President:**
- **Tony Butler**

^ **Secretary:**
- **Allan McMillan**

^ **Treasurer:**
- **Stephen Trickett**

^ **Technology & Communication Officer:**
- **Ian Baird**

^ **BAAT Editors:**
- **Jan Young**
- **Ilka Klepper**
- **Judy Lawson**

South West Slopes region of NSW is the largest softwood producing area in Australia worth in excess of $1 billion.

President:



TonyButler

I have been teaching Agriculture Science, both junior & senior each year for a period of 25 years (that's a long time!) & also have taught Primary Industries for 5 years and prior to that, Rural Industries. I enjoyed facilitating at the training of PI teachers at the orientation days for VET.
I spent a short time at Yanco Ag before going west to Broken Hill High school where I stayed for 5 years before being transferred to Tumut High with my Broken Hill wife Fran & son Luke.
Our family; including daughters Amy & Erin; reside on our family property "The Vineyard", via Tumut in the fabulous Gilmore Valley.
I have enjoyed attending the many Ag conferences over the years & I'm looking forward to the challenge of this position for the Association. Over the next 2 years I look forward to working with the fine group of people that make up the Riverina executive for the Association & in particular will enjoy the planning & organisation that is required for a successful conference in 2006. I enjoy being involved as an active member of the Gilmore Rural Fire Service, Visy Community Consultative Committee, Tumut Ecology Reserve Trust, Gilmore Progress Association and a number of other community groups. Enjoy the V8s at Bathurst races each year with Luke who is a keen Holden fan. Go the Fords!

Secretary:



Allan McMillan

I am presently teaching Agriculture, Junior D&T and Primary Industries at Wagga Wagga High School. I am married to Annette (26 years) and we have two daughters Gabby and Jacqui.
I completed Agriculture training at Wagga Agricultural College (1975) and a Diploma of Education at the Riverina College the following year.
I had a short stint at Yanco Agricultural High in my first year teaching, however the bulk of my teaching has been at the 'School on the Hill' (WWHS). I took a deployment to the CSU at the end of 1990 until the end of 1991 to work as an education officer assisting in the implementation of the external Ag. degree.

My interests today, apart from family, revolve around keeping active outdoors and following football, particularly AFL and Rugby.
I was involved in the organising committee of the bi-annual conference held at Murrumbidgee College when Riverina were last the executive back in 1990-91. I look forward to working with Tony and the new Riverina executive for the next two years up to our Riverina conference at CSU in October 2006.
Its good to see the new executive hailing from various parts of the Riverina which should Its good to see the new executive hailing from various parts of the Riverina which should encourage further networking and a wider representation.

Treasurer:



Stephen Trickett

I have taught Agriculture at Billabong High School 26 years.
I trained at Armidale College of Advanced Education graduating in 1973.
I taught for 5 years at Young High School.
I completed a Bachelor of Education degree in 1985.
I have represented my teachers association at NSW Teachers Federation Council for 18 years.
During the writing of the new D & T Agriculture syllabus I represented the Teachers Federation on the Board of Studies Curriculum Committee supervising the writing process.
I have been the manager of the school's sheep stud since its inauguration in 1992.
Part of the successful Billabong High School show team which has had great success at many shows in NSW and VIC.

BAAT Editor:



Jan Young

I'm 34 years old with two sons (10 and 5) and husband. (All rugby mad)
I completed my secondary school at Tumut High School in 1988.
Worked for a year outback & travelled to Europe
B App Sc – Ag studied at CSU-R 1990 – 1992.
Graduated in Diploma Education UNE 1994.
I then started casual teaching in Yass before moving to Griffith to work at St Francis Leeton before taking up a permanent position at Wade High School in 1997 – 2000.
Then moved back to Yass to the family property to take up a position at Murrumburrah High School in 2001.
We have recently purchased our own block in Harden "Rutland".
I' am currently teaching Primary Industries, Biology, Science.
Qualified in VET subjects of Viticulture and Primary Industries to meet the needs of the schools taught at. When arriving at Murrumburrah High School, training in Physics commenced to meet the needs of the school.
Totally enjoy the challenge of enthusing and educating students in the practical sides of Agriculture and Science subjects. Find the aspect of motivating male students to achieve in school a satisfying challenge.
In my first year at Murrumburrah High School, I was approached to supervise the large contingent of female students in cattle parading, a club that had been recently revived at the school. I have been learning and enjoying it ever since. It is hard work but with watching the students going to and winning at the Sydney Royal Show a great reward.
"Farm Club" now has 26 students parading cattle from a school of 196 students from year 7-12.

BAAT Editor:



Judy Lawson

I attended Orange High School many years ago, then completed my degree at Newcastle University. Early in my teaching career I went to Western Australia where I taught for 12 years, at a few schools in Perth. Whether it was the times or whether it was because of the way education was organised, students were keen and eager to learn and to improve themselves. This made teaching very rewarding.

Since coming back to NSW I taught for one year at Moulamein, then transferred to Lockhart. Here I have been the sole Agriculture teacher and had the privilege of setting up the school farm together with the students. The students have been involved in building sheds, yards, animal cages, the aviary, hydroponics' tables and pasture and sheep husbandry. We have a small school farm and have pastures, sheep, ducks and hens, birds and vegetables - both in the garden and in hydroponics. Sometimes we have had young calves, but the farm is really too small to support cattle for long. Currently we are developing a vineyard, with the help of the School's Counsellor, Dave Mundy, who has a vineyard in Wagga. We hope to be able to process and bottle the wine for sale amongst the staff - & any locals that are game to try!

Agriculture is taught to Year 9/10 as well as 2U Ag or Primary Industries. In the past Y7/8 has had a taste of ag., but this depends on the timetable.

I am married with 4 children and my interests include music, gardening, reading, the dreaded family history and holidays.

BAAT Editor:



Ilka Klepper

I am currently employed at Cootamundra High School teaching Primary Industries, Senior Agriculture, Junior Agriculture (8-10).

Completed my Ag training at Wagga in 1993 and then went to UNE to do my Graduate Dip Ed.

First stint was at Ariah Park for 2 years, then headed overseas for a year teaching in England, catching up with family and enjoying the cultural experiences of Europe. Returned to Ariah Park for another year and then went to Victoria to work for Methodist Ladies College at their remote campus for 3 years in a beautiful part of the world at Mallacoota, teaching environmental education and Agriculture to girls from Melbourne who resided in a small community for an 8 week term.

I began studying Masters in Education by Distance Ed which had its trials and tribulations. From then on it I have been in many places, brief stint at Hurlstone Ag High, Hennessy Catholic College at Young, Education Officer Australian Weed Management CRC based at Armidale before returning to teaching to Cootamundra in 2003.

Live with partner at Binalong on a property and my interests include photography, cycling, reading and travel if given the opportunity.

Love working at Cootamundra High for the challenges and enthusiasm that is amongst the students particularly involved in Agriculture and thrive on seeing students achieve even the smallest things as well as slowly working on having students involved in the local shows in cattle parading and junior judging.

Technology & Communication:



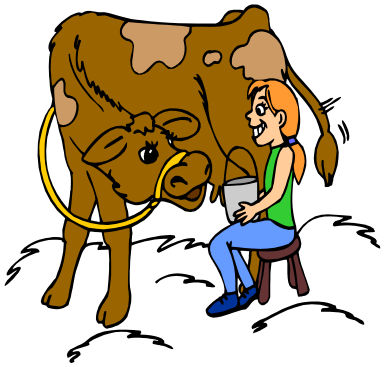
Ian Baird

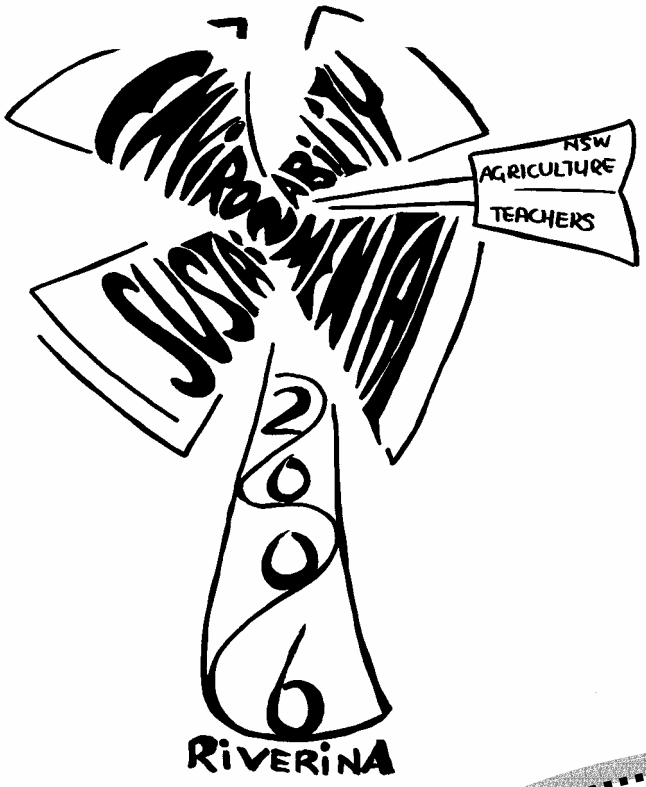
I'm an Agriculture teacher at Murrumburrah High School. Actually teach a range of subjects, namely Agriculture, Science, Design & Technology, Information Technology, Computer Applications (Adult class) and Driver Training.
I started my teaching career at Yanco Agricultural High School, then the following High Schools, Windsor, Onesua (in Vanuatu) and presently Murrumburrah. The four years in Vanuatu gave plenty of insight into tropical agriculture.
As Computer Coordinator at MHS, this takes up quite a bit of time. As does coordinating Peer Support, Chess teams, Gifted and Talented programs in the school and the school farm.
Attending family sporting events also as my family are into swimming, soccer, cricket, hockey. touch, waterpolo, tennis & rugby league.
I am married to Lorna who is a reading recovery teacher. We have four children, Andrew, Julia, Keith and Robert. Only Robert left at school now.
While teaching at a small school for the last 21 years in Harden has meant being involved in a wide range of activities, the one constant subject for me has been agriculture, which I still enjoy teaching. I have particularly enjoyed the annual aggie get-togethers at HSC marking which I have been doing since 1989. Previewing the HSC Agriculture paper the last two years has given me a better understanding of the processes involved.



**There was a farm next door to a mental health centre.
A patient was standing at the gate when the farmer wheeled a barrow load of cow manure past the gate.
The patient asked the farmer, "What are you going to do with that stuff"?
The farmer replied, "I'am going to put it on my strawberries". The patient said, "And they call us crazy! In here we put cream on ours."**

**There was this blonde city-girl who was out driving & found herself in a rural area.
She noted a farm animal standing next to a farmer & stopped the car to ask the farmer a question.
"Sir," she inquired, "Why doesn't this cow have any horns?"
The farmer cocked his head for a moment, then began in a patient tone:
"Well, ma'am, cattle can do a powerful lot of damage with horns. Sometimes we keep 'em trimmed down with a hacksaw. Other times we can fix up the young 'uns by puttin' a couple of drops of acid where their horns would grow in, & that stops 'em cold. Still, there are some breeds of cattle that never grow horns.
But the reason this cow don't have no horn, ma'am, is 'cause it's a horse."**





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Correspondence

^ NSWAAT letter

re: Chemical courses in schools

- **Glen Bennett Principal Officer**
  VET in Schools
  Vocational Education in Schools Directorate

^ Response to NSWAAT letter

- **Glen Bennett Principal Officer**
- **re: DETs position**

^ During the recent plague locust outbreak; it was reported that in the Walgett district, thick density bands as high as 3000 nymphs a square metre were common.

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Glen Bennett
Principal Officer, VET in Schools
Vocational Education in Schools Directorate
Level 16, 1 Oxford Street
Darlinghurst NSW 2010

Dear Glen, 20th September 2004

As president of the NSW Agriculture Teachers Association, I wish to have clarified for our members, a number of issues regarding the chemical course that was delivered in schools as part of the Primary Industries course and prior to that the Rural Industries CEC.

At the Agriculture teachers biannual conference held at Armidale in May of this year, members were informed that no longer could the SMARTtrain course be delivered and assessed in schools.

The Department of Education & Training was responsible for training Primary Industries teachers to industry standards which credentialed these professionals to provide adequate resources for delivery & assessment of their students in the SMARTtrain course.

The Department has on record each of these teachers' school & private details. To date we have not received any correspondence from the Department regarding this important issue. We feel this is inadequate as professionals and a lack of clarification.

As a result, Agriculture teachers need to have the following issues regarding the chemical course clarified, as a matter of request and concern.

a. Delivery of Chemical Courses in schools:
   ^ The SMARTtrain chemical course at AQF3 is no longer an option for Primary Industries teachers to deliver to their students in schools. This we believe is due to:
   - The Department of Education & Training is no longer the RTO for the deliverance of the SMARTtrain course in schools. Yet students can enrol in TAFE & be trained in the SMARTtrain chemical course & be taught by their Primary Industries teacher from their schools. This process seems to be questionable and inequitable on the basis that schools have met strict industry guidelines with available resources to be able to deliver such a course.
   - The higher order chemical units of competency in the entry level course for Primary Industries have not been included in the 2004 primary Industries syllabus. Yet these competency units were included in the previous Primary Industries syllabus delivered to school students.

b. ^ Clarification is required on the support that the Department of Education & Training would give to ChemCert qualifications that Primary Industries teachers may contain or pursue through further training.
This would extend the chemical training to certify students with a recognised chemical course. This process would allow access to an RTO for credentialing purposes. This method would indicate no difference to the scenario that has already been identified using TAFE as an RTO for our senior students completing the SMARTtrain course.

c. ^ What specifications are required by industry to deliver the current core unit in Primary Industries pertaining to chemicals: "Apply chemicals under supervision"?
In the previous Primary Industries syllabus of 1999, a requirement by DET & industry was to ensure that trainers had industry qualifications at AQF4. DET trained the Primary Industries teachers to meet these requirements.
This was an advantage to deliver the eight chemical components in Primary Industry course regardless whether trainers delivered & assessed students in the SMARTtrain course. If these qualifications are needed for this delivery, the current process for trainers to deliver the chemical core unit in the 2004 Primary Industries course in schools, using SMARTtrain qualifications will soon expire.

It should be mentioned that prior to 1999 Rural Industries teachers were required to be trained as ChemCert instructors for the delivery and assessment of the chemical units to provide students with industry qualifications. This certification was welcomed by industry, teachers and students alike because it gave students a qualification that gave them options in employment opportunities. These qualifications represented evidence that students had a willingness to progress in the industry and by further training provided that edge needed over other candidatures for employment. Students expect their schools & teachers to provide that extra edge in employment opportunities and this is an important function of our education system.

Since 1999 Primary Industries teachers were either trained or retrained by DET as SMARTtrain instructors and once again employment opportunities were extended to students who wished to partake in the course with a successful outcome.

Agriculture & Primary Industries teachers recognise the important benefits that such a chemical course has for their students. Some of these benefits are outlined as followed:

+ Students receive a qualification that has been instructed at an industry level for qualifications provided by industry.

+ Students have an employment edge over their peers for employment application in the rural industry.

+ Professional instruction & assessment by qualified chemical instructors accredited by TAFE/ DET & Dept of Agriculture. This is a certification requirement by DET & industry for teachers to deliver chemical courses.

+ Deliverance & assessment of a nationally recognised competency based course in schools with a variety of resources.

+ Instructors qualified in Certificate IV in Assessment & Workplace Learning.

+ An environment conducive to student learning in familiar surrounds. The course is conducted to suit both the students and school time management issues while delivering to a peer group of similar age and scholastic year at the students' school.

+ Financially affordable for students, as resource books and workshop manuals were required at a minimal cost. No exorbitant instructor fees applied or great distances for participants to travel for the course.

+ Comprehensive training and practical applications of the following:

- The workplace environment: pests & pesticides at home/ farm.
- Legislation in the workplace.
- Safe use of farm chemicals. Label & MSDS reading exercises.
- Occupational Health & Safety.
- Safe usage of Application equipment: Calibration of machines.
- Residue & Persistent Chemical Management.
- Procedures for record & reviewing the use of chemicals.

These enrich the students learning and development in readiness for rural application.

+ Many of the clientele undertaking the chemical course are students from a rural background. These students have in most cases grown up on family farms and have been exposed to the application and storage of chemicals for many years. The chemical course assists in training students with the correct industry knowledge regarding selection, transporting, application, storage, and disposal of all farm chemicals. In most cases these students return to the family farm.

+ The course assists in teaching the "best practice" in farming procedures when applied to chemical usage & application. Students may have adopted over time on their family farms, a chemical practice that does not reflect industry standards. The course assists in correcting students with these practices & assists in demonstrating current industry practices that meet current standard operating procedures. Added to this, these safe procedures are then implemented on their family farms and in some cases chemical use practices & safety principles demonstrated to their parents.

+ The course provides a vehicle for current education, current industry knowledge and application of chemicals on farm.

+ On successful completion of the course students are certified as chemical practitioners for a period of five years while possessing sound knowledge that is applicable to all aspects of chemical usage.

+ Adequate resources for teaching and deliverance of the chemical course were required by VETAB & as part of the RTO requirements. These resources were either purchased by schools or accessed from the community or provided privately to satisfy course accreditation in schools across the State.

The chemical course consolidates the students learning in chemical usage at the completion of their schooling year. Many students have been exposed to chemicals on farm and school by their exposure in studying Agriculture at school. This reflects the importance of such courses in schools. On behalf of members I await your reply.

Yours Sincerely,

Tony Butler

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AND TRAINING

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Vocational Education and Training
Higher Education
Adult and Community Education

Tony Butler
President
N.S.W. Association of Agriculture Teachers Inc
C/ Tumut High School
Bogong Place
Tumut NSW 2720

Dear Tony
Thank you for your letter dated 20th September regarding concerns raised by members of the NSW Association of Agriculture Teachers about the withdrawal of the SMARTtrain Course in Chemical Application Risk Management (Chemical Application) from the secondary curriculum.

Teachers will soon be formally advised by the Retraining Unit of requirements to maintain accreditation to deliver chemical units in the Primary Industries Curriculum Framework. As you are aware, the upgrading of teacher training in the field of chemicals and pesticides was provided to support the delivery of Higher School Certificate courses such as Rural Industries prior to 1999 and since then, the Primary Industries Curriculum Framework. Funding is no longer available to support this level of training as it is no longer required to deliver the current framework.

ChemCert (NSW) Ltd is a private RTO that can provide the level of training your teachers request. However, the cost of such training cannot be borne by the Department nor is it desirable that a credential, no longer an essential element of an HSC course, be delivered by school teachers during school hours, using school equipment and resources. The Department's risk management policy would question the risk associated with any accidents that might occur post training when the requirement for the training is not associated with a compulsory aspect of an HSC course.

The new training package upon which the current Primary Industries framework is based has now placed in Certificate III many of the chemical units previously compulsory at Certificate II level. This is an implicit acknowledgement by industry that these units are now considered inappropriate for entry level delivery. As you are aware, the SMARTtrain Card provides evidence of proof of training and allows those holding it to purchase restricted chemicals. In the letter accompanying their TAFE NSW Testamur for completion of the Course in SMARTtrain (Chemical Application) students are advised that as these chemicals are highly dangerous, "the EPA advises that you should also complete the SMARTtrain Chemical Risk Management

• Level 16, Oxford Street, Sydney NSW 2000 Australia • Locked Bag 53 • Darlinghurst NSW 2010 Australia •
telephone 61 2 9244 5061 • *facsimile* 61 2 9244 5020 • www.det.nsw.edu.au •

course if required to purchase or use these chemicals as part of your work." The accredited person is meant to take on the supervisory role when chemicals are used. It is inappropriate that entry level students take on such a role.

It is acknowledged that students still need to have their awareness of chemical usage raised. The new framework addresses the issue of risk management but discourages the previous level of involvement in chemical application. This does not preclude local communities choosing to pursue a higher level of training where it is deemed necessary. It is not, however, the role of the Department to provide such training when it is no longer necessary to support a compulsory aspect of an HSC course.

I hope this helps to clarify the issues that have led to the withdrawal of the SMARTtrain Course in Chemical Application Risk Management (Chemical Application) from the secondary curriculum.

Yours sincerely

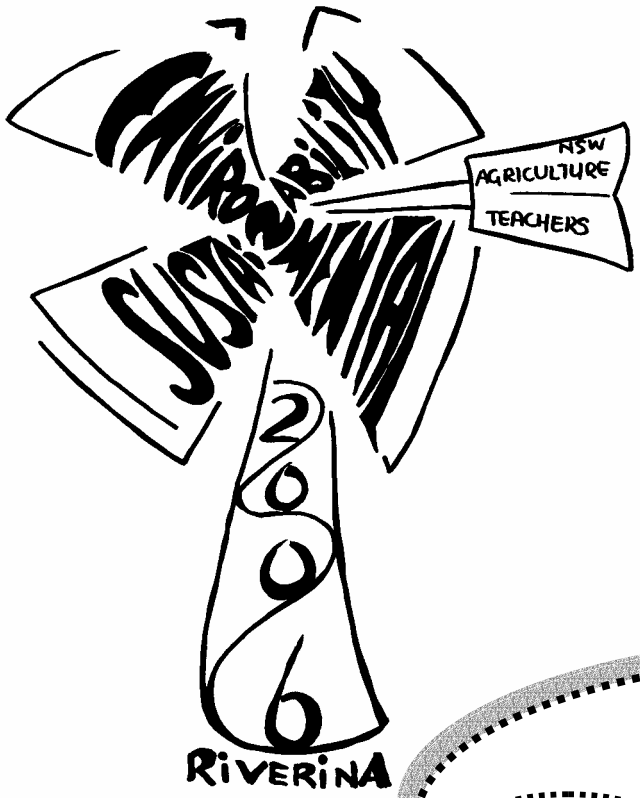
Glen Bennett
Leader, VET in Schools Unit,
Vocational Education in Schools Directorate
6 October 2004

The Associations wishes to thank you for:

- *The work you have done in your school to continue the advancement of Agriculture.*
- *The extra effort you have given to your students & your Ag farm.*

The executive wishes all members:

- *An enjoyable & safe Christmas break.*
- *A prosperous 2005*



2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

4

CONFERENCE MATTERS

^ **Agriculture Teachers Conference**
- **Theme of Conference**
- **Logo for Conference**
- **Windmills – a brief look**
- **A Collectors Item**

^ **Submission: Visy Industries Tumut**

^ **Introducing:**

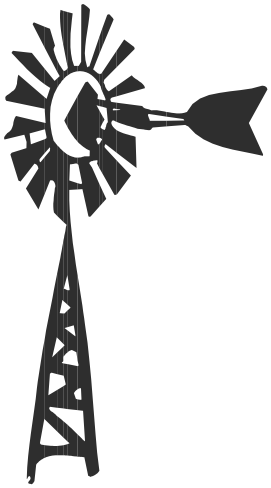
"GOLD SPONSORS"

VISY
PULP & PAPER
TUMUT

^ **National Agricultural Educators Conference**

^ Visy Industries has invested more than $400 million in the Tumut Mill.
^ It is the most advanced pulp mill of its kind in the world.
^ Visy has been commended by environmental groups for its sustainability.

Theme for the 2006 Conference



"Environmental SUSTAINABILITY"

AGRICULTURE TEACHERS CONFERENCE

10th – 14th October 2006

CHARLES STURT UNIVERSITY
WAGGA WAGGA

The **"Wind Mill"** is our logo for the 2006 Ag teachers' conference.

The Wind Mill is a symbol of:

^ The Australian Agriculture scene.

^ The windmill uses natural energy to generate power.

^ The windmill brings life to Agriculture by ensuring a constant supply of water.

2006 Conference:
The Conference of the NSW Agriculture Teachers Association will be held at: **Charles Sturt University Wagga Wagga, 10th – 14th October 2006.**

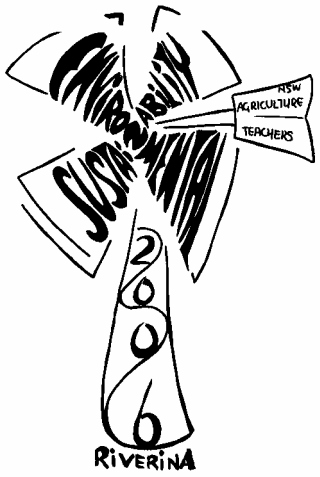
Environmental Theme:
Society in general is aware of the need to address the major issues that effect the environment and in particular the various measures that need to be adopted to address these issues.

It's for this reason, that this will be the first NSW Agriculture Teachers Association Conference to have for its theme:
"Environmental Sustainability".

Logo for 2006 Conference

- Introducing the logo which will be used in all literature & apparel relating to the 2006 conference.
- The logo represents the theme for the Conference:

"Environmental Sustainability"



Windmills.....a brief look

^ Windmill Development:
A windmill is a machine that converts wind energy into mechanical energy. The force of the wind provides the energy to act on sails made of either cloth or metal blades that radiate from a shaft. The pumping of water and milling grain can utilize this energy from a turning shaft.

^ Earliest Windmill:
In about 500-900 AD the earliest windmill was designed to pump water. This was thought to be in Persia. However the first European windmills were built in England & France about the 12th century for the pumping of water & crushing grain.

^ Windmill Improvements:
In the 18th century two modifications to windmills improved their efficiency & capacity to vary the speed of the windmill.

i. The first improvement was the introduction of the 'fan tail' in about the 1740s. This was used to rotate the main sails automatically so that the sails were always facing into the wind.
ii. To maintain a constant speed of the windmill a 'spring sail' was developed to allow the mill to operate in varying winds.

^ Windmill Uses:
Windmills were used for a number of uses such as, grinding of grains, water pumping & drainage, milling of timber & in the processing of cocoa, spices, tobacco, dyes & paints.

^ Australian Windmill Developments:
Australian designers of windmills were keen to develop a windmill that served the dual purpose of delivering a constant supply of water to livestock & people on the land.
In the early development of Australian Agriculture the water pumps driven by steam-power would commonly fail due to their mechanical attributes.
This in conjunction with isolation & the cost of fuel to distant properties identified a cheaper alternative & that was the windmill.
The largest windmill company in the 1870s was the Alston Windmills of Warrnambool of Victoria. This company developed a highly efficient all metal curved windmill sail along with the fist windmill that was self oiling. The units were fully enclosed & provided protection from the harsh Australian climate.
Southern Cross, Bryan Brothers, Metters & Sidney Williams were common brand names in the windmill industry.

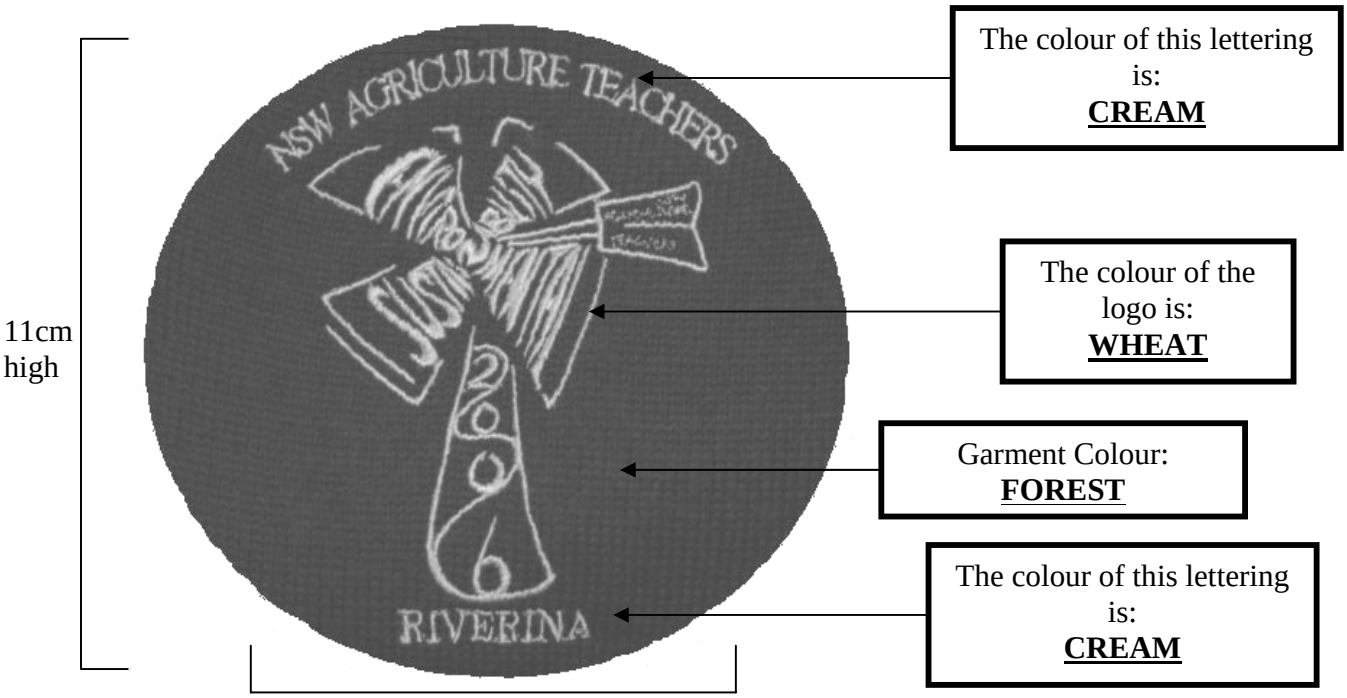
^ 20th Century Windmill Advancements:
The production of electricity by wind power referred to as 'wind turbines', has become an increasing feature across the Australian landscape.
A vertical axis rotor was developed & modified on windmills in the 1950s.
Governments were keen to promote the use of wind energy as a non polluting source of electrical power.

 Source: International Windmill www.geocities.com

A COLLECTORS ITEM…
FOR AGGIES ONLY.

RUSSELL STEVENSONS Mensland

^ Opportunity exists for you to be the first Agriculture teacher in your region to wear this specially designed Conference logo embroidered on an Australian pure woolen jumper. ^ Available in various sizes.
^ The woolen jumper is a V Neck Super wash.
^ The colour of this special garment is Forest Green.
^ Made in Australia from pure Australian Wool which is long lasting and very durable. (as well all know)
^ Advertise the 2006 Agriculture Teachers Conference with pride.
^ The logo is embroidered on the left hand side of the garment.
^ COST: **$79** including GST, Embroidery & Freight.



This is a special deal for Agriculture Teachers & supplied by Tumut Mensland.



Cheques Payable to: **"Tumut Mensland"**

Mail Order & Payment to: **Tumut Mensland**
49 Wynyard Street Tumut NSW 2720 **Ph: 0269471395**

Please supply your details:
Name:
Address: **Phone Number:**
Size: **Total Cost:**

Garment Sizes:	**16**	**18**	**20**	**22**	**24**	**26**
	M	**L**	**XL**	**2XL**	**3XL**	**4XL**

Please Note:
^ Choose up a size.
^ Contact: Scott at Mensland for advice.

2004 Summer Bulletin No. 25

N.S.W. Association of Agriculture Teachers Inc

www.nswaat.org.au
ABN Number 81 639 285 642

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Mr. Lex Kingma
Manager Visy Pulp & Paper
436 Gadara Road
Tumut New South Wales 2720

15th June 2004

Dear Lex,

As president of the NSW Agriculture Teachers Association, I wish to inform you of the importance of the Association and it relevance to agriculture teachers and the local communities across NSW.

The NSW Agriculture Teachers Association Inc. is a professional teaching organisation which consists of 180 members from the NSW Department of Education, Independent & Catholic Education Office Schools.

There are approximately 450 agriculture teachers in NSW with agriculture being delivered at 300 secondary schools from years 7 to 12.Agriculture is a dynamic subject in the NSW education curriculum, meeting the diverse needs of students from metropolitan and rural communities.

The NSW Agriculture Teachers Association has a website for its members, containing agriculture programs, resources and links to important agriculture sites in industry, government and education curriculum.

The Association produces a Journal twice a year, "Bulletin of the Association of Agriculture Teachers" (BAAT), this is a valuable bulletin containing many useful resources, current research, agriculture programs and information for teachers.

The Association conducts a biennial conference for its members and people interested in the teaching of agriculture. The next conference is to be held at Charles Sturt University Wagga Wagga from 10th – 14th October 2006.

"Environmental Sustainability" is the theme of this conference, with special emphasis on informing agriculture teachers from across the state how industry and agriculture enterprises use the latest technologies to strive for continued sustainability of the environment every day in their businesses.

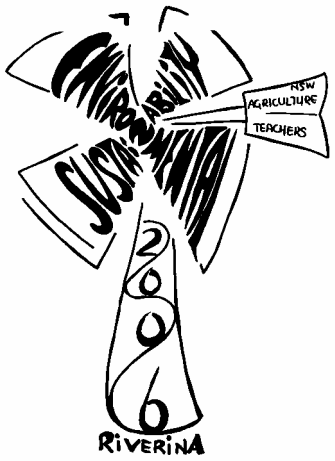
Visy Pulp & Paper are committed to the environmental sustainability of their industry & farming practices and it is for this reason the NSW Agriculture Teachers Association wish to invite Visy Pulp & Paper to be our Gold Sponsor for this important conference in 2006.

Please consider the attached document outlining the significant benefits of Visy being our "Gold Sponsor". I would like to discuss this matter with you at your earliest convenience.

Yours Sincerely,

Tony Butler

NSW Agriculture Teachers Association



"Environmental SUSTAINABILITY"

AGRICULTURE TEACHERS CONFERENCE

10th – 14th October 2006

CHARLES STURT UNIVERSITY
WAGGA WAGGA

RATIONALE:
The Conference of the NSW Agriculture Teachers Association will be held at Charles Sturt University Wagga Wagga, 10th – 14th October 2006.

Environmental Theme:
Society in general is aware for the need to address the major issues that effect the environment and in particular the solutions that need to be adopted to address these issues. It's for this reason, that this will be the first NSW Agriculture Teachers Association Conference to have for its theme "Environmental Sustainability".

Agriculture in the NSW Curriculum:
The NSW Junior Agriculture syllabus (year 7 to 10); Senior Agriculture syllabus (year 11 -12) and Primary Industries Vocational Education (year 11 -12) syllabus documents contain various components of environmental education from soil degradation, recycling, water quality, sustainable farming practices to technology used in monitoring the environment.
In the 21st century the environment has become an important issue for adults as well as the youth to become educated about and to be aware of and apply practical ways in which to sustain our environment for the future generations.

Current Environmental Practices:
Agriculture teachers are required to implement the environmental syllabus components in a way that educationally stimulates the students to realize the importance and the need to sustain the environment.
To facilitate the education process agriculture teachers need to be aware of current practices or future research directions that are being employed by agricultural enterprises, industry, governments or science.

Once this knowledge, skills and technologies about current practices have been recognized, teachers can demonstrate or ensure students become aware of these technologies or practices which assist in sustaining the environment.

Why Visy Industries?

One way in which agriculture teachers can become aware and familiar with technological advances in environmental science in this field is to witness them first hand.

Visy Pulp & Paper have been at the forefront of environmental awareness and implementation of environmental policies for some time. This has been echoed in the numerous environmental awards that Visy Industries have received over recent times.

Some important awards received by Visy Industries:
Winner - Rabobank Agribusiness Awards - AGO Environment and Energy Award
Highly Commended - SEDA - Biomass Cogeneration Plant, Visy Pulp & Paper for a large generation project that reduces greenhouse gas emissions
Banksia Environment Foundation Awards 2003 - Finalist: Corporate Responsibility and Sustainability - Visy Industries
United Nations Association of Australia - Winner: Best Practice Environmental Management Program
Banksia Environment Foundation - Finalist: Corporate Responsibility and Sustainability - Visy Pulp & Paper, Tumut, NSW
Sydney Morning Herald and The Age Good Reputation Survey 2001 - Voted No. 1 for Environment

In Visy's own words, "Visy has been recognised for its innovative ways of doing business such as reducing packaging waste, key major environmental projects such as the establishment of Tumut pulp and paper mill and increasing the recycled content in PET beverage soft drink bottles. As a winner of several major industry and national environmental awards including being voted for the past 4 years (2000-2003) as having the No. 1 Environmental reputation in Australia, Visy remains strongly committed to working with the community, our customers and suppliers to providing products and services that are safe and environmentally sound."

Visy is proud of its environmental achievements and its contribution to many communities throughout Australia.Visy Industries recognises its responsibilities in the local community, particularly in schools. The Visy Tumut plant conducts a scholarship program to assist in local students to reach their potential in various environmental and engineering fields.

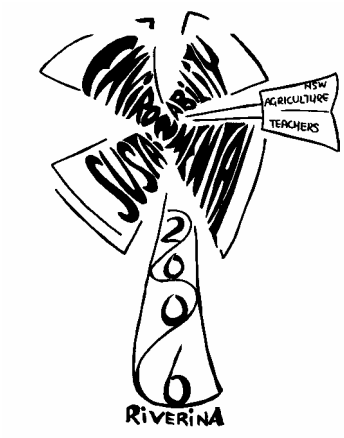
Agriculture teachers would benefit greatly from Visy's presence at the 2006 conference to educate people state wide on the excellent achievements and benefits that Visy Industries contribute to the community, the sustainability of the environment, and economy and student education particularly in the Tumut region.

In addition, Visy's $400 million, plantation pine based, unbleached kraft pulp and paper mill at Tumut is at first hand to show delegates from the conference the technologies involved in producing 240,000 tonnes of unbleached brown packaging paper. A demonstration of Visy's utilization of the waste water from its operations through centre pivot irrigation systems to water Visy pastures throughout its extensive farm would be of great interest to the agriculture teachers. An aspect of importance would be the continual ability of Visy to recycle well into the 21st century.

The opportunity is available for Visy to become a partner with the NSW Agricultures Association over the next two years to inform agriculture teachers of these benefits through its bulletin to members and educationalists, the conference; while demonstrating the excellent work that the Visy's Tumut plant is achieving both in industry and agriculture.

The benefits of Visy Pulp and Paper Tumut as a "Gold Sponsor" indicate to the community and NSW Agriculture teachers that Visy has a significant amount to offer industry and agriculture. This identifies Visy as a leading contributor of knowledge in the area of environmental technologies so that educationalists can disseminate this valuable information to our future generation of scholars.

NSW Agriculture Teachers Association



"Environmental SUSTAINABILITY"

AGRICULTURE TEACHERS CONFERENCE

10th – 14th October 2006

CHARLES STURT UNIVERSITY
WAGGA WAGGA

"Gold Sponsor"

Benefits:

i. "Principal Sponsor"
For the NSW Agriculture Teachers Association from **September 2004 to December 2006**

ii. "Visy News"
- Three page allocation of **Visy News** in the NSW Agriculture Teachers Association Bulletin [BAAT}
- Five bulletins to be published from 2004 - 2006
  ^ December 2004 ^ June 2005
  ^ December 2005 ^ June 2006
  ^ December 2006

iii. "NSW Agriculture Teachers Website": "Gold Sponsor Webpage"
- Two page allocation of news &/or advertisement

iv. "Visy Logo"
- Displayed on the cover of the five editions of BAAT
- Identified as "Gold Sponsor" throughout each edition.

v. "Conference Materials"
- Visy logo identified as "Gold Sponsor" on all materials that is disseminated to delegates:
  ^ Leading to the conference. ^ During the conference.

vi. "Facility Visit"
- All conference delegates to visit the Visy plant at Tumut on Wednesday 11th October 2006.
- Visitation of the Pulp & Paper Plant including:
  ^ Chemistry laboratory ^ Visy farm
- Opportunity for Visy to discuss to all delegates:
  ^ Environmental / Agricultural technologies
  ^ Plant/ soil/ livestock/ water monitoring.

vii. "Conference Dinner"
- Visy : Keynote speaker & guest: "Environmental Sustainability"
- Two complementary tickets to dinner on Thursday 12th October 2006 at Charles Sturt University

viii. "Conference Display"
- Visy static & visual displays throughout entire conference at Charles Sturt University & Gilmore Agricultural Bureau Hall.

INTRODUCING OUR "GOLD SPONSOR"

Visy Pulp and Paper, Tumut

Background

Visy Industries was established in 1948 when Leon Pratt and partners, father of the company's current chairman and managing director Richard Pratt established a factory to make cardboard boxes in Melbourne. Visy industries a successful Australian, family-owned company, employs more than 8,000 people worldwide, including 6,000 people in its Australian packaging and recycling operations and has four main divisions operating in Australia and the USA. They are:



- Visy Recycling, which collects waste paper, plastic bottles, cardboard, glass, steel cans, etc for recycling.
- Visy Pulp and Paper, which manufactures paper from recycled waste paper and pinus radiata
- Visy Board, which manufactiures corrugated cardboard boxes from recycled and virgin packaging paper
- Visy Pack, which manufactures steel cans, PET bottles etc from recycled co-mingled waste

The company has a turnover of over $3 billion per year. Visy collects and recycles more than 800,000 tonnes of waste paper and cardboard in Australia each year as well as collecting kerbside recyclables including glass, aluminium and PET plastics from almost 2 million Australian homes. In 2000, 2001, 2002 and 2003 Visy was named Australia's leading company for environmental performance in the Sydney Morning Herald and Age newspapers' annual corporate reputation survey. It was also ranked sixth for its social responsibility.

Visy Pulp and Paper division commenced operations in 1980 after the first Paper Mill using 100% recycled waste paper was built at Sydney, NSW. This mills production capacity was 1,000 tonnes of Paper per annum. Today the Visy Pulp and Paper division in Australia alone, produces 1,000,000 tonnes of paper per annum and world wide 1,500,000 tonnes per annum.

Visy Pulp and Paper has built its business on paper recycling in Australia. All of the first seven Paper mills built produced paper utilising 100% waste paper. As a result the efficiency of recycling in Australia is quite high, and in national, big-picture terms the quality of fibres has been decreasing. Hence there was a need for an injection of 'virgin' fibre into the paper market. Visy assessed many locations in Australia and New Zealand for the location of a fully integrated kraft pulp and paper mill. Tumut, NSW, was selected due to availability of resource, water, and transportation routes.

Visy Pulp and Paper, Tumut

Visy Tumut has been built to the highest environmental standards implementing new technologies and processes. In comparison to the best performing mills in either Europe and Northern America, Visy uses up to four times less water, one third less power and surpasses for odour control and air emissions. The mill has been designed as a virtually zero effluent mill, made possible by waste-water from the mill being utilised for irrigation.

The mill commenced operations in May 2001, currently produces 270,000 tonnes of paper per annum and utilises over 800,000 tonnes per annum of local pine plantation pulp wood and sawmill residues. The raw materials are further supplemented with over 100,000 tonnes per annum of domestic and commercial wastepaper, added to the process to produce a high quality 'Kraft' linerboard paper.

The mill consists of the following main areas:

The Woodyard:



The woodyard involves log handling, debarking, chipping storage and conveying of chips and bark to the process.

The wood yard also handles sawmill residues and other wood wastes utilised as fuel for the boiler.

Pulpmill:



Wood chips are mixed with 'liquor' and cooked in a 'digester'.

The cooking process involves separating out the individual fibres in the wood by dissolving the lignin and hemicellulose that binds these together. The chips after pre-conditioning phase are fed through the top of the digestor and as they make their way down the 50 metre high vessel, the fibres and lignin are separated. At the bottom of the digestor the fibres form a slurry which then undergoes further processes of washing and refining to provide the quality of pulp required for the Paper Machine. The lignin and hemicellulose is mixed with the 'liquor' to undergo further processing in the Recovery area.

Recovery:



The used 'liquor' from the Pulpmill initially undergoes evaporation to remove water so as to increase the dry solid content.

This 'liquor' is then sent to the Recovery Boiler where the organics originally from the wood are burnt to produce energy for the process and the chemicals in the initial 'liquor' are recovered and re-processed for use back in the Pulpmill.

Co-Generation:



A significant amount of energy is required in the process for drying paper and evaporating 'liquors'. This heat energy is in the form of steam generated from two boilers.

The steam is initially driven through a steam turbine to produce electricity. The electricity generated makes up almost two thirds of the total power requirement for the mill and is considered as 'green' energy from a renewable resource.

Paper Machine:

The high quality pulp containing approximately 99% water is sprayed onto the 'Wet' end of the Paper Machine.

The pulp undergoes a series of dewatering and drying processes to remove 91% of the water content, to produce high quality 'Kraft' liner board at the 'Dry' end. The Paper produced is sold by various grades into the domestic and export markets



Wastewater Re-use:



High quality treated Waste-water from the mill is stored in a 480ML 'Winter' Storage dam during the off-season.

During the irrigation season the wastewater is applied to over 100 hectares of pasture for growing of various crops. The application rates are controlled through soil moisture monitoring under each of the areas.

VISY PULP AND PAPER VISY PULP AND PAPER VISY PULP AND PAPER

NATIONAL ASSOCIATION OF AGRICULTURAL EDUCATORS

invite you to the

FOURTEENTH BIENNIAL CONFERENCE

It will be held in Canberra from ***Monday 9 January to Friday 13 January 2006.***

The theme of the conference is Research to improve productivity and sustainability. It will be held at the CSIRO. Apart from a major tour we hope to have a choice of 10 significant workshops which consist of a short lecture and practical sessions. Some of the topics include wheat, breeding, the green machine, gene marking in plant disease.

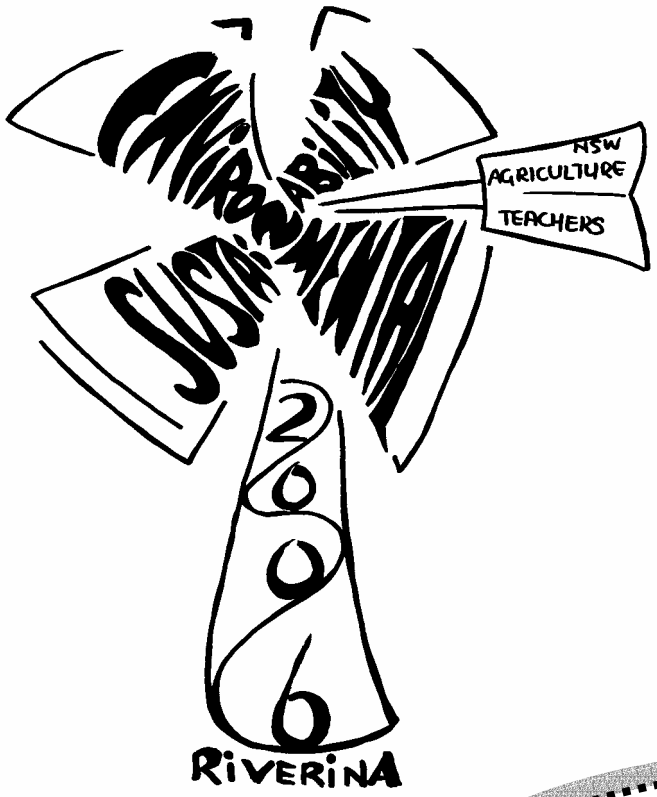
The conference looks like costing approximately $200 per delegate and $250 (Bed & 3 meals a day) for single accommodation in Bruce Hall at the ANU. Families will be able to stay at Bruce Hall. $50 for the conference dinner.

However, we are trying to get so much sponsorship that delegates won't have to pay anything, probably just get a cheque for turning up – oh yeh!

We hope that you will put this into your busy schedule. If you need anymore details please do not hesitate to contact the Conference Organizer.

Terese Falconer

phone (02) 6246 4604
Fax (02) 6246 4600
Mobile (02) 0412 511 330
Email terese.falconer@csiro.au



2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

5

What's Hap'ning in my Paddock!

^ **Broken Hill High School**

- **Steven Foxwell**

^ **Corowa High School**

- **Bryon Adamson**

The earliest windmill was designed for pumping water in Persia in about 500-900AD.

- Broken Hill High School –

Ag at BHHS: Mr Steven Foxwell

^ The current Agriculture program offered at BHHS includes a mandatory Ag component contained in year 7-8 D&T. All year 7-8 students now study some agriculture as part of the new Design and Technology Syllabus. The proposed format is to offer students an introduction to Agriculture for approximately 2 periods a week for a semester during year 7 or year 8. There are about 300 students in year7 and year 8.
(Previously all year 7 completed 3 periods a cycle per fortnight of Ag for the year.)



Doing what Ag teachers do best!



Proud flower gardeners

Ag in Year 8:

^Agriculture is also offered as an elective in year 8.
^ A broader look at Agricultural practices and different enterprises is covered. Students are required to maintain their own plots usually working in pairs. Other areas of study include soils, the farm environment, natural cycles, aquaculture, basic sheep husbandry and animal nutrition. Currently one year 8 elective class is operating.

Ag in Year 9 & 10:

^ Year 9-10 school certificate Ag focuses on Agricultural Enterprises.
^ Students in year 9 begin the year with a poultry unit and raise their own birds from day old to point of laying. They also develop individual and class plots with more emphasis placed on commercial quantities of produce. The final unit is the study of beef cattle enterprises. Students are involved in all aspects of beef cattle. Students in year 10 focus on farm management including budgeting and marketing they are encouraged to form their own companies by researching, growing & marketing produce.
^ Students investigate wheat and cotton. Other areas of study include Hydroponics including plant function and reproduction, the wool industry and farm technology are also included.
^ Currently there is a year 9 and a year 10 class operating.

P.I. at Broken Hill High:

^ BHHS also offers Primary Industries and currently has a year 11 and a year 12 class.



The boys are proud of their tomatoes. Well done.

Ag around the Hill:

^ Main Agricultural industries locally centre on wool, however a local olive Co-op has formed and shows promise.
^ Encouraged by this the school intends to plant up to 40 olive trees and use primar industry and other VET students to grow and harvest olives for the table and possibly oil production.
^ The hot dry climate prevents a lot of agricultural production and the rising cost of water limits irrigation potential.
^ Soil pH of 7.5-8 allows most crops to attempt outside of midsummer.



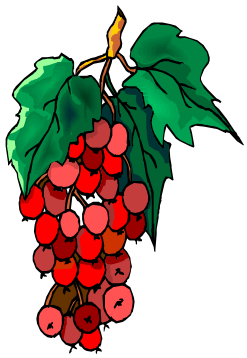




To Mr Foxwell & the Year 10 Ag students at BHHS; thanks for sharing your fantastic work with me, when I visited recently. Good to see Ag so strong at the Hill.

President NSWAAT

- Corowa High
Ventures into Viticulture!-



- **The viticulture course started at CHS in 2000**
- **The course has been developed by the Wine Industry National Education Training and Advisory Council {WINETAC}**
- **The course is for year 11 and 12 students.**
- **The course is competency skills based with students achieving an Australian Qualification Framework {AQF} Certificate 1 in Food Processing {Wine}.**



- **In 2000 CHS established 470 vines at school**
- **The vines were planted NOV. 2000.**
- **The varieties planted were:**
  - **^ Shiraz 200 vines**
  - **^ Durif 200 vines**
  - **^ Viognier 70 vines**
  - **{a French white variety}**

- Students work in the school vineyard and do workplacements at local vineyards to gain competency in the following skills:

^ Planting vines, ^Pruning vines, ^ Take vine cuttings, ^Carry out basic canopy management & ^ Pick grapes by hand.

- Local vineyards that participate in workplacements are:

^ All Saints, ^ St Leonards, ^ Campbells, ^ Cofields, ^ Chambers, ^ Pfeiffers, ^ Rutherglen Estates, ^Stanton and Killeen, & ^ Vinemarc.



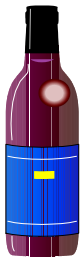
Well done



Corowa High!

- **In March 2002: 140kg of Durif grapes were harvested, crushed and fermented.**
- **Later the juice was pressed producing 100L of wine.**
- **All these processes were carried out at school.**
- **In SEPT 2002 the wine was bottled producing 99 bottles!**
- **In OCT the wine was entered in the Victorian Wine Show.**
- **Corowa High School in the amateur scored well by taking out:**
  - **Silver Medal: 2003 Viognier**
  - **Bronze Medal: 2003 Durif**
- **A label design competition was run at school for students and staff. Yr 10 student Grace Milthorpe designed the wining label.**
- **The wine was released for sale at Cofield Wines in DEC 2002.**

- In 2003 we harvested:
  - ^ 1,400kg of Durif,
  - ^ 220kg of Shiraz &
  - ^ 350kg of Viognier.



- A total harvest of 1,970kg.

- The Viognier was sold to Cofields.

- The Durif and Shiraz grapes were processed at school and stored in oak barrels.

- In JULY 2004 the wine was bottled producing 1,000 bottles of Durif.

^ This wine will be sold later this year.





- In 2004 we harvested:
  - # 1,840kg of Durif,
  - # 590kg of Shiraz &
  - # 570kg of Viognier.
- A total harvest of 3 tonnes!

- The Viognier was sold to Cofields.

- The Durif and Shiraz were processed at school producing:
  - # 900L of Durif &
  - # 300L of Shiraz.

- This wine is currently maturing in oak barrels.

- In 2005 we hope to make our first wine from:
  - # the Viognier grapes &
  - # build a winery at school.

(good luck with this project)

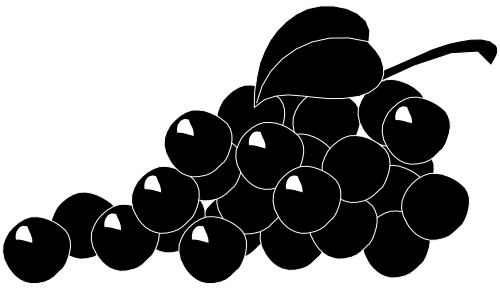
If you are interested in:
"FINDING OUT HOW TO DO IT"
Then contact Bryon

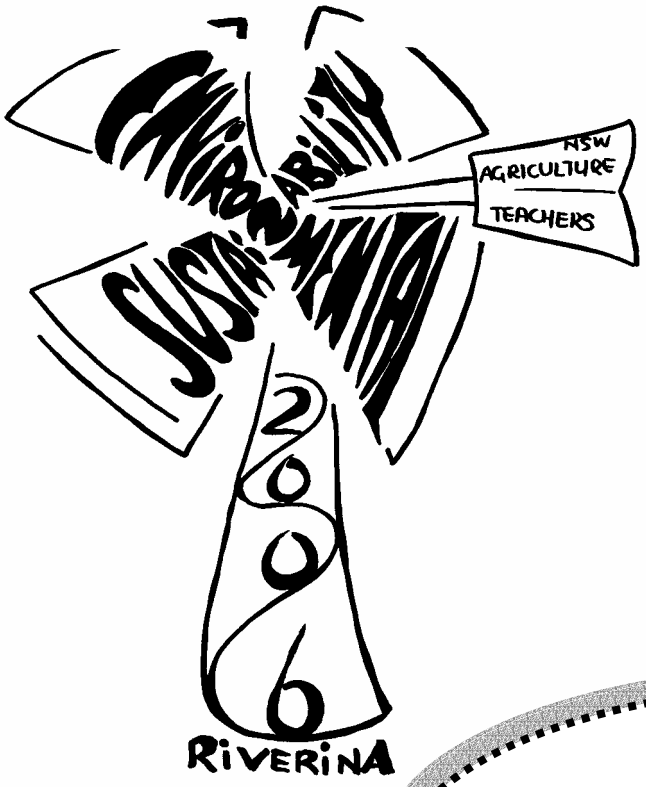




Contact details

Bryon Adamson
Agriculture/ Viticulture teacher
Corowa High School
Redlands Rd. Corowa. NSW. 2646
Ph: 0260331889
Fax:0260334099





2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

6

What's the Go!!

^ Stage 4-5 Syllabus Workshops

- **Curriculum K-12 Directorate**

^ Animals in Education CD

- **2004 Curriculum K-12 Directorate**
- **NSW Department of Education**
- **Association of Independent Schools of NSW**
- **Catholic Education Commission**

^ Animal Ethics

- **NSW Schools Animal Care & Ethics Committee**

^ State Agricultural Advisory Group

^ National Livestock Identification System

- **Letter to NSW Cattle Industry**
- **NLIS Timeline**
- **NLIS Questions & Answers**

^ The Christmas Beetle is a serious pest of Eucalypt trees.
^ A sugar glider may eat 25 Christmas Beetles per day.
^ The decline of sugar gliders may be one of the causes of Eucalypt dieback.

Agriculture Technology Stage 4-5 Syllabus Workshops 2004

^ Windsor ^ Armidale ^ Gosford
^ Kempsey ^ Camden ^ Dubbo
^ Wagga Wagga

Agricultural Technology 7-10 workshops: Sally Bannerman

During Term 2, 2004 I packed my suitcase and headed off around NSW to present workshops for the Technology unit of Curriculum K-12 Directorate. The purpose of these workshops was to assist teachers in NSW Public schools to implement the new Years 7 –10 Agricultural Technology syllabus.

The Agricultural Technology Years 7 –10 syllabus has minimal change from the current syllabus. A few changes that should be noted include:

- Reduced number of outcomes.
- Life skills outcomes and content have been identified to meet the needs of identified special education students.
- Essential content (written as learn abouts and learn tos) has been identified for the study of the 100-hour and 200-hour courses.
- Reduction in the minimum number of agricultural enterprises to be studied from a minimum of six to a minimum of four for the 200-hour course.
- Inclusion of additional content for any students who have achieved the outcomes of the 200-hour course.
- Content relating to a diversity of curricular areas including ICT is identified and incorporated into the content.

Lyndall Foster and Bill Blake from the Technology unit of Curriculum K-12 Directorate managed the process of identifying and supporting three agriculture teachers from across NSW to implement the new Agricultural Technology syllabus. The three agriculture teachers were part of a team of 25 teachers representing each of the elective technology syllabuses. These teachers participated in professional development and received funding to support their involvement in the project. These teachers were required to develop a course plan and units of work. This work began in October 2003 and concluded with the publication of their work on the Curriculum K-12 Directorate website. www.curriculumsupport.nsw.edu.au/technology

Lyndall, Bill and I would like to thank the teachers for their hard work and to acknowledge them for the standard of work submitted. The level of commitment and professionalism of the teachers was evident in the quality materials initially submitted, their willingness to accept editorial advice and their readiness to have their work scrutinised by teachers across the state. The teachers involved were Karlene Bailey (Inverell HS), David Randall (Richmond HS) and Peter Humphries (Deniliquin HS). On a personal note, I very much enjoyed both the time and the work I shared with Karlene, Dave and Peter.

The insights gained from working with these teachers were invaluable in developing the activities and materials for the workshops. Their work identified potential issues for teachers and assisted me in my understanding of the new syllabus. The course plans and units of work written by these teachers formed an important part of the workshop and stimulated discussion about;

- selection and sequencing of suitable enterprises
- format and style of teaching programs
- mapping of *learn abouts* and *learn tos* to ensure coverage of the syllabus and progression of learning
- the integration of practical work into the sequence of work.

One session of the workshop that (against my initial concerns) worked well and seemed to time and time again, stimulate discussion and motivate many teachers, was the session that focused on *why we do what we do*, or what is it about our subject that is unique and offers students invaluable experiences. Agriculture teachers still seem to have plenty of passion and insight into the invaluable skills and attitudes that our subject can and does develop in students.

In the afternoon session we grappled with the role of practical work. With the syllabus stating that practical experiences should occupy a minimum of 50 percent of allocated course time, it is essential that practical experiences are well organised, address syllabus content, relevant and integrated within the teaching program.

An added bonus of the workshops was that many participants went back to their schools committed to increasing their involvement in the delivery of the Technology Mandatory course. The Technology unit of Curriculum K-12 Directorate was keen to promote the new Technology (Mandatory) course as being a foundation study for all Technology elective subjects.

Across the state, teachers seemed enthusiastic and heartened at the opportunity to get together and discuss their shared problems and issues. I continue to be inspired myself, by their love of the subject. I only hope that the work I have put into this process can do a small amount to keep the fire burning and encourage the hard work and energy of agriculture teachers throughout NSW.

The Armidale workshop was scheduled in the day before the biennial conference and brought in one of the biggest attendances of the workshops. Many thanks to Tony Barnett for assisting in my transport to and from Armidale and for his team's hard work in organising the conference. The Technology unit of Curriculum K-12 Directorate values the opportunity to collaborate with the NSWAAT.

Whether you participated in the workshops or not, you can access the course plans and units of work written by Karlene, David and Peter on the Curriculum K-12 Directorate website:
www.curriculumsupport.nsw.edu.au
and then follow the Technology pathway, 7-10, Agricultural Technology.
For further information or assistance about implementing the Agricultural Technology Years 7 –10 syllabus or any other technology syllabus, contact:

Lyndall Foster
CEO, Technology
Telephone: (02) 9886 7623
Fax: (02) 9886 7654
lyndall.foster@det.nsw.edu.au

Bill Blake
Senior Curriculum Advisor, Technology
Telephone: (02) 9886 7542
Fax: (02) 9886 7654
bill.blake@det.nsw.edu.au



Why Agriculture is such a great subject & why we love teaching it!

During the term 2 workshops for the new Agricultural Technology course, participants were asked to write down their thoughts and feelings about teaching agriculture and what they believed students stand to gain by studying this subject.

Their ideas and jottings have been summarised below.

Specific knowledge gained from studying agriculture

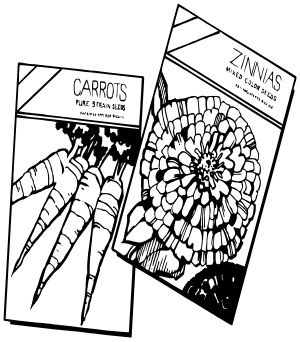
- Integration of technology: not just a computer/ food/ fibre & shelter
- Training in husbandry/ caring for living things: follows onto caring in the community
- Educational training in experimental procedure/ observation & management of resources
- Humane treatment of living things
- More interesting learning experiences that involves being outside, this supports & focuses inside learning experiences, making them more relevant.

Relevance of learning about agriculture

- Learn useful practical life experiences
- Getting back to and fitting in with nature
- Takes students out of their comfort zone
- Introduces students to life's realities: life/ death etc
- Appreciation for the environment
- Understanding & appreciation of where food comes from
- Real life experience: tractors/ animals
- Nurturing



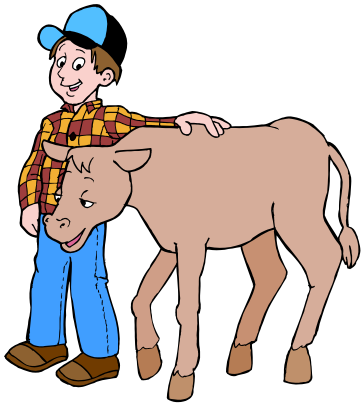
Skills and attitudes developed through the study of agriculture



- Encourages group activities/ co-operation
- Develops organisational skills
- Allows an intergenerational transfer of information through a more casual learning environment and exposure to adults from outside the school community
- Encourages a higher level of responsibility
- Skills are directly transferable to employment
- Develops good OH & S practices

In summary:

What makes our subject special!



The teacher:

* we love our work – we know our stuff, we'll have a go and so do the kids.

The stimulus:

* of going 'outside and doing hands on stuff'.

Sense of achievement:

* for all, including the less academic.

Novelty factor:

* animals, tractors, being outdoors, growing things.

Sally Bannerman

Animals in Education CD

*** This CD is a joint venture between:**

- 2004 Curriculum K-12 Directorate
- NSW Department of Education
- Association of Independent Schools of NSW
- Catholic Education Commission

*** This CD should be in your school if not contact:**
*** SACEC Support Officer, telephone (02) 9886 7426 or**
sally.bannerman@det.nsw.edu.au

*** The CD ROM includes an optional assessment exercise. Teachers who successfully complete this exercise are encouraged to apply to the SECEC Support Officer to receive a certificate acknowledging their achievements.**

*** The use of the Animals in Education CD ROM will assist schools to comply with the legislation & the guidelines.**

Animal Ethics in Schools

o NSW Schools Animal Care
&
Ethics Committee

SACEC

Animal Care and Ethics in NSW Schools

Sally Bannerman

What SACEC Does?

As part of my work as the Schools Animal Care and Ethics Committee (SACEC) Support Officer, I organise and participate in visits to schools where animals are kept. These visits are an essential part of the monitoring process that the SACEC is required to carry out. Each year the SACEC visits a minimum of 16 government and non-government schools throughout NSW. These visits tend to focus on schools that deliver agriculture and primary industries although the SACEC does visit primary schools that keep classroom pets or are involved in particular programs that use animals.

SACEC Concerns

During the last 12 months I have witnessed some situations that have raised some concerns for SACEC members. These have involved the monitoring and control of internal parasites in a variety of livestock, including sheep, cattle or goats.

While schools that control internal parasites in their livestock with little or no drenching should be applauded, the mechanisms for this control should be apparent to the students and should be able to be demonstrated to the SACEC.

Where teachers do not use drenching as a routine practice, the SACEC members would expect the animals to be in excellent condition and the teachers to be carrying out faecal worm counts. When teachers claim that they do not have a worm problem, have no evidence of this as they do not carry out faecal worm counts, and their animals are underweight, the SACEC becomes concerned.



This concern relates to:

^ The health and welfare of the animals. Animals that carry large worm burdens are under stress. This means that their production is diminished and their general health is reduced.

^ The need for students at a school with such animals to be witnessing *best practice*. Agriculture teachers are role models and should be demonstrating this is in all ways especially in the management of animals.

If a teacher decides not to drench routinely, then this decision should be validated by monitoring the animals worm burden by carrying out faecal worm counts. These can be done by either the local veterinarian or the teacher who can involve the students in the process.

Animal Care and Ethics in NSW Schools Sally Bannerman

Best Practice..
Part of best practice is to use an integrated approach to internal parasite control involving good nutrition, selection of animals that show resistance, grazing rotation, monitoring of worm burdens and strategic use of chemicals.

Worm burdens may be increased greatly in school agriculture plots that are small and have high stocking densities. Teachers who have high stocking densities do need to be extra diligent, particularly when new stock arrive and wet conditions occur again.

Assistance Required?
If you feel you need help with internal parasite control then you should talk to your local veterinarian who will be knowledgeable about local problems and conditions.

Useful Websites:
Help is also available on the following websites:

Sheep health
http://www.agric.nsw.gov.au/reader/sheep-internal

Cattle worm control – the basics
http://www.agric.nsw.gov.au/reader/cattlehealth/cattlewormagn.pdf?MIvalObj=19893&doctype=document&MItypeObj=application/pdf&name=/cattlewormagn.pdf

CSIRO Breeding for sustainable worm resistance
http://www.csiro.au/index.asp?type=faq&id=SustainableWormControl

Important Records..
Remember as part of your internal parasite control program to document what you do. This involves noting the dates, animals treated, chemicals used and dose rates in your farm diary or livestock records. It is important to know the chemical you have used and the dose rate to help reduce the chance of resistance building up. If you have a problem this information gives the veterinarian valuable assistance in solving it.

Animals in Education CD
By the time you read this article, all schools in NSW will have received a copy of a CD ROM titled, ***Animals in education***. This CD ROM is a self paced training package that is designed to help teachers further understand the Animal Research Act.
Its distribution was to both government and non-government schools during term three 2004.

For further information about any issues relating to the use of animals in schools, contact SACEC Support Officer,

telephone (02) 9886 7426 or

sally.bannerman@det.nsw.edu.au

Sally Bannerman
SACEC Support Officer



Thanks to Sally for providing the Syllabus Workshop & SACEC articles to BAAT. Important info to all Ag & PI teachers across the state. ***6.6***

AG. TECHNOLOGY SYLLABUS WORKSHOP AT WAGGA WAGGA



Heads down!



Dave, Sally & Al in discussion









Ilka has the floor



← Bryan hard at work; as usual!

→ Peter pondering his programs



Update: State Agricultural Advisory Group

^ We have been very fortunate to retain the Agricultural Advisory Group. It is the only advisory group left in the State with formal recognition and an ongoing function.

Importance of the Agriculture Survey:

^ Each year the School Financial Support Unit sends out a survey (Agriculture Grants for 2004 School Survey) to:

1. Ensure an equitable distribution of the State Agricultural Grants based on the number of students studying agriculture; and

2. Ensure the on-going replacement program for school tractors (used specifically for teaching and learning).

What does State Agricultural Advisory Group Do:

^ This group meets in Sydney once a year and is responsible for assisting Finance and Properties directorates with analyzing the information from the survey.

^ The group maintains records on the tractor replacement program and on determining school needs on a priority basis.

^ From time to time its members are contacts for agriculture teachers and school principals in regard to agriculture in schools.

Who is on the State Agricultural Advisory Group?

^ The group has four agriculture teacher representatives and a nominated delegate from the Secondary Principals Council.

Craig O'Brien	Head Teacher Science Moss Vale High School	ciobrien@hinet.net.au
Phil Hurst	Ag teacher Hawkesbury High School	philhurs@bigpond.com
Phil Armour	Ag teacher Yass High School	philarmour@eudoramail.com
Peter Jones	Head Teacher Science Chifley College - Mt Druitt campus	psjones@zeta.org.au
Jim White:	Principal Oxley High School – Tamworth	Ph: 02 67661677

Phil Armour and Craig O'Brien:

*** These members are voted on the State Advisory Group from the NSW Ag Teachers Assoc.**

*** Two members are voted at each Biannual Conference.**

Advantages of the this Advisory Group

^ The advantage of this group is that the members have knowledge of schools teaching agriculture across the state.

^ They also maintain an extensive database of student numbers and keep records of the age and condition of school tractors.

^ They can also offer advice to the representatives of both properties and finance on issues specific to agriculture including school farms.

^ Schools also access the group for advice on agricultural related problems.

 # # Can I urge all agriculture teachers to complete the survey each year and return it as soon as possible. The group needs accurate information to support your school.



Jim White
Chairperson
State Agricultural Advisory Group
Oxley High School (Tamworth SEA)

National Livestock Identification System

- **Letter to NSW Cattle Industry**
- **NLIS Timeline**
- **NLIS Questions & Answers**
- **Important *implications for us as Agriculture Teachers in schools.***

An open letter to the NSW cattle industry

National Livestock Identification System (NLIS) has arrived

On 1 July 2004 the first stage of implementation of the National Livestock Identification System (NLIS) for cattle commenced in NSW. The system will be introduced over two years. A brochure explaining the NLIS implementation timetable and what you will need to do on your farm is enclosed. If you do not meet your NLIS obligations the market for your cattle may be limited. On the back of this letter you will find a list of the NLIS tag and bolus suppliers.

The NLIS is a permanent whole-of-life identification system that enables individual animals to be tracked from property-of-birth to slaughter. Permanent identification will benefit the livestock industries by:

- improving livestock traceability to reduce the impact of livestock diseases and residue incidents;
- making access to overseas markets more secure;
- maintaining consumer confidence in Australian beef and dairy products;
- offering producers improved herd management options and better access to carcase feedback;
- providing better proof of ownership to reduce stock theft.

The NLIS has been introduced in NSW after extensive consultation with all sectors of the cattle industry. The implementation timetable has been developed by the NSW NLIS Advisory Committee which represents NSW Farmers' Association, Australian Meat Industry Council, Australian Lot Feeders Association, Saleyard Operators Association, Stock & Station Agents Association, Livestock Transporters Association, Rural Lands Protection Boards, NSW Food Authority, Meat & Livestock Australia (MLA), NSW Police and NSW Department of Primary Industries.

Victoria commenced the first stage of implementation in January 2002. The Victorian cattle industry has found that the NLIS tag and reader technology has performed well. The national NLIS database has recorded and stored over 1 million Victorian transactions in the first 6 months of 2004.

Cattle producers and agents have identified some problems that need to be solved to enable NLIS to be successfully implemented in NSW. The NSW NLIS Advisory Committee acknowledges these as issues for their attention and will work to seek solutions.

One area is training of saleyard and stock and station agent staff to ensure that they are able to effectively use the NLIS database from 1 July 2005. As NSW saleyards install NLIS equipment, trained staff will ensure that the transfer of stock is entered on the NLIS database. NSW saleyards and abattoirs have started to plan for NLIS equipment installation; others already have some equipment in place.

If you have any questions about how to implement NLIS please check the NSW Department of Primary Industries web site on **www.dpi.nsw.gov.au** or phone the NLIS enquiry line on **1300 720 405**. Alternate contacts are your local Department of Primary Industries Livestock Officer or Rural Lands Protection Board.

Yours sincerely

Chairman, NSW NLIS Advisory Committee.

NATIONAL LIVESTOCK IDENTIFICATION SYSTEM

Obtaining NLIS devices in New South Wales

When ordering NLIS-approved devices there are a number of things to consider.

You are only permitted to use devices which have been approved by a Standards Committee and have the NLIS logo printed on them. Current NLIS approved devices are listed in the table below. Other devices may become approved in the future.

Basically there are two types of NLIS devices available: ear tag devices or rumen boluses. The rumen bolus comes with a visual ear tag.

The NLIS devices are available in two colours:

- White breeder devices for cattle born on the property
- Orange post-breeder devices for use on unidentified cattle brought from another property.

Once you have decided the type of device you require, you obtain an NLIS device order form from your local Rural Lands Protection Board (RLPB) or rural merchandiser.

Complete the device order form by specifying the Property Identification Code (PIC/ tailtag number); your contact details; and the number and type of devices required.

Whether you order through your RLPB or a rural merchant, all orders must be checked and endorsed by the RLPB to ensure the right person is ordering the devices with the correct PIC. The RLPB may charge a fee for this endorsement.

Allow about 10 working days from time of order until delivery.

NLIS approved devices

Manufacturer	Device	Ordering
Allflex Australia Pty Ltd 33 Neumann Rd, CAPALABA QLD 4157 Phone: 07 3245 9100 Fax: 07 3245 9110 customer.service@allflex.com.au www.allflex.com.au	Ear tag RRP $3.36 + GST Applicator $33.60 + GST	Option A. Place order with rural merchant. Verification of order with RLPB. Option B. Obtain order form from RLPB and nominate a rural merchant for billing.
Animalife ID Pty Ltd Unit 1-6 Jones Rd, CAPALABA QLD 4157 Phone: 07 3823 2130 Fax: 07 3823 1297 smartcap@acenet.net.au www.livestock-id.com	Rumen bolus & matching tag RRP $3.80 + GST Applicator $75.00 + GST	Order form available at Rural Lands Protection Board. Payment by cheque and money order. EFT available on request.
Leader Products Pty Ltd P.O Box 42, CRAIGEBURN VIC 3064 Phone: 03 9308 2355 Fax: 03 9308 3486 www.leaderproducts.com.au sales@leaderproducts.com.au	Ear tag RRP $3.30 + GST Applicator $35.00 + GST	Order forms available at rural merchants and Rural Lands Protection Board.



Prices are effective 1 July 2004 and subject to variation. Freight and handling charges may apply.
Applicators are required to attach ear tag devices or administer rumen boluses.

NSW DEPARTMENT OF PRIMARY INDUSTRIES

National Livestock Identification System

NATIONAL LIVESTOCK IDENTIFICATION SYSTEM

The National Livestock Identification System (NLIS), Australia's system for the identification and tracing of livestock, is to be phased in across NSW.

Key dates for the staged implementation are:

Starting on 1 July 2004

Calves born after that date will have to be identified with an NLIS ear device or rumen bolus before they leave their property of birth. 'Bobby calves' under six weeks of age and calves at foot will be exempt until 1 July 2005, but a transaction tag (tail or ear tag) will still be required.

From 1 July 2005

All cattle, irrespective of age, will have to be identified with an NLIS device before they leave any property (except bobby calves direct to slaughter).

From 1 July 2005

Saleyards and abattoirs will have to scan cattle traded through saleyards or direct to slaughter and they will advise the NLIS database.

From 1 January 2006

All movements of cattle between properties must be notified to the database.

For further information contact:

NSW Agriculture

1300 720 405

or district offices,

or website:

www.agric.nsw.gov.au

1st Edition May 2004

NSW Agriculture

National Livestock Identification System

From July 1, 2004, the National Livestock Identification System (NLIS) for cattle will be progressively introduced in NSW

NSW Agriculture

NATIONAL LIVESTOCK IDENTIFICATION SYSTEM



What is the NLIS?

The National Livestock Identification System (NLIS) is Australia's system for the identification and tracing of livestock. Cattle are electronically identified for whole-of-life. Individual animals can be tracked from property-of-birth to slaughter through transactions being recorded on the NLIS database, managed by Meat & Livestock Australia (MLA).

Why is the NLIS important?

The main reason to implement a permanent individual ID system for livestock is for ease of traceability in the event of a disease outbreak or residue incident. Recent cases of 'mad cow disease' overseas have highlighted the need for rapid, whole-of-life traceability of stock. Permanent identification will also benefit the livestock industries by:

- making access to overseas markets more secure; and
- maintaining consumer confidence in Australian beef and dairy products.

Do I have to participate in the NLIS for cattle?

Yes. Progressively from 1 July 2004, all cattle producers in NSW will be required to tag cattle with NLIS devices for stock movement.





Do I have to identify all my cattle?

Cattle which stay on their property of birth don't have to be identified, unless you want to for management purposes or to help with the recovery of cattle if they are stolen. When cattle finally leave the farm they will have to be NLIS-identified, before they are sent to a saleyard, abattoir or another property. This includes cattle being moved for sale, slaughter, agistment or to a different property (with a separate PIC) for any reason.

Do I require a PIC (Property Identification Code)?

If you sell more than one or two head of cattle a year it will be more cost effective for you to have a PIC (property identification code or 'tail tag' number). You should also have a PIC if you own or lease/rent land and run cattle. Your NLIS devices must have your PIC number printed on them. If you don't have a PIC or you wish to combine your properties, contact your local Rural Lands Protection Board.

Do I still need to use tail tags if my stock are fitted with NLIS devices?

Yes. During the phase-in period for NLIS in NSW, both NLIS tags and transaction tags (tail or ear tags) will have to be used. Tail tags will no longer be required after 1 July 2006.

Where do I buy NLIS devices and how much do they cost?

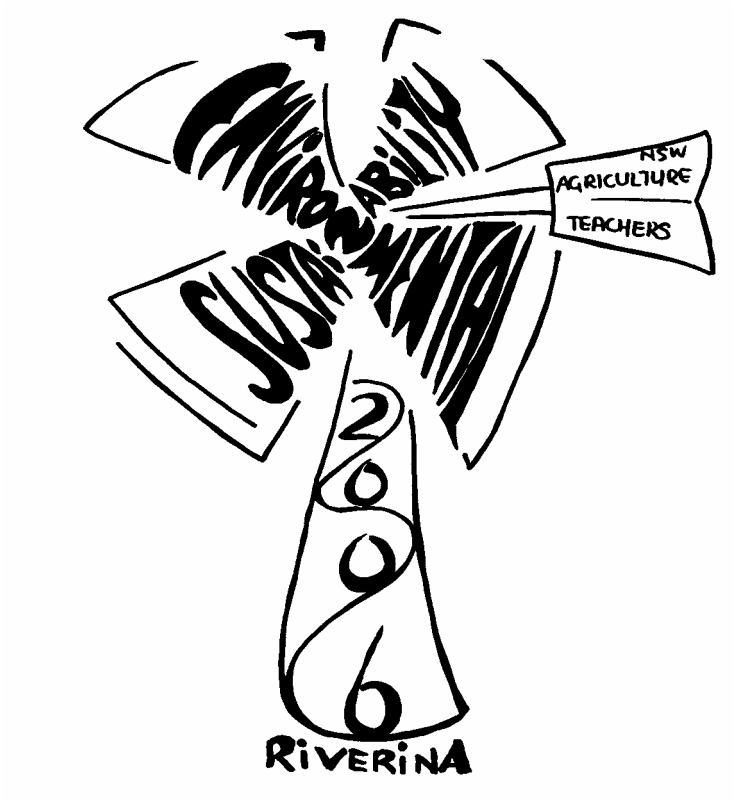
Devices can be ordered through your Rural Lands Protection Board (RLPB) or rural merchandiser. Either way, all orders are checked and endorsed by the RLPB to ensure the right person is ordering tags with the correct PIC. Currently there are three ear tag and three rumen bolus suppliers approved to make NLIS devices that meet national standards. At present the cost of ear tags is about $3.50 each.

Do I need a reader to scan the cattle?

This is optional, you don't have to have a reader. From 1 July 2005, saleyards and abattoirs will scan cattle traded through saleyards or direct to slaughter and they will advise the NLIS database. From 1 January 2006, if you buy cattle privately, move cattle between your own properties (with different PIC's), or receive cattle on agistment, then you will have to notify the NLIS database of these movements yourself or arrange for someone else to do it. You can manually read the tag number and report the movement to the NLIS database by fax or email.

National Livestock Identification System

NSW Agriculture



2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

7

Special Feature

^ **TAFE NSW - Riverina Institute**
Graeme Anderson
Head Teacher Agriculture
Primary Industries Centre

^ **Ag Connections**
Kerrie Sutherland
Education Manager
Education Centre

^ **Charles Sturt University**
Agriculture Courses

A large percentage of garden plants most likely die from over-watering than from the lack of water.

TAFE NSW
Riverina Institute
enriching life

TAFE NSW Riverina Institute
Primary Industries Centre.

benchmark
IN QUALITY
ISO 9001

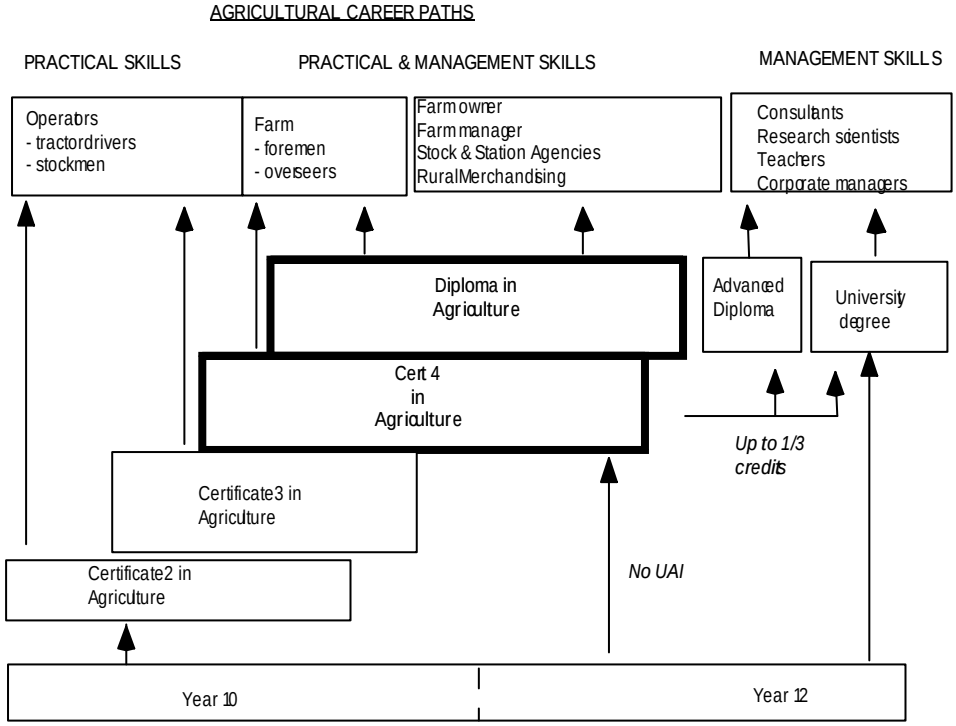
The Crops & Livestock department at the Primary Industries Centre offers a wide range of training in agriculture and related industries.

We offer agricultural training from Certificate II through to Advanced Diploma

- each level course can be completed in 1 year
    - Cert II and Cert III 1 day per week as Trainees
    - Cert IV and Diploma 4 days per week full-time study
        - also offered flexibly through Open Learning
    - Advanced Diploma flexible delivery through Open Learning
- in Certificate courses we are able to offer a wide range of practical skills training using our own commercial farm and access to large-scale properties in the district
- at Diploma & Advanced Diploma levels we deliver quality training in enterprise and business management skills
- specialist training in tractors, ATV's, chainsaws, chemicals, is also available though short-courses
- professional wool classing and owner classing qualifications can be achieved through self-paced flexible study.

Staff come from a wide range of commercial agricultural backgrounds, with many of our part-time teachers actively involved in production agriculture or agriculture service industries.

Crops & Livestock also offers courses in Veterinary Nursing and Equine Studies through flexible evening classes.



TAFE NSW
Riverina Institute
enriching life

Agriculture

Possible
Agriculture course
For your
Agriculture
Students

TAFE NSW – Riverina Institute
Primary Industries Centre
Cnr Coolamon & Farrer Roads
Wagga Wagga NSW 2650
Fax (02) 6939 5025, Tel (02) 6939 5000
http://www.rit.tafensw.edu.au

benchmark IN QUALITY ISO 9001

Award: Certificate IV (AQF)

Course Number: 2483

Contact:
Graeme Anderson
Head Teacher
Agriculture
Primary Industries Centre
(02) 6939 5040

Course Outline

This course is for people in the agriculture industry with some expertise who wish to develop advanced technical and supervisory skills. It also provides the underpinning knowledge required to apply these skills in the workplace.

You will learn how to organise and coordinate the procedures employees in the agriculture industry must carry out as well as learning technical skills that a senior employee, supervisor on an rural enterprise should have. You will also be able to implement and monitor occupational health, safe working practices and quality assurance practices to industry standards.

This course is also suitable for owners of agriculture operations who wish to enhance their technical and supervisory knowledge and skills.

Career Opportunities

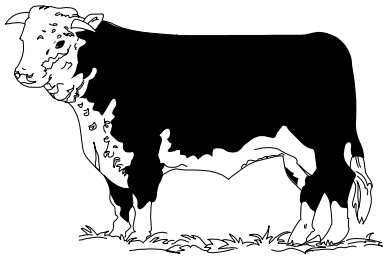
Farm overseer, farm foreman or farm supervisor.

Articulation

When you finish this course you may be able to apply for advanced standing in Agriculture Diploma 2195, including specialisations.

Entrance Requirements

NSW School Certificate (or equivalent statement from another educational authority) and relevant experience, or completion of Certificate III in Agriculture, or equivalent, or relevant workplace or other appropriate
experience.



Attendance

4 ½ days per week for 1 year.
A flexible Open Learning study option is also available.

Further Information

TAFE NSW Fees:

Half Year: $375.00
Full Year: $750.00

If you are receiving a Commonwealth benefit or Youth Allowance you may be eligible for an exemption from paying the TAFE NSW fee for one course per year. Contact your campus for further information.

TAFE NSW
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Possible Agriculture course For your Agriculture Students

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http://www.rit.tafensw.edu.au

benchmark IN QUALITY ISO 9001

Award: Diploma (AQF)

Course Number: 2195

Contact
Graeme Anderson
Head Teacher Agriculture
Primary Industries Centre
(02) 6939 5040

Course Outline

This course is for people in the agricultural industry with some expertise who wish to develop advanced technical and managerial skills. It also provides the underpinning knowledge required to apply these skills in the workplace.

You will learn how to manage the procedures employees in the agriculture industry must carry out as well as learning technical skills that a manager on a rural enterprise should have. You will also be able to implement and monitor occupational health, safe working practices and quality assurance practices to industry standards.

This course is also suitable for owners of agriculture operations who wish to enhance their technical and managerial knowledge and skills.

Career Opportunities

Farm manager.

Articulation

When you finish this course you may be able to apply for advanced standing in Agriculture Advanced Diploma 4239.

Entrance Requirements

NSW Higher School Certificate (or equivalent statement from another educational authority) plus relevant experience, or completion of
Certificate IV in Agriculture or equivalent, or relevant workplace or other appropriate experience.

Attendance

4½ days per week for two years.
A Flexible Open Leaning study option is also available



Further Information

TAFE NSW Fees:

Half Year: $500.00
Full Year: $1000.00

If you are receiving a Commonwealth benefit or Youth Allowance you may be eligible for an exemption from paying the TAFE NSW fee for one course per year. Contact your campus for further information.

Kerrie Sutherland
Po Box 24
Albury, N.S.W. 2640
Phone: 0419 989 077
Fax: 02 6043 1673

kerrie@agconnections.com.au
www.agconnections.com.au

KERRIE SUTHERLAND

A.B.N. 39 214 276 331

Ag Connections is a registered Australian business owned by Kerrie Sutherland. Kerrie established this business after identifying a need for specialized education and training for cattle breeders and the new generation of cattle enthusiasts. Ag Connections operates farmbis accredited courses, and youth cattle camps under the umbrella of a Registered Training Organization, TAFE Primary Industries.

The program covers topics ranging from

- Selection & structural soundness
- Nutrition & herd health
- Animal behaviour & breaking-in
- Show preparation, clipping & leading
- Judging, public speaking and marketing.

The **Youth Cattle Camps** are operating to cater for students from rural and non farming background to allow the opportunity for hands on experience to develop the skills necessary to compete in Handlers and Junior Judging competitions at local and Royal shows and also to exhibit cattle.

As an extension of the business Kerrie offers cattle consulting and organised tours for study groups and breed society's for the Australian and International market.

Further information can be found at my website or contact me on the above details.



Marg Bowden
Ag Connections
Course Coordinator
PH: 02 6946 2189
FAX: 02 6946 2374
MOB: 0412 189 000

Gerard Borg
TAFE Primary Industries
– Team Leader
PH: 02 6939 5001
Fax: 02 6939 5025
MOB: 0429 086 092



CHARLES STURT
UNIVERSITY

The School of Agriculture
Wagga Wagga

Study
. Agriculture
. Horticulture
. Agribusiness
. Equine Science

Every day is open day.
You are welcome to visit
at any time & tours
can be arranged.

Courses available…….

- Bachelor of Science with specialisation in:
  - Agriculture
  - Horticulture (environmental & production)
  - Agribusiness
  - Agronomy
  - Animal Production
  - Irrigation
- Bachelor of Applied Science (Equine Studies)
- Doctor of Veterinary Medicine (from 2005)
- Postgraduate courses: Honours, Masters, PhD
- Graduate Certificates & Diplomas

Why Study at CSU?

- Graduates are in demand.
- A University of excellence in regional Australia with a total of about 180 first year undergraduate students in agriculture, horticulture & equine studies.
- Close links with industry & research.
- Excellent student support services, bridging courses & career preparation.
- A long & distinguished history of agricultural education.
- Flexible study options – study by attending classes full time or part time, or by distance education.
- Accommodation on & off campus.
- Excellent sporting & social facilities

Excellent career opportunities include:

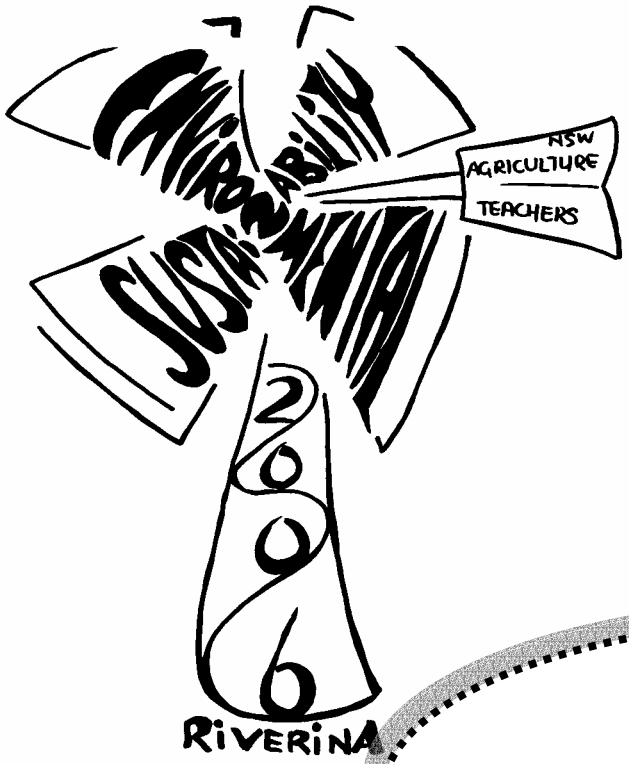
* *Agronomist*
* *Researcher*
* *Teacher*
* *Farm manager*
* *Rural reporter*
* *Consultant*
* *Technical officer*
* *Resource manager*
* *Regulatory manager*
* *Nursery manager*
* *Landscape designer*
* *Crop protectionist*
* *Agribusiness officer*
* *Rural finance officer*
* *Extension/advisory officer*
* *Agvet chemical company rep*
* *Rural merchandise salesperson*
* *Landcare co-ordinator*
* *Quality assurance officer*
* *Animal husbandry manager*
* *Environmental manager*
* *And so on……..*

How to apply…….

- Applications should be made to UAC or direct to the University
- Check with your Principal regarding early entry pathways
- UAI of 70 required for Agriculture, Horticulture & Equine Science.
- HSC Chemistry & Maths desirable
- Check the CSU web site
- Credit may be given for TAFE & other studies.

Need more information?

contact Judith Boadle ph 0269332801
or email jboadle@csu.edu.au
or check our websites: http://www.csu.edu.au
or http://csu.edu.au/faculty/sciagr/sag



2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

8

Resources in Agriculture & Primary Industries

^ Agriculture Year 9
Tumut High School
- **Growing Chickens**
- **Comparative study: Broilers/ Pullets**

^ Primary Industries:
Wagga Wagga High School
- **Units of Competence**
- **Program Sequence**

^ Primary Industries
Tumut High P.I. Core Programs
- **Course Pattern**
- **Unit: "Follow OH&S Procedures"**
- **Unit: "Participate in Workpace Communications**

^ Mr Richard Pratt, who owns Visy Industries & Pratt Water; has a vision to implement a national water strategy, this plan would include open irrigation channels being converted into piped channels or these channels lined & covered.
^ Mr Pratt's vision would see a dramatic reduction in water loss from evaporation & seepage.

YEAR 9 AGRICULTURE
GROWING CHICKENS

NAME: **DATE:**

NUMBER OF CHICKENS/GROUP: _____ SUPPLIER: _____		DURATION PERIOD: _____ AGE OF CHICKENS:_____	
CHICKEN TYPE	CHICKEN NUMBER	BREED TYPE	COST/BIRD
i)			
ii)		i)	
		ii)	

A) **BROILER CHICKENS**

i) Growth Rates

DATE	WEEK	NUMBER WEIGHED	GROSS WEIGHT (grams)	AVERAGE (grams)

ii) Broiler Feed

DATE	WEEK	TYPE	QUANTITY	$ COST $

B) **PULLET CHICKENS**

i) Growth Rates

DATE	WEEK	BREED	NUMBER WEIGHED	GROSS WEIGHT AVERAGE (grams)	BREED AVERAGE (grams)	PULLET AVERAGE (grams)

ii) Pullet Feed

DATE	WEEK	TYPE	QUANTITY	$ COST $

C) **PROTEIN ANALYSIS OF FEED**

WEEK	CHICKEN TYPE	FEED TYPE	PROTEIN %

D) **CHEMICALS:** **-3-**

WEEK	DATE	TYPE	PURPOSE	$COST$

E) **MANAGEMENT RECORD**

WEEK	DATE	TEMPERATURE ^{0}C		DEATHS	REASON
		MAX	MIN	TYPE/No.	

Total Deaths: Pullets _____

Broilers _____

F) **COMPARISON OF EXPENDITURE (8 weeks)**

	BROILERS	PULLETS
Chicken Cost $		
Feed Cost $		
Chemical Cost $		
Total Cost $		
Cost/Bird $		

G) **WEEKLY OBSERVATIONS**

WEEK	BROILERS	PULLETS
1		
2		
3		
4		
5		
6		
7		
8		

H) **SUMMARY:** _____

_____

WAGGA WAGGA HIGH SCHOOL

Primary Industries (240 indicative hours)

MAND	**Attempt ALL units**			
Unit code	**Unit title (these 9 examinable for HSC exam)**	**HSC ind hrs**	**Category status Cert II in Ag**	**Category Status Cert II in Rural Operations**
			4 units -A(inc *) 10 units -B 3 units -B and/or C Total = 17 units	4 units –A(inc*) 6 units –B 7 additional units Total =17 units
RTC2209A	Install, maintain and repair fencing	15	B	B
RTC2401A	Treat weeds	10	B	B
RTC2701A	Follow OHS Procedures	20	A*	A*
RTC2702A	Observe environmental work practices	15	A*	A*
RTC2704A	Provide basic first aid	10	B	B
RTC2705A	Work effectively in the industry	15	A*	A*
RTC2706A	Apply chemicals under supervision	25	B	B
RTC2801A	Participate in workplace communications	10	A*	A*
RTE2503A	Observe and report on weather	10	B	B
	Total	130	9 units	9 units

ELECTIVE POOL	**Attempt units to a minimum value of 110 indicative hours**

General

RTC2210A	Maintain properties and structures	20	B	B
RTC2301A	Undertake operational maintenance of machinery	10	B	B
RTC2307A	Operate machinery and equipment	20	B	B
RTC2309A	Operate tractors	30	B	B
RTD2202A	Conduct erosion and sediment control activities	10	C	B
RTD2313A	Clean machinery of plant, animal and soil material	10	B	B
RTD2803A	Observe and report plants and/or animals	10	C	B
RTE2201A	Carry out basic electric fencing operations	15	B	B
RTE2308A	Operate ride-on vehicles	15	B	B
RTE2603A	Lay irrigation and/or drainage pipes	15	B	B
RTE2804A	Provide information on products and services	15	B	B
RTE2902A	Collect and record production data	10	B	B

Livestock

RTE1105A	Undertake basic shearing and crutching	20	C	B
RTE2110A	Maintain livestock water supplies	15	B	B
RTE2113A	Monitor livestock to parturition	10	B	B
RTE2114A	Monitor water supplies	15	B	B
	8.5			

RTE2115A	Muster and move livestock	10	B	B
RTE2117A	Pen sheep	15	B	B
RTE2118A	Handle livestock using basic techniques	15	B	B
RTE2124A	Carry out birthing duties	10	B	B
RTE2128A	Provide feed for livestock	15	B	B
RTE2134A	Assist with feeding in an intensive production system	10	B	B
RTE2136A	Load and unload livestock	10	B	B
RTE2144A	Carry out regular livestock observation	10	B	B
RTE2216A	Assist in preparing for shearing and crutching	15	B	B
RTE3133A	Prepare livestock for competition	20	C	B

Plants

RTC2012A	Plant trees and shrubs	15	C	B
RTC2016A	Recognise plants	10	B	B
RTC2026A	Undertake propagation activities	20	B	B
RTC2404A	Treat plant pests, diseases and disorders	15	B	B
RTD2004A	Collect, prepare and preserve plant specimens	15	C	B
RTF2013A	Pot-on plants	5	C	B
RTF2014A	Prepare and maintain plant displays	20	C	B
RTF2017A	Prune shrubs and small trees	10	C	B
RTF2024A	Tend nursery plants	10	C	B
RTF2025A	Transplant small trees	10	C	B
RTF2504A	Determine basic properties of soil/growing media	10	B	B
RTE2010A	Establish horticultural crops	15	B	B
RTE2011A	Assist agricultural crop establishment	15	B	B
RTE2021A	Support horticultural crop harvesting	15	B	B
RTE2029A	Assist agricultural crop maintenance	10	B	B
RTE2030A	Assist agricultural crop harvesting	15	B	B
	Total		8 units	8 units

Qualifications

Certificate II in Agriculture is the Industry Qualification most students will be working towards. It will require students to complete **17 units** of competency as shown in the table above. (9 mandatory + 8 electives units)

Specialisation or Extension Study:

It is possible to take extra hours of Primary Industries particularly in Year 12 eg 60hrs (1 unit) 120hrs (2unit). This can give you extra HSC units and possibly extra qualifications. Usually this means specialising in an industry sector. eg beef cattle or poultry.

There are many more units to choose from in this option.

If you had an interest in an Industry sector and you did approximately 4 additional units (approx 60 hrs), you could qualify for a **Cert II in Agriculture** specialising in that field plus possibly **Cert II in Rural Operations** (240 hours)

TUMUT HIGH SCHOOL
PRIMARY INDUSTRIES
HSC & AQF 11 COURSE PATTERN

HSC Requirements	AQF Certificate 11 in Agriculture
"Core Competencies" ^ Participate in workplace communication ^ Follow OHS procedure ^ Provide basic first aid ^ Work effectively in the industry ^ Observe & report weather ^ Observe environmental work practices ^ Install, maintain & repair fencing ^ Apply chemicals under supervision ^ Treat weeds 130hours	**"Core Competencies"** ^ Participate in workplace communication ^ Follow OHS procedure ^ Work effectively in the industry ^ Observe environmental work practices
"Elective Units 110hours	**"Elective Units Group B 10 units**
"General Pool" ^ Maintain properties & structures 20 ^ Operate tractors 30 ^ Operate ride-on vehicles 15	**"General Pool"** ^ Treat weeds ^ Install, maintain & repair fencing ^ Observe & report weather ^ Apply chemicals under supervision
"Livestock Pool" ^ Handle livestock using basic equipment 15 ^ Provide feed for livestock 15	**"General Pool"** ^ Maintain properties & structures ^ Operate tractors ^ Operate ride-on vehicles
"Plant Pool" ^ Pot-on plants 5	**"Livestock Pool"** ^ Handle livestock using basic equipment ^ Provide feed for livestock
	"Plant Pool" ^ Pot-on plants
	3 Units from Group B or C
"Livestock Pool" ^ Load & unload livestock 10	**Group B** **"Livestock Pool"** ^ Load & unload livestock
"Plant Pool" ^ Determine basic properties of soil/ growing media 10 ^ Tend nursery plants 10	**"Plant Pool"** ^ Determine basic properties of soil/growing media
Elective Units Total: 130hours	**"Group C"** ^ Tend nursery plants

WAGGA WAGGA HIGH SCHOOL
PRIMARY INDUSTRIES COURSE OUTLINE

TERMS	1	2	3	4
YEAR 11 Themes/Projects				
Working in industry	*Observe environmental work practices/*Work effectively in the industry/*Participate in workplace communication			
Don't fence me in	*****Install, maintain and repair fencing/*****Follow OHS procedure/*Provide basic first aid			
Weed contr/chem appl&safety		*****Treat weeds/*Apply Chemicals under supervision		
Feed them up	Handle Livestock/Muster and move/Provide feed/			
Operate this	Operate tractors/Operate machinery and equipment			
		Work Placement	Beginner fire fighters Plant Trees and shrubs Exam	Work Placement

YEAR 12				HSC
Weather or not	*Observe and report on the weather			
Electives to complete				
Revision		HSC revision		
Industry Sector Specialisation				
	Exam Work Placement catchup	Trial		

Tumut High School Primary Industries: **Follow OHS Procedures** **RTC2701A** **20 hours** **[Core: Yr. 11]**

Underpinning knowledge to achieve performance criteria:

- Employee & employer responsibilities under the OHS Act.
- Enterprise procedures relating to hazards, fires, emergencies, accidents & risk control.
- OHS signs & symbols relevant to work area.

Underpinning skills to achieve performance criteria:

- Follow workplace procedures for hazard identification & risk control.
- Ability to read safety warning signs.
- Observe safety during work operations.
- Participate in arrangements for maintaining health & safety of all people in the workplace.

HSC Requirements & Advice:

- Key Terms & Concepts

- duty of care	- eliminate/control risks	- emergency services	- emergency situations	- employee & employer rights
- health & safety	- hazard identification	- manual handling	- monitor/report/record	- OHS
- OH&S Act 2000	- OH&S Regulations 2001	- OHS committee	- OHS signs & symbols	- participative arrangements
- PPE	- reporting	- risk assessment	- safe work practices	- safety training
- Workcover				

Evidence Guide:

Competence in following OHS procedures requires evidence:

- hazards have been recognised & reported
- relevant workplace procedures are compiled with
- contributions have been made to participative arrangements

Skills & knowledge required to follow OHS procedures must be transferable to the range of work environments and contexts.

- use of different workplaces, OHS issues, work situations and terms.

Processes should be applied to this competency standard:

There are a number of processes that are learnt throughout work & life, which are required in all jobs. Questions highlight how these processes are applied in this competency standard.

0: not required 1: perform the process 2: perform & administer the process 3: perform, administer & design the process

1. How can *communication of ideas & information* (1) be applied?	By raising OHS issues verbally with supervisor & others
2. How can *information be collected, analysed & organised* (1)?	By recognising hazards, keeping maintenance records & reporting accidents & dangerous occurrences
3. How are *activities planned & organised* (1)?	Following OHS procedures requires limited planning & organising.
4, How can *team work* (1) be applied?	Following OHS procedures will require participation with others in a team.
5. How can the use of *mathematical ideas & techniques* (1) be applied?	To determine liquids & weights used in the workplace.
6. How can *problem solving skills* (1) be applied?	To determine appropriate action in emergency.
7. How can the *use of technology* (1) be applied?	By the use of communication equipment to raise OHS issues.

Element of Competency & Performance Criteria	Teaching Strategies & Activities	Resources	Assessment	Registration
1. Follow workplace procedures for hazard identification & risk control				
1.1 *Hazards in the workplace* - recognised & reported to personnel	^ Identify potential hazards in Ag farm. Risk Assessment. ^ Farm safety audit	^ Potential Hazards W.S. in THS Ag farm ^ Workplace safety inspection checklist	^ Hazard W.S.	
HSC Requirements & Advice: Workpalce procedures for hazard identification & control - Knowledge of designated personnel for hazard identification - Enterprise policies & procedures for reporting hazards in the workplace include accessing manuals/ guides & relevant personnel				
1.2 Assessment of risk with identified hazards	^ Priority/hierarchy of risk ^ Hierarchy of control eliminate/substitute/isolate engineer/work practices/PPE	^ Protective devices used on farm machinery ^ 15minute farm safety check(workcover)	^ Reasons for hazard priority ^ Farm safety check	
HSC Requirements & Advice: - Basic understanding of risk assessment: identify hazards/ assess associated risks/ strategies to control/eliminate risks - Identify hazards within workplace: tools/equipment// machinery operation/ vehicles & tractors/ manual handling/electricity/outdoor work/handling hazardous				
1.3 Workplace procedures & work instructions for controlling risks	^ Policies of farm/school/workp. ^ work orders/ daily work routines Operational procedures for equip. & associated PPE	^ Ag farm assistant work schedules/DET requirements	^ Discussion & questioning	
HSC Requirements & Advice: - Awareness of OHS include: PPE/drinking water/first aid/access to first aid kits/safety signs/emergency plans/environmental policies - Risk control: waterways/vehicles & tractors/tool mach. & equipt/hazardous substances/electricity/noise/emergencies/outdoor work/work with animal & plants				
1.4 Workplace procedures for fire/ accidents/emergencies are followed	^ School evacuation procedures & protocols for accidents/incidents emergency procedures: reporting & recording. Work cover requirements	^ Fire hazards in farm ^ Schools policies ^ GIO relevant forms ^ WWW.workcover.com.au	^ Questioning & written responses ^ Submit GIO forms	
HSC Requirements & Advice: - Processes & procedures for dealing with emergencies: roles responsibilities & reporting. – Emergencies. include; fire/electrical/chemical spills/ gas leaks/natural disaster				

Element of Competency & Performance Criteria	Teaching Strategies & Activities	Resources	Assessment	Registration
1.5 *Risks* to fellow workers/other people & animals are recognised & action taken	^Identify risks with chemicals, gas, machinery, animals, dust, sun, noise eg. sheep muster/collect eggs ^ Children on farm hazards	^ Hazard identification worksheet for farm/WP	^ Hazard worksheet ^ Reasons for hazard	
HSC Requirements & Advice: - Potential risks in workplace: emergencies/ uses of gases in confined places/ use of machinery & equipment/working with animals				
1.6 *Employee responsibilities* prescribed in OHS legislation are recognised	^ List responsibilities of employer in work placement & enterprises	^ Video: A 2 Way Street ^ VET THS employer expect. ^ OHS committee/Act/Reg.	^ Question/answer ^ Work task	
HSC Requirements & Advice: - Cost of workplace injury: human/ social/ economic/ organisational - Basic understanding of: OHS Act 2000/ OHS Regulation 2001 NSW/ Workers compensation Act 1987 NSW - Employer responsibilities under OHS Act (refer to Part B for detail) - Employee responsibilities (refer to Part B for detail) - Basic understanding of OHS committee & responsibilities to haelth & safety preocedures: (refer to Part B for detail)				
1.7 Safety training is undertaken as directed	^ Employee qualifications/chemical/ machinery/confined spaces	^ SMARTtrain/ operate tractors/1st Aid/ CPR	^ SMARTtrain assess ^1st Aid/CPR assess	
HSC Requirements & Advice: - Awareness of safety training include: use of machinery/ chemical use/ OHS induction/ hazard identification & assessment				
2. Observe safe practices during work operations				
2.1 Perform work where PPE is required/identified/used/maintained/ stored in accordance with enterprise	^ Identify/use/clean/store PPE in spraying task, Ecology Reserve ^ PPE when animal handling/ machinery use	^ Tractor Operation & Maintenance course ^ Operate Tractors Workcover	^ Observation & questioning ^ SMARTtrain ^ examinations	
HSC Requirements & Advice: - PPE: include: footware, head protection, gloves, overalls, apron, respirator, face mask, hearing protection, eye protection, sunscreen, water clothing - Importance & Maintenance of PPE				

Element of Competency & Performance Criteria	Teaching Strategies & Activities	Resources	Assessment	Registration
2.2 Basic safety checks on all machinery & equipment before used	^ Pre-start checks ^ POWER: petrol/oil/water/ electrics/rubber	^ Operators manual ^ Operate tractors	^ Observation & questioning	
2.3 Hazards identified when handling hazardous substances. Risk assessed in OHS. Enterprise *procedures* **HSC Requirements & Advice:** - Hazardous substances include: chemicals/ gases/ waste material	^ Farm chemicals: risk assess. hazard identified - collection/ transport/ application storage/disposal	^ Chemical labels ^ MSDS ^ Chemical videos ^ SMARTtrain	^ Written responses ^ SMARTtrain assess ^ Examinations	
2.4 Noise hazards identified notified/risk assess in OHS	^ Loudness monitor: check all machinery & manuals. Decibel	^ Monitor ^ Manuals OHS info	^ Written responses ^ Observations	
2.5 Manual handling job risks are assesses prior to work carried out. **HSC Requirements & Advice:** - Manual handling include: moving/ lifting/ shovelling/ hand held tools/ loading storing at heights/ bending/ repetitious tasks/ handling plants & animals	^ Assess daily tasks of farm assistant for risks: Establish control options ^ Procedures for safe handling of livestock(self/animals/others)	^ Farm Assistant daily task list ^ Workcover: lift info	^ Role play ^ Work tasks	
2.6 Information on OHS is assessed as required **HSC Requirements & Advice:** - Sources of information include: training manuals/ enterprise policies & procedures/ Workcover documents/ legislation/ operators manuals/ manufacturers spec. - Awareness of key bodies in OHS: Workcover/ Farmsafe Australia/ Farmsafe NSW - Basic understanding of: workers compensation & public liability	^ Awareness & access to relevant information ^ Relates to 1.3:1.4:1.6:1.7 ^ Public liability ^ Workers compensation	^ Workcover ^ Operators manual ^Farmsafe Australia ^ Farmsafe (NSW Assoc) ^ Samples of Workers comp	^ Questioning & responses	

Element of Competency & Performance Criteria	Teaching Strategies & Activities	Resources	Assessment	Registration
3. Participate in arrangements for maintaining health & safety of all people in the workplace				
3.1 Individuals have input into ongoing monitoring & reporting on all aspects of workplace safety **HSC Requirements & Advice:** - Roles & responsibilities of OHS committees - Concept of 'paticipation' in workplace safety	^ Attend farm meeting ^ Agenda & minutes developed ^ Identify & report OHS issues	^ Workplace safety ^ OHS requirements in workplace	^ Minutes of meeting ^ Questions within meeting	
3.2 OHS issues raised with personnel in accordance with enterprise enterprise procedures & OHS regulation **HSC Requirements & Advice:** - Monitor & reporting OHS include: documentation(safety audits/accident reports & Workcover forms)/ registers/ logs/ checklists/files - OHS issues include: unsafe machinery/procedures/practices & inadequate facilities -OHS hazard	^ An unsafe situation scenario in farm: report of issues & knowledge of work place policies	^ Assessing risk documents ^ Hazard identification of Ag farm	^ Role play ^ Discussion & questioning	
3.3 Contributions to *participative arrangements* in the workplace are made within organisational procedures	^ Continuation of 3.2: students active in process	^ OHS hazards	^ Role play ^ Discussion & questioning	
3.4 Contributions are provided towards the development of effective solutions to control the level of risk associated with enterprise activities	^ Formation of solutions to an unsafe situation scenario in the farm	^ Assessing risk documents ^ Hazard identification of Ag farm & its solutions	^ Written responses ^ Discussion & observation	
Evaluation:				

ASSESSMENT OF RTC2701A**- Follow OH&S Procedures**

There are a number of assessment strategies that can be used to gather evidence of student competency for this unit. The competencies being assessed and the assessment requirement of the unit will determine the choice of strategies.

Observation;

- information can be recorded using checklists or log books

Oral tests or questioning:

- assess students ability to listen, interpret and communication ideas & information

Reports:

- investigate or report on an exercise; in the on-job or off-the-job training.

Simulation/role-play/case study:

- wide range of interpersonal skills assessed this way
- case studies enable students to display problem solving & decision making skills

Portfolio of Evidence:

- documentary material to provide evidence of performance against set criteria
- can include direct/ indirect & supplementary sources.

Written test:

- focus on knowledge, comprehension or problem-solving skills

	ELEMENTS	
Strategies	**1**	**2**
Observation		
Written test		
Oral Questioning		
Report		
Simulation		
Portfolio		

- Board of Studies Assessment should be referred to for types of assessment tools used to assess these elements competencies in this CORE Unit. School based assessment policy for the year 11 Primary Industries should be accessed for referral.

Tumut High School Primary Industries: **Participate in workplace communication** **RTC2801A 10 hours [Core: Yr. 11]**

Underpinning knowledge to achieve performance criteria:

= Effective communication.
= Written communication.
= Different modes of communication.
= Effective communication in a work team.
= Communication procedures & systems & technology relevant to enterprise & individual's work responsibilities.
= OHS legislative requirements & Codes of Practice.

Underpinning skills to achieve performance criteria:

= Follow simple spoken messages.
= Gather & provide information in response to workplace requirements.
= Estimate, calculate & record routine workplace measures.
= Estimation processes.
= Perform routine workplace duties following simple written notices.
= Complete relevant work related documents.
= Basic mathematical processes, subtraction, division & multiplication.
= Participate in workplace meetings & discussions.

HSC Requirements & Advice:

- Key Terms & Concepts

- active listening	- appropriate language	- basic maths processes	- clarification	- conditions of employment
- cultural diversity	- effective verbal communication	- enterprise requirements	- meeting protocols	- enterprise communication procedures
- locate &store informat	- modes of communication	- personal presentation	- types of meetings	- reporting & recording
- types of meetings	- types of teams	- verbal & non verbal comm.	- workplace forms	- workplace information
- written workplace notices & instructions.				

Evidence Guide:

Participating in workplace communication s in the workplace requires evidence:

- Effective communication has been carried out according to elements & criteria; according to workplace guidelines & procedures.
- Skills & knowledge required to participate in workplace communications must be transferable to a range of work environments.
- Different workplace, types of communication & work teams.

Processes should be applied to this competency standard:

There are a number of processes that are learnt throughout work & life, which are required in all jobs. Questions highlight how these processes are applied in this competency standard.

0: not required 1: perform the process 2: perform & administer the process 3: perform, administer & design the process

1. How can *communication of ideas & information* (1) be applied?	By discussion with supervisors & others
2. How can *information be collected, analysed & organised* (1)?	By obtaining various work place documents & processing them accordingly.
3. How are *activities planned & organised* (1)?	Participating in workplace communications requires limited planning & organising.
4, How can *team work* (1) be applied?	Participating in workplace communications will require participation with others in a team.
5. How can the use of *mathematical ideas & techniques* (1) be applied?	Maths ideas & techniques can be applied by calculating & recording workplace information.
6. How can *problem solving skills* (1) be applied?	In emergencies or communication breakdowns, technical problems may arise/solutions need.
7. How can the *use of technology* (1) be applied?	Calculators, computers, telephones & radios may be required to communicate & calculate.

Element of Competency & Performance Criteria	Teaching Strategies & Activities	Resources	Assessment	Registration
3. Follow routine spoken messages				
3.1 Required information is gathered by listening & is correctly interpreted	^ Update chemical inventory ^ Use of phone to update MSDS in Ag farm	^ Current farm inventory ^ Chemical MSDS resource ^ Phone protocol	^ Phone activity & correct protocol ^ Access of MSDS	
HSC Requirements & Advice: - Forms of communication include: Verbal & non-verbal - Effective communication techniques include: active listening & barriers to effective listening. - Modes of verbal communication: face to face: telephone: answering machine: two way radio				
3.2 Instructions/procedures followed in appropriate sequence for tasks & in accordance with info received	^ **Workplacement or work block** ^ Routine tasks: - list task/rank task in priority - questions to supervisor	^ Work routine worksheet ^ Workplace manual: students/employer expectations	^ Written/observation ^ Submission of work task document	
HSC Requirements & Advice: - Industry standards for workplace interaction include: courtesy/ discretion/ confidentially/ structured follow up procedures				
3.3 Clarification is sought from work place supervisor on all occasions when instruction/procedure is not understood	^ **Workplacement or work block:** Forms of communication: example:2 way radio/telephone face-to-face /written(electronic /memos/instruction non verbal (gestures/signals/signsdiagrams).	^ Work routine worksheet ^ Forms of communication used & listed in work place	^Submission of work task from workplace ^ List of comm'ation forms used in work.	
HSC Requirements & Advice: - Clarification through workplace interactions include: ➢ verbal discussions (face to face/ telephone/ electronic/ two way radio) ➢ written form: (electronic/ memos/ forms) ➢ non verbal: (gestures/ signals/ signs/ diagrams)				
4. Perform workplace duties following routine written notices: **Workplacement or work block**				
2.1 Written workplace notices & instructions are read & interpreted correctly	^ Contact to supervisor ^ Workplace requirements eg timing/clothing/transport	^ Requirements of students entering workplace document ^ Student to make contact	^ Written notes on needs of student entering workplace	

Element of Competency & *Performance Criteria*	Teaching Strategies & Activities	Resources	Assessment	Registration
(con't) 3.1 Routine written instructions/ procedures are followed in sequence	^ **Workplacement or work block** ^ List tasks & reasoning for sequencing of task & timing	^ Specific enterprise workplacement & work sheet ^ Protocol in Ag farm	^ Submission of routine task document ^ Written responses	
HSC Requirements & Advice: - Written workplace notices include; instructions/ labels/ symbols/ signs/ tables/ simple graphs/ personnel information/ notes/ rosters/ safety material/ messages/ industry network details/ enterprise specific data				
➢ Routine written instructions procedures are followed in sequence	^Dress requirements for tasks ^ Routine tasks: -priority to tasks on daily basis	^ Work routine worksheet ^ Dress code for tasks ^ PPE for tasks ^ Protocol in Ag farm	^ Written/observation ^ Submission of work task document	
HSC Requirements & Advice: -Procedure include: + Safety (dress requirements) + Directions from supervisor + PPE + working policies				
➢ Clarification is sought from workplace supervisor on all occasions when instruction or procedure is not understood	^ Organisational command of workplace ^ Supervisors responsibility	^ "Nature of workplace Communication": Video ^ Sources of communication in Ag farm.	^ Written ^ Organisational sequence of workplacement	
HSC Requirements & Advice: - Understanding of the organisational chain of command & appropriate sources of advice.				
➢ Obtain & provide information in response to workplace requirements 3.1 Specific, relevant information is obtained	^ Research rural occupations relevant to workplace & work block enterprises	^ Reference material ^ Industry expertise ^ Internet/library	^ Report on selected career choice & its job roles/career options/expectations	
HSC Requirements & Advice: - Identification of appropriate information sources: reference material/ library/ internet/ industry experts/ colleagues. - Effective questioning techniques: open question/ closed question/ reflective questions				

Element of Competency & Performance Criteria	Teaching Strategies & Activities	Resources	Assessment	Registration
➢ Important information is interpreted correctly	^ Attend Landcare meeting ^ Attend specialised field day or professional seminar ^ Henty Field Day ^ As 3.1 activities	^ Local Vet ^ Landcare ^ Dept of Ag	^ Report ^ Observation & questioning	
HSC Requirements & Advice: - Importance of; questioning & active listening/ summarising & clarifying information				
➢ Information is written completely accurately & legibly	^ Send & collect a facsimile & e-mail	^ Access to computer facilities & facsimile	^ Submission of facsimile & e-mail	
HSC Requirements & Advice: - Written communication: e-mail/ facsimiles/ letters/ memos/ workplace forms ➢ Awareness of appropriate language for communication ➢ Importance of recording information that is: clear & concise/ direct/ purposeful/ accurate & legible				
➢ Sources of required information are identified & appropriate *contact* established	^ Select a professional career in primary industry & research career using other means than used in 3.1	^ Suppliers/ local govt. trade personnel/ regulatory bodies/ training personnel/ contractors/ advisers	^ Written report ^ Seminar report	
HSC Requirements & Advice: - Access information through contacts: suppliers/ industry bodies/ local govt./ regulatory bodies/ trade personnel/ contractors & advisers ➢ Modes of communication: face-to-face/ telephone/ written/ e-mail/ facsimile/ 2 way radio/ mobile phone/ answering machine/ paging systems				
➢ Personal ***interaction*** is courteous & enquires carried out clearly & concisely	^ Send & collect a facsimile & e-mail ^ 2 way radio communication	^ Access to computer facilities & facsimile ^ Fire brigade radios	^ Role play ^ Work tasks	
HSC Requirements & Advice: ➢ Understanding of workplace interactions: being efficient/ effective/ responsive/ courteous/ & supportive ➢ Use correct forms of greeting/ identification/ & address ➢ Present enterprise in positive way// discretion// confidentiality				

Element of Competency & Performance Criteria	Teaching Strategies & Activities	Resources	Assessment	Registration
3.6 Defined workplace procedures for the location & ***storage*** of information used **HSC Requirements & Advice:** ➢ Storage of information using manual & electronic filing systems ➢ Awareness of following work procedures when locate & store information	^ Investigate the storage of data in Ag farm. Weather data/animal chemical records	^ Files in Ag farm ^ Animal ethics requirement	^ Examination ^ SMARTtrain ^ Question/observe	
➢ Complete relevant work related documents ➢ Range of ***forms*** relating to conditions of employment are completed accurately & legibly **HSC Requirements & Advice:** - Workplace forms relating to conditions of employment: personnel forms/ work rosters/ time sheets	^ Investigate a variety of employment situations & forms required ^ Use DET & farm assistant ^ Choose a job title; enquire about ➢ award covering chosen job ➢ is it federal or state award? ➢ How & where can apply?	^ 'Sign on' book ^ Incident forms ^ Telephone messages ^ OH&S reports/work rosters ^Dept Industrial Relations ^ www.dir.nsw.gov.au Examples of job contracts	^ Complete a sample form for particular workplace	
4.2 Workplace data is recorded on standard workplace forms & documents	^ Estimates & calculations of pay/ leave entitlements/allowances/ materials usage/product characteristics(weather/stock No's) ^ Chemical inventory: quantities ^ Ag farm supplies order procedure ^ Examine pay slips: gross/net pay tax deductions/ tax brackets(ATO) ^ Sample employment declaration form ^ Group certificates ^ Superannuation schemes & application forms	^ Completed relevant forms ^ Workplace entitlements/ Pastoral Award ^ Order processes of supplies ^ www.ato.com.au	^ Written ^ Discussion & questioning ^ Collection of completed forms	

Element of Competency & Performance Criteria	Teaching Strategies & Activities	Resources	Assessment	Registration
4.2 (con't) **HSC Requirements & Advice:** ➢ Workplace forms: telephone messages/ stock control/ invoice & orders/ safety reports Standards of information: accuracy/ legibility/ terminology				
4.3 Basic Mathematical processes used for routine calculations **HSC Requirements & Advice:** - Perform routine calculations of; pay/ leave entitle.ts/ workplace allowances/ materials usage/ products characteristics(length:weight:time;temp:stock age & Nos)	^ Average weights of animals ^ Calculate: pays/entitlements etc. ^ Area of Ag farm & Bonner Fields (designated area %)	^ Pay/entitlements of sample enterprise employees ^ Animals weigh records	^ Written ^ Recorded results	
3.2 Errors in recording information on forms/documents are identified & rectified	^ Appropriate forms eg pay/ workers entitlements. Student to locate errors on completed forms	^ Completed forms from 4.2 & 4.3 above	^ Corrected completed forms from 4.2/4.3	
3.3 Reporting requirements to supervisor are completed according to enterprise guidelines **HSC Requirements & Advice:** - Understand lines of reporting & communication with supervisors within the workplace	^ Calculate: pays/entitlements etc as 4.2 & 4.3 above	^ Completed relevant forms ^ Pay/entitlements of sample enterprise employees	^ Written ^ Discussion & questioning	
4 Participate in workplace meetings & discussions 5.1 Team meetings are attended on time **HSC Requirements & Advice:** ➢ Meeting types include: formal & informal: small & large groups ➢ Types of teams: work function/ level of supervision/ work roster	^ Farm meeting agenda/present/minutes/frequency questions & timing ^ Attend Landcare/Fire Brigade meeting	^ Record of question & response ^ Minutes of meeting	^ Written ^ Observations/ & questions	

Element of Competency & Performance	Teaching Strategies Criteria	Resources & Activities	Assessment	Registration
5.2 Own opinions are clearly expressed & those of others are listened to without interruption	^ **Workplacement or work block** ^ Interaction within above & farm meeting	^ Meeting protocol ^ Interaction in work place & organisation meetings	^ Written questions & responses to own enquiries	
HSC Requirements & Advice: ➢ Effective verbal communication: appropriate language/ clear voice/ audible volume/ courteous tone ➢ Effective communication techniques to listening: active listening/ barriers to effective listening				
4.1 Meeting inputs are consistent with meeting purpose & established ***protocols***	^ Protocols of meeting outlined student input consistent with meeting processes	^ Meeting protocol	^ Written responses to meeting: 5.1	
HSC Requirements & Advice: ➢ Meeting purposes include: staff, team & client //customer meetings ➢ Meeting protocols include: observation of opening meetings/ meeting minutes/ nominating & seconding proposals ➢ Compliance with meeting decisions ➢ Obeying meeting instructions ➢ confidentiality				
4.2 Workplace interaction are conducted in a courteous manner appropriate to cultural background & authority in the enterprise procedures	^ **Workplacement or work block** ^ Employer report on students manner, interest/involvement	^ Enterprise employers ^ **Workplacement or work block** student report	^ Student report **from** work activities	
HSC Requirements & Advice: ➢ Appreciation of how cultural diversity contributes to differing social values & expectations & customs ➢ Importance of: tolerating & respecting differences/ adopting a sensitive approach when dealing with another's point of view/Constructively raising & discussing issues -An understanding of hierarchical structures within enterprises				

Element of Competency & Performance	Teaching Strategies Criteria	Resources & Activities	Assessment	Registration
4.3 Questions about simple routine workplace procedure & matters concerning conditions of employment are asked & responded to	^ Questions raised on workplacement & work block re: procedures conditions & employment	^ **Workplacement or work block** student report	^ Student report from work activities	
4.4 Meeting outcomes are interpreted & implemented	^ each student in teams or individual to implemented at least one meeting outcome	^ Identified resources as per meeting outcome	^ Completed outcome from meeting	

Evaluation:

ASSESSMENT OF RTC2801A- **Participate in workplace communication**

There are a number of assessment strategies that can be used to gather evidence of student competency for this unit. The competencies being assessed and the assessment requirement of the unit will determine the choice of strategies.

Observation;

- information can be recorded using checklists or log books

Oral tests or questioning:

- assess students ability to listen, interpret and communication ideas & information

Reports:

- investigate or report on an exercise; in the on-job or off-the-job training.

Simulation/role-play/case study:

- wide range of interpersonal skills assessed this way
- case studies enable students to display problem solving & decision making skills

Portfolio of Evidence:

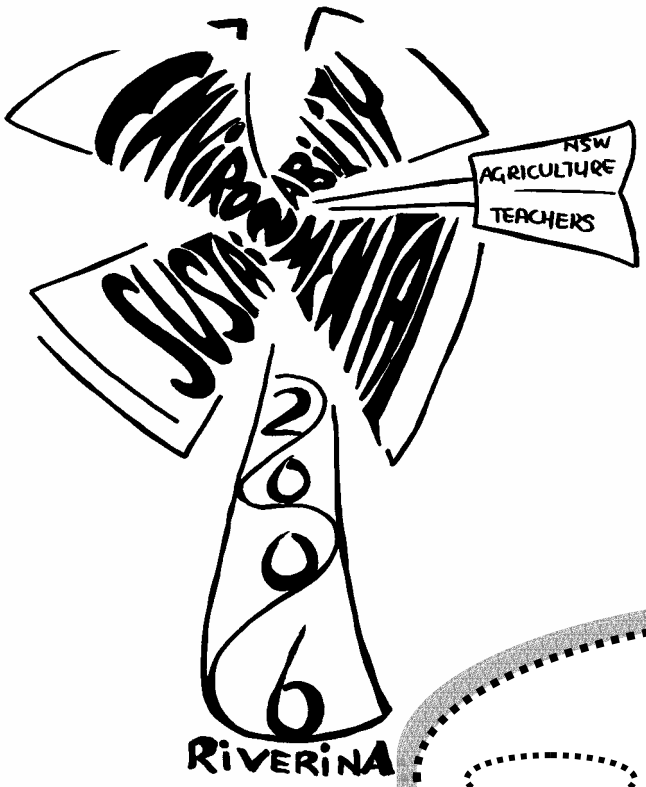
- documentary material to provide evidence of performance against set criteria
- can include direct/ indirect & supplementary sources.

Written test:

- focus on knowledge, comprehension or problem-solving skills

	ELEMENTS	
Strategies	**1**	**2**
Observation		
Written test		
Oral Questioning		
Report		
Simulation		
Portfolio		

- Board of Studies Assessment should be referred to for types of assessment tools used to assess these elements competencies in this CORE Unit. School based assessment policy for the year 11 Primary Industries should be accessed for referral.



2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

9

Professional Development

^ **Biosolutions**

Agricultural Biotechnology Festival
Charles Sturt University
2004

- **Board of Studies Syllabus Outcomes**
- **Dr John Harper**
  What is Agricultural Technology?
- **Dr Alexa Seal**
  Flower wars! Allelopathic plant versus weed
- **Dr Heather Cavanagh**
  The impact of biotechnologies on human health

^ **Weeds CRC**

- **Excellence in Education Resources**
- **Paterson's Curse Fact Sheet**
  - ***'neglecting a weed allows it to seed'***

^ In south west NSW scientific research has shown that recent dust storms contain 50% salt.

Biosolutions

Agricultural Biotechnology Festival 2004

CHARLES STURT UNIVERSITY

The following articles were presented at the recent Biosolutions Festival on Agricultural Biotechnology that took place at Wagga Wagga Civic Centre on 14th May 2004 as part of the Australian Innovation Festival. Students from a number of schools across the Riverina attended.

These articles have been reproduced with permission of Dr John Harper one of the key organizers of the Biosolutions Festival. The Association acknowledges John and Traceys efforts in the Biotechnology Festival for the permission granted to publish these articles.

A table has been included where the Ag. Biotech Festival talks may be incorporated into the syllabus. Summaries of each talk are provided to assist in the analysis of the topic.

Dr. JohnHarper (Charles Sturt University) & Ms Tracey Lonergan (Wagga Wagga City Council)
jharper@csu.edu.au (02) 6933 2837 or (02) 69 33 2812

Board of Studies NSW, Syllabus outcomes

The series of talks relate to the Stage 6 Agriculture Syllabus Outcomes

5.12c Students learn about technology and describe some of the problems of using biotechnology
5.12d Students learn about technology and describe ways in which technology has increased the variety of made resources.

Stage 6 Syllabus Outcomes
^ Biotechnology is an Optional subject.
^ The series of talks dealt specifically with one particular outcome.

9.6 Option-Biotechnology

2. Biotechnology has come to be recognised as the use of living organisms to make or modify a product, to improve plants or animals or to utilise microorganisms for specific use
5. Modern Biotechnology includes recombinant DNA technology
6. There are many applications and areas of research in biotechnology

NSW, Syllabus Outcomes					
Speakers	**Stage 5**		**Stage 6**		
	5.12c	**5.12d**	**9.6-2**	**9.6-5**	**9.6-6**
1. Dr John Harper		●	●	●	●
13. Dr Alexa Seal					●
6. Dr Heather Cavanagh	●	●	●	●	●

Dr John Harper, School of Agriculture CSU:

What is Agricultural Biotechnology?

What is Agricultural Biotechnology?

When the word **"Biotechnology"** is used these days I reckon most people think of GMO's, yet Biotechnology has been around for about 10,000 years and GMO's are only a small part of the 'story'. The simplest definition is "applied biology." (slide 3) It can be further defined as using living organisms to make a product or run a process. Think of cheese, wine or yoghurt production. These are sometimes called "Traditional Biotechnology". Others involve growing microbes in large vessels or fermentors to obtain useful products such as enzymes used in washing powder or antibiotics. Can you think of some more?

The third definition is using genetic tools to modify the genetic material of living cells to produce new substances or perform new functions. This is called recombinant DNA technology.

So put simply *Agricultural biotechnology* is the application of biotechnology to agriculture!

3.

- Biotechnology: Three definitions!

1. The simplest definition: "applied biology."
2. Further defined as using living organisms to make a product or run a process.
   - plant and animal breeding
   - fermentation and
   - enzyme purification
3. Using Genetic tools to modify the genetic material of living cells to produce new substances or perform new functions.
   - recombinant DNA technology

4.

Agricultural Biotechnology is……..

The application of Biotechnology to Agriculture!



12.



- Plant tissue culture refers to the cultivation *in vitro* of plant parts under aseptic conditions.

13.

Some applications and careers in Agricultural Biotechnology

- Plant & animal breeding
- Biocontrol, Biomining and Bioremediation
- Veterinary research and diagnostics
- Bioinformatics (gene sequence databases) Molecular biology, proteomics, (protein functions)
- Education & Extension
- Business management
- Risk assessment
- Microbiological research
- Fermentation of novel agricultural products
- Patenting, Legislation, Quarantine service

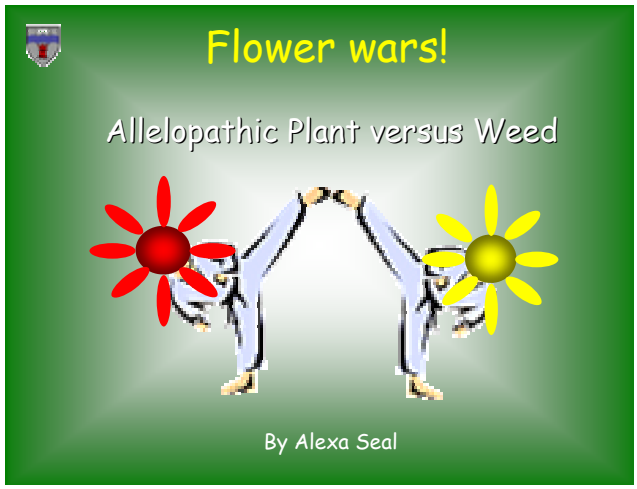
Dr Alexa Seal, School of Agriculture CSU:

Flower wars! Allelopathic plant versus weed

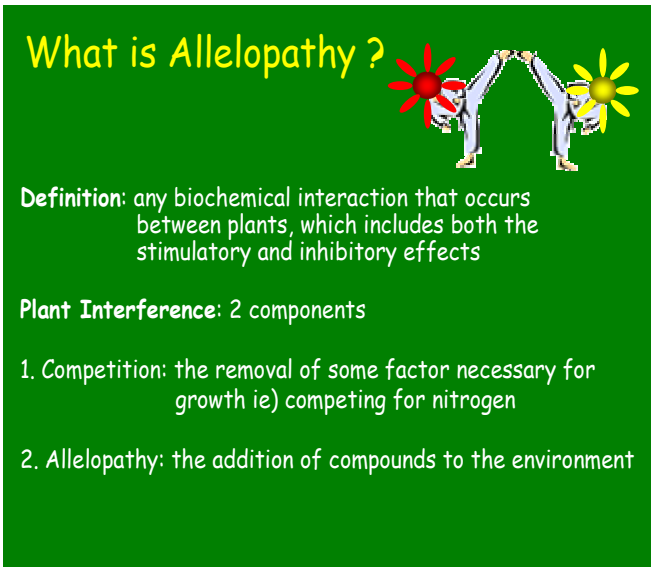
Allelopathy is any biochemical interaction that occurs between plants, which includes both the stimulatory and inhibitory effects. Plants can interfere with each other by:

1. **Competition**: the removal of some factor necessary for growth ie) competing for nitrogen
2. **Allelopathy:** the addition of compounds to the environment

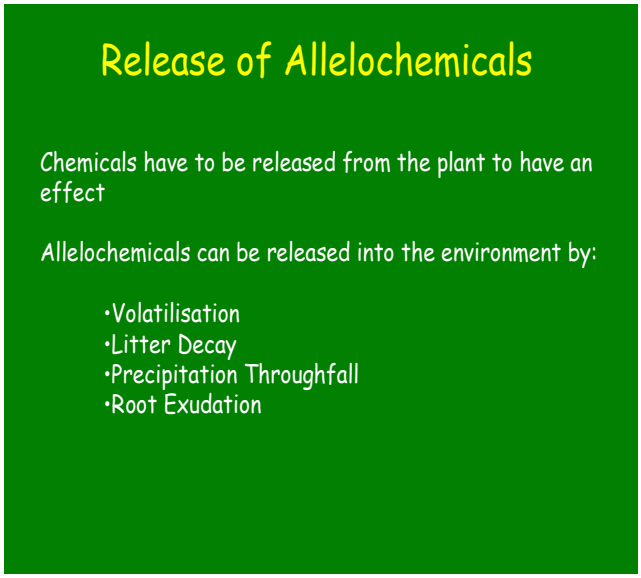
Alexa has studied particular rice species that may release chemicals naturally into the rice paddies that inhibit rice weeds. That's better than using herbicides!



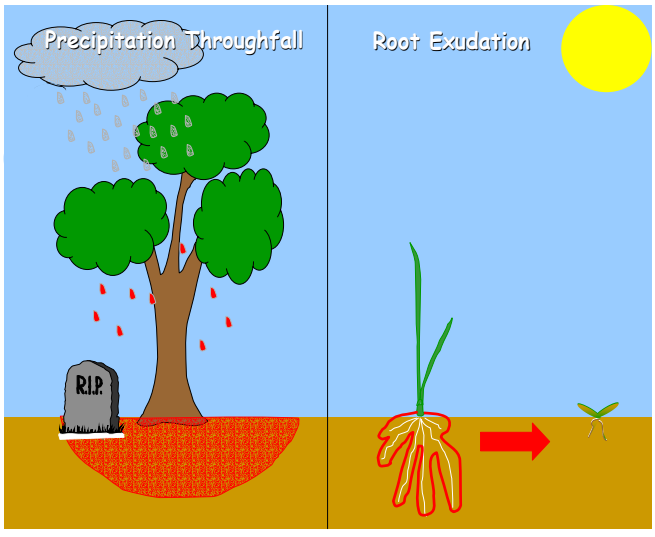
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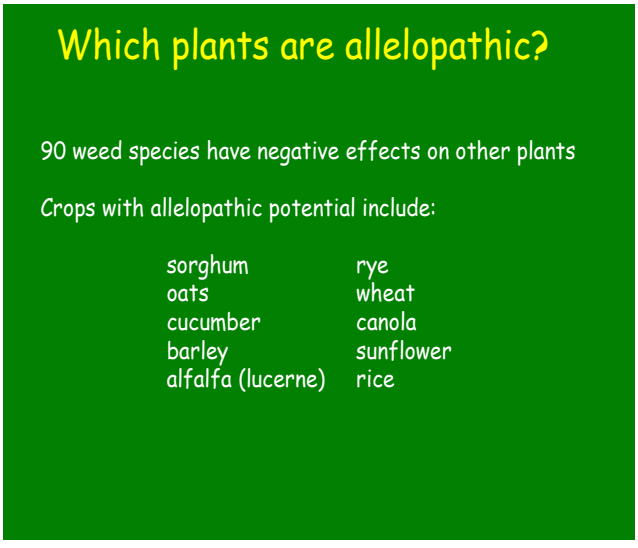
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3.



4.



5.

Why use allelopathy?

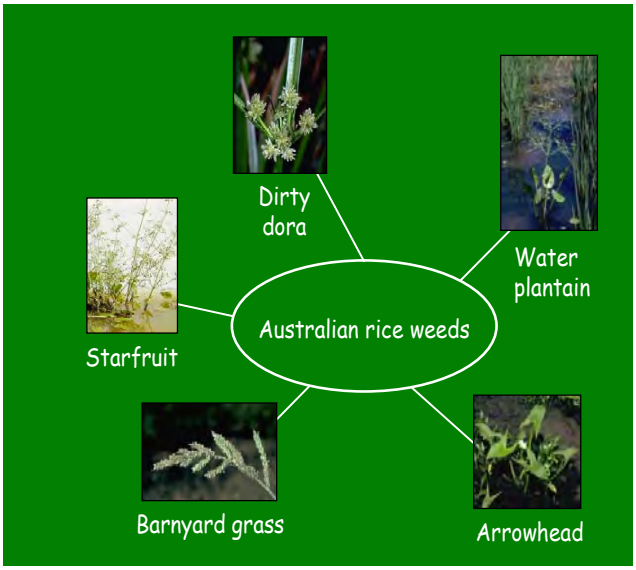


The Issue: Herbicide resistance

Only two herbicides are available to control all of the major broadleaf weeds infesting NSW **rice** crops

Using the same herbicides over and over increase the chance that the weeds will develop resistance and not be controlled by those herbicides

6.



7.

Why use allelopathy?



The Issue: Herbicide resistance

Only two herbicides are available to control all of the major broadleaf weeds infesting NSW **rice** crops

Using the same herbicides over and over increase the chance that the weeds will develop resistance and not be controlled by those herbicides

8.

How can allelopathy be used in agriculture?

1. Develop allelopathic crop varieties
   - breed rice varieties to grow well, taste good **and** be able to exert their own weed control
   - use these varieties in an IWMS

2. Develop of a natural herbicide
   - once you have determined what chemicals are responsible for the effect on the weeds you can produce a new herbicide from this info

9.

Testing for Allelopathy

1. Find out which varieties are able to control weeds



2. Find out what chemical(s) cause the weeds to stop growing



3. Figure out what genes are responsible for producing the important chemicals

9.

Summary

Plants can interact and influence each other even though they are stationary

Allelopathy: the ability of one plant to affect another plant by releasing chemicals into the environment

If the chemical(s) responsible for stopping weed growth are identified, and the genes producing these chemicals are determined, breeders can use this information to produce crop varieties that grow well, taste good and can create their own weed control!

"Chemical warfare between plants"



11.

Dr Heather Cavanagh, School of Biomedical Science CSU:

The impact of agricultural biotechnology on human health

Agricultural biotechnology is likely to have a major impact on human health in the near future. Examples of agriculturally related biotechnology research that will affect human health include:

Ani**mal 'Pharm':**
Many animals and plants can now be genetically engineered to be living pharmaceutical factories which can produce large amounts of human proteins, drugs or vaccines. This technique is now known as '**pharming**'. Genetically modified sheep have produced factor IX, a protein essential for blood clotting; natural anticoagulants to be used in heart surgery; and proteins to treat lung and liver disease.

Modern 'Pharming': Hello Dolly!
For decades the thought of human cloning had been the province of science fiction, then suddenly In February 1997 the birth of Dolly the sheep - the first truly cloned animal - was announced. This event probably triggered more public discussion than any other event since the discovery of nuclear fusion.
For several years Dolly remained a 'clone alone' but in recent years other groups have had success in cloning everything from mice to cattle, sheep, goats, pigs and even cats and dogs. Although this technology still has a long way to go it looks promising for the future, however, it is often clouded by 'improper' use and fears of human cloning.

Golden Rice
Vitamin A deficiency (VAD) afflicts millions of people in developing countries, especially children and pregnant women. Is estimated to cause blindness in 350,000 pre-school age children each year, and Is implicated in over one million deaths per year world-wide. Name comes from the 'golden' colour of the GM rice.

Eat the Wrapper – It's Good For You!
Packaging films are being made from soy and corn protein. These can be eaten by humans or re-cycled as animal feed and thus reduce the amount of plastic waste currently sent to landfills. Some of the wrappers are also being developed containing naturally occurring proteins that are good at killing dangerous bacteria such as *E. coli*, *Salmonella* and *Listeria*.

Banana Power!
Wouldn't you rather eat a banana than have a needle in your arm! Even if you don't like bananas there is still an easier way! Genetically engineered fruit that 'makes' proteins of viruses & bacteria & cause the body to make antibodies just the same as a 'normal' vaccine. Still a way to go; looks promising.

Plantibodies
Using antibodies as drugs is not new but manufacturing them in plants is - genetically engineered corn bred to secrete human antibodies.

Prescription Plants – Coming to a Pharmacy Near You!
Once all doctors prescribed plants as medicine and they may be returning to those roots with some help from biotechnology. This is called bio-prospecting. Natural products in plants have the ability to inhibit the growth of cancer cells, cure infection, reduce blood pressure, reduce cholesterol levels etc Complex interaction between many plant components - not 'single' chemicals. New technology is bringing a greater understanding of these compounds and their potential to treat & prevent human disease.

General biotechnology information
Biotechnology Australia: great (free!) resources, notes, video films etc for HSC or just general interest (www.biotechnology.gov.au) Contact: Dr Heather Cavanagh, Course Coordinator Bachelor of Medical & Applied Biotechnology, School of Biomedical Sciences (hcavanagh@csu.edu.au)

2.

Biotechnology & Human Health

Examples of agriculturally related biotechnology research that will affect human health include:

- **Animals**
  - Animal 'pharm'
  - Hello Dolly!
- **Plants**
  - Golden Rice
  - Eat the wrapper – it's good for you!
  - Banana Power!
  - 'Plantibodies'
  - Prescription plants coming to a pharmacy near you!

6.

Golden Rice



- A genetically engineered rice which produces beta-carotene, a substance which the body can convert to Vitamin A.
- Vitamin A deficiency (VAD)
  - Afflicts millions of people in developing countries, especially children and pregnant women.
  - Is estimated to cause blindness in 350,000 pre-school age children each year,
  - Is implicated in over one million deaths per year world-wide.
- Name comes from the 'golden' colour of the GM rice.

7.

Eat the Wrapper – It's Good For You!

- Packaging films are being made from soy and corn protein
  - Can be eaten by humans or re-cycled as animal feed
  - Reduce the amount of plastic waste currently sent to landfills.
- Some of the wrappers are also being developed containing naturally occurring proteins that are good at killing dangerous bacteria such as *E. coli*, *Salmonella* and *Listeria*.
  - Lysozyme and nisin.
  - Prevent bacterial contamination of the food
  - Food stays fresh longer
  - Disease prevention.

8.

Banana Power!



- Wouldn't you rather eat a banana than have a needle in your arm!
- Even if you don't like bananas there is still an easier way!
- Genetically engineered fruit that 'makes' proteins of viruses and bacteria
- Causes the body to make antibodies just the same as a 'normal' vaccine
- Still a way to go but looks promising.

9.

Plantibodies

- Using antibodies as drugs is not new but manufacturing them in plants is.
- 'Traditional' antibody therapy has not been very successful
- This is where plantibodies come in!
  - Cornfields with ears of gold!
  - genetically engineered corn bred to secrete human antibodies.
  - Still in development



10.

Prescription Plants – Coming to a Pharmacy Near You!



- Once all doctors prescribed plants as medicine.
  - they may be returning to those roots with some help from biotechnology.
- Bio-prospecting
- Natural products in plants have the ability to inhibit the growth of cancer cells, cure infection, reduce blood pressure, reduce cholesterol levels etc etc etc.
  - Complex interaction between many plant components
  - Not 'single' chemicals
  - New technology is bringing a greater understanding of these compounds and their potential to treat and prevent human disease.

Weeds CRC

- dedicated to providing excellence in education resources

What is the CRC?

 # The Cooperative Research Centre for Australian Weed Management (Weeds CRC) is a federally funded, national research and extension body.

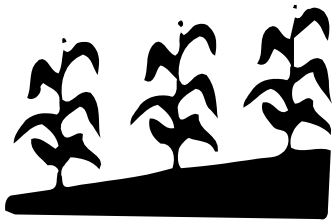
Weeds CRC:

 # The Weeds CRC has five key programs. One of the programs is dedicated to producing education resources for:

i) Primary and secondary schools,
ii) Vocational Education and Training (VET) sector &
iii) University based tertiary projects.

 # Information for these education resources is provided from the Weeds CRC's research programs.

Research Program:



The research programs focus on three key areas

i) Weed incursion and risk management,
ii) Sustainable cropping systems &
iii) Landscape management.

 # The last program in the Weeds CRC is the:

iv) Community Empowerment Program aims to increase awareness & understanding of weed issues and the adoption of research findings.

The Education Program:

 # Aims to 'add value to current weed training programs and develop new initiatives that will increase awareness of weed issues and provide skills in weed management at all levels from the wider community to specialist weed managers.

 # The VET task in the Education Program is able to help provide weed management resources for nationally accredited weed management training eg weed management units found in training packages such as the Conservation and Land Management (CLM) Training Package.

CRC Education Officers:

 # Two Weeds CRC Education Officers, Annabel Bowcher and Di Holding, are located at NSW Department of Primary Industries Wagga Wagga Agricultural Institute.

 # Members of the VET sector are encouraged to contact Annabel and Di if they require assistance in locating or developing weed management resources.

 # An evaluation of current Weeds CRC VET resources is currently being undertaken. This has involved surveying those RTOs that conduct training in weed management and asking for comment on current and future Weeds CRC resource materials.

 # RTOs who wish to complete a questionnaire are asked to email Annabel Bowcher (annabel.bowcher@agric.nsw.gov.au).

CRC Education Resources:

 # Often material produced by other projects in the CRC is very relevant to the VET sector.

CRC Education Resources:

 # For example the *Introductory Weed Management Manual* produced as part of the Environment Australia contract has been mapped to competencies within the CLM training program. Already training providers across Australia are using this resource.
 # Links with the research program have been further strengthened with both Annabel and Di working closely with the recently appointed:

- **Weeds CRC Communication Officers**
  - **Therese McGillion: (Program 2: Sustainable Cropping) &**
  - **Ann Grattidge: (Program 3: Landscape management).**

 # All publications produced by the Weeds CRC for the VET sector are mapped to units of competency where possible.
 # Most resources can be downloaded from the Weeds CRC's website (www.weeds.crc.org.au) and include:

Factsheets:

^ Case studies and information on topics ranging from chemical, biological and cultural weed control, integrated weed management, on-farm solutions, weed prioritisation and eradication, community involvement, herbicide resistance and herbicide tolerant crops.

Resource packages:

^ Australian weed management: a resource package for learning about biological control; Introductory Weed Management Manual (available free on CD-ROM with PowerPoint slides, teaching notes, student workbook, resource list)

Technical Series:

^ Weed management in winter pulses: integrated solutions

Talks and PowerPoint presentations:

^ Understanding herbicide resistance

The Training Resource: "*Australian Weed Management*":

 # *A resource package for learning about biological control of weeds* has been given the 'thumbs up' by the RTOs that have piloted it. This training package, the first comprehensive training resource package produced by the Weeds CRC, specifically addresses competencies under the CLM training package. CB Alexander Agricultural College, Tocal has utilised this resource, conducting workshops across NSW.
 # To date 64 weed officers have attended these workshops. The resource was also used by South Australian TAFE to train a further 50 weed officers in this state. Feedback from workshop participants has been very favourable. Further packages will be developed on request.

Factsheets

 # Are being added to the website on a regular basis and are relevant to a range of weed managers including students studying in the VET sector and various community groups. They are designed to complement any relevant weed training programs and in many situations are case studies of actual weed management projects. All factsheets can be downloaded free as a PDF from the publication section of the Weeds CRC website.

Weeds CRC

Recent Factsheets: **on the website include:**

- **On farm solutions: managing grasses in pulses**
- **On farm solutions: managing resistant ryegrass with high density legumes**
- **On farm solutions: managing resistant ryegrass by collecting chaff at harvest**
- **On farm solutions: wick wiping musk weed in lentils**
- **On farm solutions: managing annual grasses in field peas**
- **On farm solutions: managing resistant ryegrass – a whole farm approach**
- **On farm solutions: managing resistant ryegrass by baling crop residue at harvest**
- **Integrated weed management: mimosa**
- **A community approach: green cestrum**
- **Weed risk minimisation: European Olive**
- **Weed eradication program: bitterweed and seroty weed**
- **Weed eradication program: branched broom rape**

^ The latest factsheet highlights research conducted by the Weeds CRC with respect to managing Paterson's curse using strategic cutting in spring. A summary of the factsheet (which includes recent research and an on-farm case study) is found below.

A Single Cut to Control the Curse

- **Paterson's curse is a widespread weed and was responsible for a number of horse deaths in 2003.**
- **It is a major problem on small acreage blocks where control options with herbicides may be limited by closeness to residential areas and access to contractors.**
- **Research conducted by Dr Annabel Bowcher, CRC for Australian Weed Management and DPI Wagga Wagga, has found that one simple cut with a slasher or even a whipper-snipper can dramatically reduce the Pato problem in the following year.**
- **Timing is the key to a successful cut. It is important to leave the Pato to run up to head and start flowering. This is the hardest part of this management technique – watching a weed grow and flower!**
- **Once the Pato starts to flower you must check weekly for green seed formation. When three quarters of all plants in the target area have green seeds it's time to get the slasher out and start mowing.**
- **A simple guide to help you identify the correct cutting time is found in the recently published factsheet.**

^ If you would like to know more about weed management and educational resources, please contact the Weeds CRC's Education Officers (VET sector), Annabel Bowcher ph 02 69 381 941 or Di Holding ph 02 69 381 671.



Caption for image 1:
The paddock on the left has been strategically cut in spring to control Paterson's curse.
(photo: Deirdre Lemerle).

Caption for image 2:
The latest addition to the Weeds CRC Factsheet series addresses control of Paterson's curse using strategic spring cutting. It is available from the website www.weeds.crc.com.au/publications/factsheets

factsheet

Cultural weed management:

Paterson's curse



Paterson's curse

Background

Paterson's curse can produce 10 000 seeds per plant if left uncontrolled. Traditionally weeds in pastures have been controlled by grazing, herbicides or a combination of the two. More recently, spring cutting of pastures has not only been used to conserve forage and fill feed gaps but also as a weed control tool. However, it is important to realise if cutting for forage, greatest impact on a target weed may not coincide with the timing for high quality forage.

The successful use of cutting for pasture weed management relies on good timing and controlling subsequent weed regrowth and weed seed production.



Weed management using strategically timed cutting will be particularly useful when other weed management options such as herbicides are limited.
Photo: Deirdre Lemerle

Results from a pasture experiment in Wagga Wagga, NSW are discussed here. They demonstrate that by strategically timing a spring cut, it is possible to substantially reduce Paterson's curse in pastures.

Project: Using strategic cutting as a technique to manage Paterson's curse in pastures and vacant land (eg roadsides and tree lines).

Participants: Weeds CRC, and Greg and Kirrily Condon.

Location: Wagga Wagga Agricultural Institute, Wagga Wagga, and Junee, NSW.

Av. annual rainfall: 550 mm

VET sector resource: RDTS402A *Develop a strategy for the management of target pests.*

Experimental site

Pasture plots were established in a degraded phalaris, cocksfoot and subterranean clover pasture. The major weeds were Paterson's curse, annual ryegrass and vulpia (silver grass). The pasture plots were cut on one of four dates during October and November, or continuously grazed by sheep (10 DSE). At the start of August, sheep were excluded from all plots to be cut. These pasture plots were cut once during spring (over two successive years) using a forage harvester (cutting height 7 cm). Sheep were excluded from these plots until mid-summer.

Effect of spring cutting on Paterson's curse

Plant density

The composition of the pasture plots changed dramatically after two years of spring cutting. Paterson's curse content was increased by 75% when the pasture was cut at a time similar to the district silage cut. This was because plants regrew and set seed and regrowth was left unchecked. Use of additional techniques such as herbicide application and/or grazing would be required to control this weed.

However, by cutting four weeks later, similar to a district hay cut, or by continuously grazing with sheep, the Paterson's curse content was reduced by 90%.

Seed production

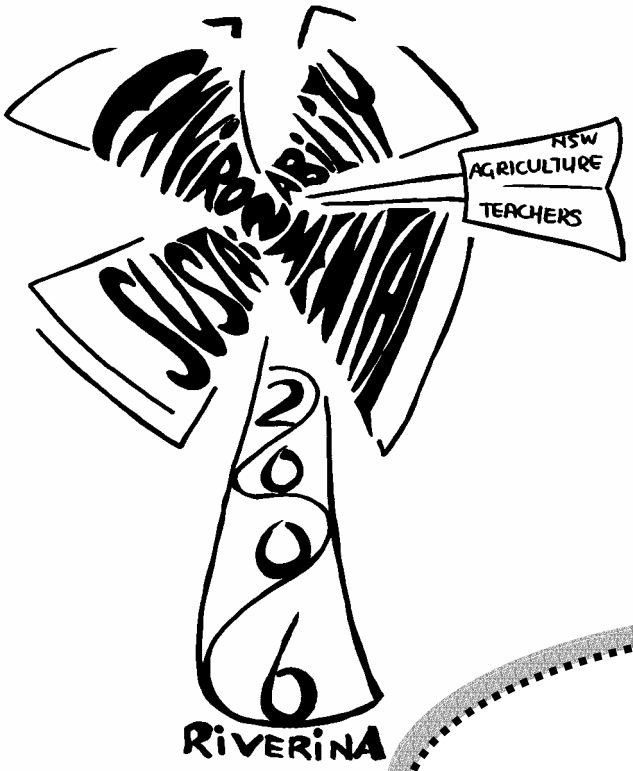
Almost 1000 Paterson's curse seeds per m^2 were produced when the pasture was cut early (silage cut) and seed production from regrowth was not controlled. Incredibly, less than 10 seeds per m^2 were produced when the pasture was cut four weeks later. This was because the weed had not produced viable seed prior to cutting and no weed regrowth or seed production occurred after cutting.

Autumn seedlings

Limiting weed seed production will have a considerable impact on seedling emergence the following autumn. Cutting a pasture too early or too late in spring resulted in hundreds of Paterson's curse seedlings per m^2 emerging. In contrast, less than 10 seedlings per m^2 emerged in the correctly timed treatment (see page 2).

Weed management

Cooperative Research Centre for Australian Weed Management ▸ Fact Sheet



2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

10

AGRICULTURE & P.I. in the RIVERINA

^ In the 1900s, graziers from South Africa came to Australia for a drought proof plant & took the Old Man Saltbush back with them.
^ This plant is ideal for salinity control & with a 27sq metre root system is used for erosion control
^ Old Man Saltbush has a life span of 75 to 100 years.

^ **Youth Cattle Camp:**

Yanco Agricultural High School
September 2004

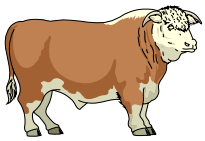
^ **Wagga Wagga & District Ag. Expo:**

Nth Wagga Wagga TAFE
August 2004

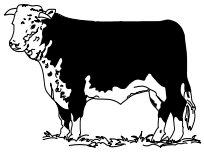
^ **ChemCert: re accreditation course**

^ **First Aid Course for P. I.**

^ **P.I. in the Riverina**



Youth Cattle Camp
Yanco Agricultural High School
28/29/30 September 2004



^ TAFE NSW: Riverina institute in conjunction with AG Connections organised a cattle camp for 38 students from across the Southern districts of NSW which was held at Yanco Agricultural High School. Participants attending were from year 7 through to year 12.

^ Students, parents and teachers attended the camp from Tumut, Adelong, Batlow, Leeton, Condobolin, Tullamore, Binya, Parkes, Wagga Wagga, Yanco, Canberra (Sutton, Lyneham), Cootamundra, Albury & Narrandera.

^ A comprehensive program with the students covering various beef cattle topics such as:

- **Animal behaviour, handling & breaking in**
- **Nutrition: pasture, hay & grain feeding**
- **Animal Health, drenching, tattoo & freeze branding**
- **Show preparation of cattle: washing, grooming, & blow drying**
- **Cattle leading & show ring skills**
- **Clipping beef cattle**
- **Presenting animals for judging**
- **Junior cattle judging**
- **Parading competition**
- **Feeding & watering your animals**



Kerrie form AG Connections

^ Kerrie Sutherland from Albury & Margaret Bowden from Adelong representing AG Connections were the principal organisers for the cattle camp.

^ AG Connections organised a number of very high profile people from the cattle industry to assist in conducting the 3 day course.

^ Mr Michael O'Sullivan from Culcairn who owns a Poll Hereford & Limousin Stud shows his cattle at many Royal shows. The 20 cattle, ranging from 14 to 22 months, including Murray Grey cattle were used by the students at the camp had come straight from the Melbourne Show.

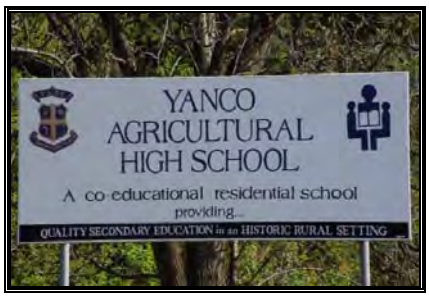
^ Mr Ben Simpson from Henty & from Outcross Genetics Australia is an international marketer & presenter of beef cattle. He has used his AG Connections web site, to display professional photos of the 3 day camp. Visit: www.outcrossgenetics.com.au

^ Mr Jock Hamilton a cattle nutritionist will present the nutrition segment to the students at Yanco.

^ Very experienced cattle judges for the cattle camp were Mr Richard Green from Culcairn who owns a Poll Hereford Stud & his daughter Mrs Jane Rowe from Walla Walla. Both Richard & Jane have had many years of judging cattle at Royal shows throughout the country.

^ Thanks are extended to Yanco Ag High for providing the venue & a number of cattle for the camp.

^ The students were placed into teams of ten & competed as a team at various events throughout the 3 days. Some of the competitions involved junior cattle judging competition in which students judged 4 animals bringing together all the aspects of cattle structure, maturity & breed type.



^ A highlight of the camp was a visit the Rockdale Cattle feedlot at Yanco, which culminated in the students experiencing all the aspects of cattle breeding, nutrition & marketing of cattle.

^ The inaugural beef cattle camp which was voted by students, parents & organisers as a very successful camp, with plans under way for a similar camp in 2005.

Youth Cattle Camp



Michael O'Sullivan discussing finer points.



The cattle camp participants



Early starts catching up!



Cattle talk!



Edward has control



Belinda, Ilka, Christine, Andrea & Gerard working hard!! (talking….)



Richard Green: with 3rd place Parader Champion Cameron from Tumut.

WAGGA WAGGA
RURAL AGRICULTURAL EXPO
- YEAR 10 -

In our local area all of the VET framework courses are supported by Wagga Wagga Compact which is our VET Workplace Co-ordinator.

Since the introduction of the new HSC Compact, a VET Expo for Year 10 students has been organized for local school students in early Term 3 each year, to assist them learning all about all VET courses offered at School and TAFE.



A local Primary Industries interest group decided 5 years ago to put on our own Expo around the same time in order to give more promotion to Primary Industries and Agriculture. We were offered the use of the Primary Industries Centre at Nth Wagga TAFE.

We decided on a students 'hands-on' approach rather than information supplied by displays and guest speakers. She aim is giving the students a positive experience by them participating and enjoying the day.

Brian, Scott & Al cooking up a storm!

The format of the day is to split each school that attended into about 7 groups and give each group a particular industry activity around the centre and farm for about 40 minutes.

Each activity is managed by a TAFE teacher or Ag Teacher in attendance and they rotate around a set sequence during the day. We usually have approximately 70-80 students from about 8 local schools.



Fencers for the future…



The Industry Activities we have used are:-

* Fencing
* Paving
* Wool Classing
* Cattle
* Pastures
* Sheep
& Motor Bikes

Students are supplied with morning tea/ lunch and there is a presentation of prizes for students who apply themselves during the day.

Students seem to really enjoy the day while teachers are given an opportunity to network and keep in touch.

If you want to run a Careers Expo in your area contact your VET consultant or fax the VET in Schools Directorate on 02 92445020.







ChemCert:re accreditation in the Riverina

- 17 participants were involved in a chemical re accreditation course held in Wagga Wagga recently.
- People attended from Murrumbarah, Lockhart, Barham, Cootamundra, Yanco, Tumut, Temora, Billabong, Culcairn, Corowa, Queenbeyan, & Wagga Wagga.
- This course was conducted by Reg Kidd: ChemCert & Peter Stoneman: Dept. Environment & Conservation (DEC).
- On successful completion of assessment tasks provided by ChemCert these people will be able to deliver the ChemCert chemical course at AQF 3 to industry standards & provide a certified course for participants to increase their employment opportunities in the industry.
- Thanks to:
  - Naomi from Culcairn for bringing the Chemical Trailer to the day. This trailer was set up by the Albury district to assist in delivery of chemical courses.
  - Julie McAlpine from ChemCert for organizing the day.
  - Al & Dave from Wagga Wagga High for the great venue.
- Chemical course in schools is an important issue that needs to be addressed adequately by DET for our students.
- In this edition of BAAT you will find a letter to DET & their response to the issue of chemical courses.





Primary Industries First Aid Course

^ On Tuesday the 21st September a group of about 18 Primary Industries teachers from around the Riverina had a St Johns First Aid course at the Wagga RSL club.

^ Darryl Horn from the Wagga RAAF base did a good job and participants appreciated up-dating their current first aid knowledge, particularly on resuscitation.

Great technique Dave



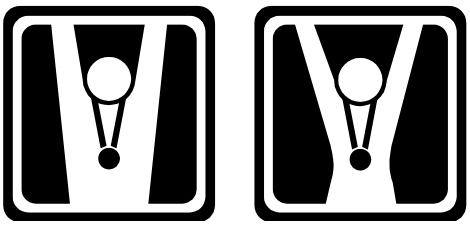
Bruce needing help?
4 people to assist…



^ Apparently we are now qualified to deliver basic first aid to Certificate 1 level which stays current for 3 years.

^ This is adequate to teach the first aid competency in the new Primary Industries Syllabus.

^ One surprising fact Darryl enlightened us on was that if you cannot reach the emergency number 000 because your mobile is out of range, you can use another number **112** through a satellite connection to the same network. This works even if the mobile you are using is locked.





We are all used to this……..

PRIMARY INDUSTRIES IN THE RIVERINA







Farm Forestry fencing in the South West Slopes



I don't need assistance!



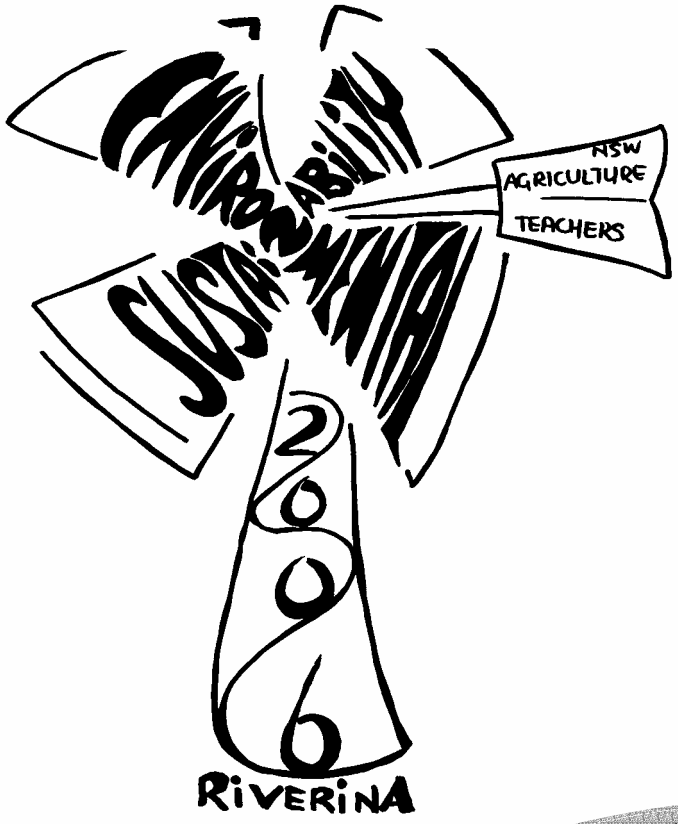
Reversing skills, I need practice!



Basic Fire Fighting Course



School Tree Day in July



2006 Conference

10th – 14th October 2006

Charles Sturt University

Wagga Wagga

Membership

^ Why become a member?

- *Maintain networking throughout the state*
- *Member of your professional teaching association*
- *Current information on:*
  - *Next Agriculture Conference*
  - *Syllabus updates/ programs/resources*
  - *Issues that effect your Agriculture teaching*
  - *Professional reading*
  - *Organisations that can assist in delivery of Agriculture to your students*
  - *Have a say about Agriculture & P.I teaching issues*

^ Australian's one million windmills will need to be replaced in 25 years.
^ This is partly due to their aging infrastructure.

APPLICATION FOR MEMBERSHIP

To:
THE N.S.W. ASSOCIATION OF AGRICULTURE TEACHERS

TITLE: _____ NAME: _____

SCHOOL: _____

PHONE: _____ FAX: _____

EMAIL: _____

POSTAL ADDRESS: _____

_____

Post Code: _____

MEMBERSHIP FEES:

* 1 YEAR: _____ $60 (2005)

* 2 YEARS: _____ $120 (2005-06)

N.B. Subscription applies for period from January 2005 for either one or two year period.

Subscription Required: _____ Year(s)
Amount Enclosed: $ _____

Please forward completed form with payment to:

Stephen Trickett
Billabong High School
Gordon Street
Culcairn NSW 2660

Phone: **02 60298377**
Fax: **02 60298833**