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NSW Association of Agriculture Teachers Inc.

BAAT

Bulletin of the NSW Association of Agriculture Teachers

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NSW Agriculture

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Inside BAAT

Who is NSWAAT

President
Patrick McCann
St Josephs College
HUNTERS HILL 2110
02 9816 1044 (W)
02 9879 6804(F)
02 9817 1212 (H)
pamccann@bigpond.com.au

Secretary
Leonie Mutch
St Ignatius College
LANE COVE 2066
02 9882 8222 (P)
02 9882 8588 (F)
lmutch@riverview.nsw.edu.au

Treasurer
Karen Heap
Muirfield High School
NORTH ROCKS 2151
02 9872 2244 (P)
02 9871 4106 (F)
kaz@cia.com.au

Technology/Communication
Rowland Clark
Canberra Grammar
RED HILL 2603
02 62951833 (P)
02 62952923 (F)
rowland.clark@cgs.act.edu.au

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Editors

Brigitte Hermann
Plumpton High School
PLUMPTON 2761
02 96257020 (P)
02 98381852 (F)
brigitte@zipworld.com.au

Milton Gower
Macarthur Anglican College.
COBBITTY 2570
02 4647 5333 (P)
02 46475444 (F)

John Killeen
Girraween High School
GIRRAWEEN 2145
02 96367293 (P)
02 98963274 (F)
j_killeen@optusnet.com.au

Editorial

Welcome to the first edition of BAAT for 2001. Working on something like this gives one a whole new perspective on the amount of effort involved in compiling each edition. Thanks to the many people who offered (were cajoled) into contributing. There is a wealth of knowledge and expertise out there- we need to tap into it!!

Contact details for the new executive have been supplied on the first page. These people wish to hear from you! Feel free to pester them with any issues, ideas or concerns you may have. Often, it is the unenviable lot of Ag teachers to be the only one in the school teaching the subject. It is easy to feel isolated at times, particularly if there are no other Ag teachers in the district.

One emerging aim of the association is to foster the development of stronger links and networks between Ag teachers throughout NSW. Quite a few important issues were raised at this year's AGM: Chemical Users Training and use of tractors in schools are two that spring to mind. As well as being a source of information, BAAT could be used to assist communication and provide a source of feedback for members.

The, as yet unresolved, issue of class sizes has been raised again by Peter Osterloh (p. 61). It would be interesting to hear and publish other members' views on this and other issues.

Tractor safety has been revisited (see Spring 1998 BAAT, Edn 11 for more on this topic), in response to impending Departmental concern about the use of tractors in schools. Safety lessons and strategies for introducing students to farm machinery safely, have been included in this issue (p. 29).

Some excellent teaching resources have been included, as well as free seeds from the Cotton Store. Updates and reports from extra curricular activities such as shows and the Junior Ag Camp and Ag Competition, also feature prominently. As Ag teachers, we have the opportunity, (though at times, it may seem like a burden), to provide our students with so much more than just the material delivered in the classroom. These opportunities are largely dependent on enthusiasm and the willingness to donate our time. Committees organising these events are always in need of extra bodies.....participation can be very rewarding.

Thanks again, to our sponsors, who assist in making this publication possible: UWS-Hawkesbury and NSW Agriculture, who have both been strong supporters of the Association for many years; and McGraw-Hill and Tobruk Stud. McGraw-Hill are offering a 10% discount for financial members of the AAT. Further details can be obtained from Miriam Marckx, Fax: 9417 2248, PH: 9415 9845. Tobruk are offering discounted rates on excursions booked by members.

Please share any words of wisdom, useful resources or interesting events with us. It would be great to "visit" schools all over the state!

Until the next edition.....Ed.

Publication Dates for 2001:

Edn 18	T3 W3
Edn 19	T3 W10
Edn 20	T4 W5

Stuff to send:

- School or Show Reports
- Teaching Resources
- AAT Branch Updates
- Committee Reports
- Inservice/ practical Ag info
- Letters
- Classifieds (ie Buy/Swap/Sell, etc)
- Student Successes
- Upcoming Events
- Interesting Bits.....etc. etc.

e-mailed material in MS Word (pc) format, works best.
Pictures/photos in .jpg or .gif, if possible.

Contact or send material to the editor of your choice

OUTGOING PRESIDENT'S REPORT

AGM OF NSW Association of Agriculture Teachers

TUESDAY 16TH JANUARY 2001

The last 2 years of my role as President of the NSW Association of Agriculture teachers has been both challenging and rewarding. I have seen it as a great honour and privilege to have the chance to be the person who has represented all Agriculture teachers in many areas over my term as president. We are a unique breed of teacher. Quite often we teach in schools with little support in regards to people who know about our subject. We also put in many additional hours that are not recognised, that is what Ag teachers do.

The association has been quite active in the last two years. The committee has represented the association at the Professional Teachers Council, the Board of Studies, Curriculum Corporation, Department of Education, Catholic and Independent Groups. Our members of course have been involved in many other areas including HSC programming days, the state agricultural advisory committee, Board of Studies curriculum committee and Animal welfare just to name a few. It is through the involvement of so many teachers that we are able to improve our teaching environment.

Over the past 6 months a number of teachers have been involved in a Curriculum Corporation Project aimed at developing a Training Package Resources for VET in School Primary Industries Project. This project is developing a central register of contacts and resources to help in the implementation of the Primary Industries course. This resource I feel will become an invaluable resource for all Primary Industries teachers when it is finished early in 2001.

At the Sydney Royal Easter Show in the year 2000, the Association was part of the Agricultural Learning Centre, which was located in the Dome next to the district exhibits. This was due in most to the tireless work of Susan Lees from the RAS. The display allowed a number of schools to promote Agriculture at their schools and be a source of information for a range of Agricultural Industries such as Cotton Australia, Olive Growers and Landcare.

The Association has also been involved in the review of teacher education in NSW commonly known as the Ramsey report. This report has attempted to outline the ways in which the quality of teachers and teaching can be improved. Many factors were identified to improve the quality of teaching within our schools. One factor identified was that professional associations provide a real and ongoing role in the professional development of teachers. This report is proof of how important associations such as ours are and we need to ensure continued support for our members in the professional development area.

Whilst I could probably sit here and name many Ag teachers that contribute so much to these groups I would forget someone as so many teachers give up their spare time to take on an extra-curricula activities that not only supports their own teaching but all ag teachers. Once again, my warmest thanks to all these members. Of course the association tries to recognise these important people through our JA Sutherland Award that will be presented at this evening's dinner.

The introduction of the new HSC in both Agriculture and Primary Industries has meant a lot of work for most agriculture teachers. Many teachers need to be recognized for their commitment to the implementation of the new syllabi particularly when they have been involved in the running of local inservices. The association has supported district implementation of inservices for local areas by obtaining funding and thanks to the Training and Development Directorate we were able to offer money

to support inservices around the state. The state in-service in 1999 was well supported by members from around the state and this enabled us to provide additional programming support for the preliminary course to all NSWAAT members through BAAT. Many thanks to Central West, Sydney, Northern NSW, Southern Highlands Committees who implemented HSC programming and assessment events in the year 2000.

BAAT once again has been the centre of the communication for the Association. It should not be underestimated that BAAT is only as good as the people who support it. It is becoming more difficult to provide a document that is keeping people up to date when very few people contribute articles. While the committee can provide the updates from the various committees we are on it is difficult to provide the worksheets and innovative ideas that so many teachers rely on with out the support of our members. Karen has found it very difficult to keep BAAT running as very few teachers have supported the provision of articles. Perhaps this can be a new years resolution with each teacher promising to provide at least one article to the new BAAT editor over the next two years.

Our other committee members Peter Napier and Angela McCann have also supported the operations of the NSWAAT. The implementation of the GST and its meaning to the association involved many a meeting for Angela and whilst she is not an expert by any means she was able to make appropriate decisions in regards to our needs. Peter has supported the association by maintaining communications with groups and organisations to help support the work of the association.

NSWAAT needs industry support not only in a monitory sense but also in kind. Many groups have helped support us including Case, Cotton Australia, NSW Agriculture and McGraw Hill.

One continued supporter is the University of Western Sydney, Hawkesbury. Not only do they become the butt of all jokes from all non Hawkesbury members they also provide support for all activities that the association is wanting to run, such as our conference and the annual ag camp. One mainstay behind this support is Ken Langford an ex-ag teacher who understands what we are trying to do as an association as well as the support needed by teachers within the classroom. For all his support we would like to acknowledge and thank Ken.

Sydney Branch continues to provide great support for their members. They continue yearly with their Agcamps that allows so many of our city cousins to experience large animals and farming activities that are unavailable in most city schools. Their continued support for Ag Competition allowed it to resurface in 2000 and hopefully we will see them continue. The Ag Competition is always a great resource for junior exams where very few resources exist. And of course not to forget the running of this conference, thanks must go to all who were involved in particular Peter Jones, Phil Hurst, Sheree Bourke, Karen Heap, Vicki Willmington, Brigitte Hermann and Ken Langford.

One of the last people I should thank is Angela. Not only has she supported the Association as our treasurer she has also provided a sounding board for my ideas and helped to develop these ideas so that we could provide our members with as much support as possible. She showed her commitment to the association when she was 8 ½ months pregnant and organising the state inservice in 1999 and following up with the supervision of ensuring disks of the programs were sent to all members whilst at home with a new born baby.

Lastly I would like to wish the new incoming committee all the best luck. It is a tough job when trying to juggle all the activities of school life as well as the association related activities but it is very rewarding and fulfilling time when you know your decisions are in the best interest of all members in NSW.

Patrick McCann

TREASURER'S REPORT

NSW Agriculture Teachers Association ABN – 81 639 285 642

INCOME AND EXPENDITURE STATEMENT
Period 21/1/1999 to 16/1/2001

Balance at bank as at 1/1/1999 $8536.51

INCOME	**1999-2000**
Memberships	15,495.00
Interest	14.90
Inservices/sponsorship	8950.00
TOTAL INCOME	**$24,459.90**
EXPENDITURE	
Stationary	618.62
Bank Charges	106.10
PTC/NAAE	4484.24
Postage	2867.43
Internet	225.00
BAAT	10139.40
Insurance	702.44
Bathurst High School luncheon	272.00
Inservice	3174.62
Sponsorship	500.00
Awards and Trophies	326.65
Conference Dinner for Don Bartholomew	235.00
Miscellaneous eg. Refunds for inservice	596.21
Total expenditure	**$24,247.71**
Operating surplus	**+ $212.19**
Balance at bank 31/12/2000	9243.73
Plus uncleared cheques	685.00
Minus unpresented cheques	1190.65
Cash available	**$8738.08**

Cash available should be $8748.70 therefore unreconciled amount of -$10.62

Patrick McCann
President

Angela McCann
Treasurer

The Value of the National Association of Agricultural Educators to the State Associations of Agriculture.

Dear Colleagues

There are many reasons why we need to continue to support the National Association Of Agricultural Educators.

The 3 main points that I feel are important are :

The Association has been important for developing links between teachers of each state to enable them to share resources for both teaching and for professional development.

Firstly:

Examples of these include Occupational Health and Safety documents, National Statements and Profile materials and Vocational Education and Training manuals.

Secondly:

The association provides a NATIONAL FORUM, where issues of the day, concerns or problems can be discussed and reviewed.

This forum does occur at National Conferences but will be more accessible to all teachers with the development of the WEB Site.

Thirdly:

For continued support in the area of LOBBYING with both Federal and State Government bodies.

The association has been successful in attracting support for Agriculture in the Federal arena particularly in gaining funds for the booklet:
Agriculture - A Perspective for Australian Schools,
and The Wool Commodities Marketing Strategies, booklet.

Finally, the Association has been providing funds for the State Association to prepare for the National Conference .On a more personal basis I have found it valuable to be able to visit schools interstate and to see colleagues and view how they run their schools.

Regards ,
Philip Roberts
NAAE President

PRESIDENT'S REPORT, APRIL 2001

Welcome to the first edition of BAAT for 2001. Most members are probably unaware that I have been elected President of NSWAAT for a further two years, a role that I am quite honoured to be voted into for a second and definitely last term.

The new executive of the Association includes Leonie Mutch from Riverview as our Secretary, and Karen Heap from Muirfield as our Treasurer. We have voted in three editors of BAAT – Brigitte Herrmann from Plumpton High School, John Killeen from Girraween High School and Milton Gower from Macarthur Anglican College a Narellan. Also this year is a new executive position for Communication and Technology. This position will be filled by Roland Clark from Canberra Grammar who is in charge of getting a NSWAAT website up and running.

I would like to thank the outgoing executive - Karen Damic, Peter Napier and Angela McCann - for their hard work and dedication. It is a time consuming and often-hard job fitting in normal teaching with the demands of the Association. For all their effort they need to be thanked on behalf of the Association.

Thanks must also go the Sydney Branch of the Association for the organization and running of the biennial conference at University of Western Sydney, Hawkesbury held in January this year. The countless hours it takes to organise a conference is often underestimated, particularly coming closer to the event when everybody is on holidays, the organizing committee are hard at work getting the final details of the conference organised. There were so many people involved but thanks needs to go to the core of the organizing committee – Peter Jones, Phil Hurst, Sheree Bourke, Brigitte Herrmann, Karen Heap, Milton Gower and Ken Langford, for all their time and effort they put into the running of a highly successful and enjoyable conference.

The highlight of the conference to many people was the conference dinner where we were privileged to have Don (Bart) Bartholomew and his wife Lorna attend. Bart was one of the founding members of our Association and had a long and distinguished career as an Agricultural Teacher. I have included a brief outline of Bart's achievements in this edition of BAAT. Most members of the association would not be aware that our publication BAAT was in fact named after Don by members of the Northern branch of our association.

Bart was invited by the association to present the most prestigious and highest honour for an Agriculture Teacher the JA Sutherland Award for outstanding contribution to Agricultural Education. The winner this year was Jenni Wilkins. To every Agriculture Teacher, the role that Jenni played in all aspects of the development and improvement of Agriculture, particularly when she was at the Board of Studies, cannot be understated. Her role as supervisor of marking of Agriculture over the past few years where she has ensured that every Agriculture student in the state has had their examination marked to the highest standard possible. A most deserving recipient of this award: Congratulations Jenni on behalf of every member of our Association.

Nominations for the recipient of the JA Sutherland award for 2003 will be included in the first edition of BAAT in 2002, I am sure we all know a deserving recipient of this award and we look forward to receiving your nominations early next year.

A large number of issues were raised at our AGM at the conference and as yet we have not received replies to these concerns, which revolved around issues such as the operation of tractors at school, the use of chemicals and the training for Agriculture teachers and the change from Chemcert to SMARTtrain in Primary Industries and the effect this will have on the HSC

exam. As soon as we get replies from the relevant bodies I will let all members know what is happening.

I have obtained a draft copy of some information sent to Principals of DET schools as part of OH&S guidelines stating a number of conditions for the operation and maintenance of tractors. Even though it is only a **draft** I would strongly recommend that you talk to your Principal in regards to the following found in the document and get their approval to have students operate tractors if you are not trained in safe tractor operation and maintenance – *The Departments **draft** policy on Tractor Safety (2000) states that any member of staff who uses, or teaches others to use a Departmental tractor or associated implement an any Departmental site must have completed an approved tractor training course.*

At the moment as far as I can find out this does not apply in Catholic or AIS schools but I would strongly suggest that you let your Principal know if you are not trained and seek their approval before having students operate tractors under your supervision. As more comes to light I will keep you updated.

Every school should have received the new Animal Care and Ethics guidelines. It is essential that you follow these guidelines in all regards and if you have any questions please get in contact with Phil Hurst at Hawkesbury High School or David Baker at St Gregory's College, Campbelltown.

If you have not renewed your membership for 2001, you will find a membership form included in this edition of BAAT. If you are not sure of your status please get in contact with our treasurer and she will be able to tell you if your membership is current or needs renewing. You will notice that our fees have increased to $45 a year to take into account the increased running costs of the Association. With the publishing of BAAT, insurance, membership to NAAE and general running costs the cost per member was about $38 per person, which meant we were running at a loss. This loss meant that we were unable to do all the things we would like to do for our members.

The National Association of Agriculture Educators (NAAE) is having their 2002 conference in Hobart from January 14th to 18th 2002 titled 'Educating for a clean and green Future'. I am sure that it will be a very enjoyable and informative conference. Details will be sent out to you as soon as they are available. If you are looking for an enjoyable holiday to Tasmania while possibly making it tax deduction this may be your answer so start planning now.

It must be remembered that our role as executive members is to represent our members of our Association. If you as a member have any issues you would like to see addressed or in-services you would like to see ran please contact me at work on (02) 9816 1044, home (02) 9817 1212 or by fax or e-mail pamccann@bigpond.com.au It is my job as President to ensure that we are meeting the needs of every one of our members in every part of the state, so please give us some feedback so we can help you.

A reminder that BAAT is only as good as the contributions it receives. Please send submissions of any articles, resources, worksheets, programming ideas, and reports on your school or show results to Brigitte, John or Milton.

Patrick McCann

Conference Report

Cast your mind back to a very hot summer. Good food, good friends and a quiet ale and you must be back at the 2001 AAT Biannual Conference; "Ag Smart", held at UWS - Hawkesbury Campus, Richmond.

Although our numbers were small, we can honestly say it was an enjoyable, relaxing and informative conference. When planning such an event it is often difficult to predict numbers and the resources required to make the conference balanced. The committee went to great lengths to ensure the program was full and diverse and at the same time fun, which is after all, what we try to achieve in educating our students.

So what did we do? Can't you remember? A quick overview, and for those who didn't attend, what you missed so you can kick yourself and attend the next conference, in the Hunter!



To ease people out of the holiday mode, the Conference kicked off with "Dodgy Brothers' Tours". Phil and Pete conducted a tour of the local Hawkesbury area where the attendees took a look at the diverse agriculture production that takes place right on Sydney's doorstep. We are always amazed at the innovation that producers have, to "make a go of it", and their ability to adapt to meet the changing need of the markets. Thanks to our hosts ...and especially River Oak Arabian Stud for the afternoon tea. Juddy was still on Dorrigo time as he missed the start and had to join us at the horse stud! (Thanks Sheree!!!)



The heat was moving in and the University pool was very inviting, especially when the rowers from the World Junior Olympics moved on as a bunch of teachers arrived. (At least we think they were leaving because we were teachers, it couldn't be the sight of us in our swimmers!). After a quick dip, it was off to the formal beach party opening, and no need to change! It was great to see everybody in the spirit and dressed for the occasion. Associate Professor Rob Mulley, Head of the School of Agriculture and the Environment, officially opened the conference and we enjoyed the pool party with a great spit roast. The VERY early start next morning didn't stop anybody enjoying themselves.

As mentioned, the next morning was very early and the bus waited for none! Fortunately, Juddy made this bus. It was a day to keep on time and the belly full. Leaving prior to dawn is a challenge we had set for a full day of touring. The first stop: Sydney Fish Markets, for the early morning Dutch auction. The scent soon wiped the sleep from the eyes of the weary and all were impressed by the size and speed of the reverse auction, starting at a high price and coming down to the first bidder. The amount of seafood and the size of some of the lobsters, crabs and tuna were unbelievable! The buzz of the venue continued throughout the whole complex.



After the Fish Markets, it was off to Flemington where the markets buzzed around us, with forklifts, trucks and carts zipping in and out. Our guides made sure we stood in all the right places, being impaled by a forklift wasn't on the agenda! The markets are made up of different parts; growers' market, wholesale retailers, banana and flower market and of course the HUGE breakfast!



The tour continued to the Cotton Store at Darling Harbour. Thanks to Christina Cleaver for hosting us and giving us an opportunity to observe what they have to offer teachers and students in resources .....and the chance to eat some more!

Whilst in Sydney, it is a must to tour the Harbour and it proved to be the best place to be, as the temperature soared! A very pleasant 3-hour tour of the harbour, no Gilligans in sight! Surprisingly, some were very impressed by the sights as we passed Lady Jane Beach! The rush nearly rocked the boat to one side as the men fought for a view!

On returning to Richmond, the pool provided relief from the heat, but only after Jonesy managed to convince the Uni staff that he was a Lifeguard. Lucky nobody needed saving!



Getting down to business on Tuesday and Wednesday gave all who attended an update in the fields of chicken immunology, wheat breeding, machinery and chemical training requirements, as well as BOS updates and useful resources.

Special Thanks to our speakers: Dr Wendy Muir, Mrs Helen Allen, Mr Andrew Horner, and Mr Warwick Moore.



Workshops provided a "hands-on" opportunity for delegates to investigate a variety of areas that they would find useful to support their own classroom delivery. A presenter has recently reported that they have received a number of follow ups from conference delegates, so it appears that both delegates and presenters found the workshops beneficial. The time and effort given to us by all the presenters is much appreciated.

No conference would be complete without a Conference Dinner, where we say thanks and well done and generally giving each other a pat on the back for the hard work we do. Pat McCann had so many awards to hand out which shows the dedication of so many Agriculture Teachers. The most prestigious award is the J.A.Sutherland Award which was presented to Jenni Wilkins by Don (Bart) Bartholomew, who also gave us an insight into Sutherland the teacher and the importance of the award within the Association. Following this, Jonesy gave us an insight into what the committee had to endure with Sheree as Chairperson - and their plan to get rid of her!



We hope you enjoyed the 2001 Ag Smart Conference as much as the Committee did. We can't thank our sponsors enough, without their support the conference would not have been as successful as it was. Thank you to those who supported Sydney Branch with your attendance and we hope that you found the conference valuable and worthwhile. We look forward to the next conference hosted by the Hunter/ Central Coast Branch in 2003.

The Committee





We Know What You Did Last Summer.....









Competition

Win absolutely nothing!!!
It's easy to enter, just fax or send in your funny captions for any of these highlights of the conference. The captons judged to be the most funny, will be printed in the next issue and will win ABSOLUTELY NOTHING!



Reply to J. A. Sutherland Award

Since the conference at Hawkesbury I have been absolutely frantic getting the new school year rolling at Holroyd High School (just like every other teacher in the State I supposeI) but I wanted to take some time out to let you know just how honoured I am to be the recipient of the J.A. Sutherland Award.

Your article in the Winter 2000 BAAT reminded us all of the enormous contribution that J.A. Sutherland made to agricultural education in this state and throughout the Pacific. All his achievements and publications are a tremendous legacy and inspiration to the current crop of Ag teachers. It really is a very prestigious award and I regard it as a great privilege to be recognised by my colleagues in this way. I have always enjoyed teaching Agriculture and I have been lucky enough to work with many talented Agriculture teachers during my syllabus development days at the Board of Studies, at HSC marking and as part of the professional association. My only regret about teaching at Holroyd is that Agriculture is not part of the curriculum offering.

Please pass on my sincere thanks to the judging committee for supporting my nomination. Suffice it to say that my plaque has pride of place in my office at schoolI

Thank you for a tremendous conference. ..... I know about the time and effort that goes into them ....and I hope that all goes well for you both in 2001.

Thanks again
Jenni Wilkins



Jenni Wilkins accepting the J. A. Sutherland Award from Don (Bart) Bartholomew

Don (Bart) Bartholomew C.V.

- Taught Agriculture for 38 years (1948 to 1985), 36 of those years teaching Agriculture only. One of his students topped the HSC in 1975.
- NSW first form master, together with 3 others. First Agriculture advisor to NSW North Coast (Tweed to Wingham), where 21 schools were teaching Agriculture.
- Formed North Coast Agriculture Teachers Association, organising first seminars on the North Coast.
- Past district governor Lions International, establishing Queensland's first eye bank as a Bicentennial project.
- On the committee, which designed the Lions Youth of the Year Quest, now an international project. Surveyed schools to determined its acceptance.
- Fund raising chairman for establishment of Tweed Open Learning Access Centre, a branch of Southern Cross University.
- Member of the Moran Art Prize Committee, the world's richest art prize.
- Married to Lorna, who taught for 36 years, father of Wayne Bartholomew, former world surfing champion and currently CEO of World Surfing and past ambassador to the United Nations.
- Both Bart and Lorna enjoyed teaching immensely and would choose teaching as their vocation if they had to choose again.

Pat McCann

JUNIOR AGRICULTURE COMPETITION 2000

The Junior Agriculture competition was revived by the Sydney Branch last year and provided a quality resource for over 120 schools throughout NSW. It was run later in the year when some major sponsors gave their support in July. Special thanks to "THE COTTON DISCOVERY CENTRE" as the major sponsor for first prize in each region. "THE LAND" newspaper sponsored second prize. And the Western Sydney University provided the winning medals. The paper was written by John Killeen, Lyndall Maloney, Christina Cleaver from the Cotton Store and Tony Reddan. John produced the final paper which, all participating schools would agree, was of a high quality.

The Junior Ag. Comp. has been run by the Sydney Branch of the NSWAAT for a number of years and has given schools a valuable ag. skills assessment as well as raising agriculture's profile within each school and throughout the state. We need the support of as many ag. schools as possible to make this competition viable so get behind the competition with as many students as possible. Your direct input is always appreciated through comments or actual hands-on assistance.

Tony Reddan

AG. COMP WINNERS 2000

Region	Place	School Name	Student name
Central			
	1st	Narromine H	C Worrall
	2nd	Kinross Woloroi	G Batten
	3rd	The Scotts Sc. Bathurst	R Tasker
Hunter			
	1st	Gosford H	J Lambert
	2nd	Gosford H	A McLuckie
	3rd	Scone Grammar	K Moore
James Ruse			
	1st	James Ruse	J Lee
	2nd	James Ruse	J Chung
	3rd	James Ruse	B Ting
Met East & North			
	1st	Galston H	N Hinton
	2nd	Barker College	J Henderson
	3rd	Barker College	G Dale
Met South West			
	1st	Camden H	R Lees
	2nd	Macquarie Fields H	C Van
	3rd	Macquarie F H	S Hancock
North East			
	1st	The Armidale Sc	M Wiseman
	2nd	South Grafton H	R Burch
	3rd	Coffs Harbour Christian S	B Muller
North West			
	1st	WeeWaa H	S Bullen
	2nd	Narrabri H	M Roberts
	3rd	Narrabri H	J Foxe
South East			
	1st	Bomaderry H	L Hawley
	2nd	Canberra Gram	A Topfer
	3rd	Canberra Gram	S Roberts
South West			
	1st	The Scotts School Albury	T Preston
	2nd	Wade H	J Buckley
	3rd	Wade H	J Tyrrell
Met West			
	1st	Pennant Hills	J Marshall
	2nd	Pennant Hills	H. Salvin
	3nd	Girraween H	E Welshman



Technology Unit
Curriculum Support Directorate
NSW Department of Education and Training

HSC Workshops

During Term 2 2001 12 one-day workshops were held across NSW to support public school teachers of all HSC technology subjects. These workshops included general discussion and subject-specific activities regarding:

- Standards-referenced assessment
- HSC examination
- Resource sharing.

Activities enabled teachers to focus on their subject and work with colleagues to come to a better understanding of the issues surrounding the preparation of quality assessment programs and tasks. The HSC examination session clarified the process implemented by the Board of Studies for developing HSC exams. Teachers at the workshops prepared a HSC exam question using writing briefs. The final session gave teachers an opportunity to share resources and to view some of the online resources available for technology subjects.

The workshops were for government school teachers of:

- Agriculture
- Design and Technology
- Engineering Studies
- Food Technology
- Industrial Technology
- Information Processes and Technology
- Software Design and Development
- Textiles and Design

These workshops were held at:

- 14 May - Lewisham
- 17 May - Ballina
- 21 May - Hornsby
- 23 May - Tamworth
- 28 May - Penrith
- 4 June - Newcastle
- 6 June - Dubbo
- 13 June - Albury
- 19 June - Port Macquarie
- 21 June - Griffith
- 27 June - Queenbeyan
- 28 June – Wollongong

Curriculum Support website

The Curriculum Support Directorate Web site was launched early in 2001. It is designed to provide Department teachers, located anywhere in New South Wales, with curriculum support twenty-four hours a day.

The Technology section of the web site at http://www.curriculumsupport.nsw.edu.au/technology/index.cfm has been developed to provide access to resources relevant to teachers of technology. A variety of resources, which address all Technology syllabuses are currently available on the site. New material will continue to be added to the site. Other sections include safety, becoming a technology teacher, professional support and the calendar.

HSC Online

Provides an opportunity for teachers and students to supplement class activities, investigate their subject using online materials and provide a different avenue to consolidate their knowledge. HSC Online for Agriculture is available at http://www.hsc.csu.edu.au/agriculture/

For further information about HSC Online, the Curriculum Support website or the HSC workshops contact the Technology Unit by calling Lyndall Foster on 9886 7623 or Bill Blake on 9886 7542. You may also fax on 9886 7654.

THE MINISTER'S YOUNG DESIGNERS AWARDS 2001

An opportunity to acknowledge and reward the achievements of Year 7 & 8 students in Design and Technology.

To: Coordinators of Design and Technology, Computer Studies, Agriculture and Head Teachers of Technological & Applied Studies, Industrial Arts, Home Economics.

The dates for **The Minister's Young Designers Awards 2001** are as follows:

Term 2 Teacher Information Booklets to schools
July 6 Expressions of Interest forms to Exhibitions Coordinator
September 24 School Award Winners to District Judging Centres
October 18 District judging and award presentations complete
October 19 District Award winners to State judging
November 20-December 2 Exhibition of selected State finalists at Taronga Zoo, Sydney

The awards provide opportunities to raise the profile and status of design and technology both within the school community and beyond.

ADDITIONAL INFORMATION

- Students may work individually or in small groups of up to six students.
- All students who are nominated by their school receive a letter of recognition for their participation in MYDA. Five projects from each school can be rewarded as district finalists and up to three projects from each district will be recognised as state finalists. Approximately 30 projects will be exhibited at the state exhibition at Taronga Zoo, Sydney. State award winners and their families, teachers and principals can attend the state awards ceremony. The state awards are presented by the Minister for Education and Training.
- Awards will also be presented to schools at the District and State level, in recognition of the important role teachers play in the success of students. Awards will be presented for best participation by a school which has not participated in the previous two years of MYDA; and the most significant student participation rates by a school.
- Schools should submit both the folio and the design solution for District judging, unless the design solution is too valuable, fragile, awkward or large to transport easily. In these situations the folio should include photographic or other evidence of the nature of the design solution. Selected projects will then be forwarded by District Coordinators for State judging.
- Each school will receive two Teacher Information Booklets for The Minister's Young Designers Awards (MYDA) and can expect them to arrive in Term 2. Expressions of Interest will be accepted until July 6 2001.

Correspondence to:

Teresa Renneberg, Exhibitions Coordinator
GPO Box 5300 Sydney NSW 2001
Tel: 02 9367 8309 Fax: 02 9367 8375

Ag Camp 2000

By Ken Langford
Ag camp 2000 Academic Coordinator

Background

The program known as "Ag Camp", emerged in 1993 from the insight of a Hawkesbury Graduate and secondary teacher Mr. David Spencer, who was teaching at Richmond High School, at that time. He gathered together a team of mainly teachers in the local High School "feeder area", plus myself in order to develop an integrated program for "Talented and Gifted Agriculture Students".

The original Ag Camp concept, involved 100 - 130, year 9 - 10 students, participating in a number of activities over a Saturday and Sunday "residential", at Hawkesbury. After the first year, high school staff requested that Ag Camp be extended to include the Friday, making three full days. A maximum of 4 students from each school recommended by their agriculture teacher, so 30 - 50 schools send students and staff to Hawkesbury for Ag Camp.

Ag Camp 2000 represents the seventh consecutive year of successful operations. Normally, Junior Ag Camp is timed to coincide with Hawkesbury's July Semester Break. High School and University Staff, devise, design, and conduct activities. This year, the holiday adjustment, caused by the Sydney 2000 Olympics, restricted the dates available for Ag Camp 2000. However, this did not adversely affect the numbers attending, and in fact, a greater number of staff and schools who had not previously experienced Ag Camp applied to come. The program utilises Hawkesbury's livestock, laboratory, technical and farm personnel, student mentors, and academic staff, as well as some very modern New Holland tractors.

High School students and their teachers, reside on campus and use dining room, as well as teaching facilities. The program has expanded to include University designed and run activities, on the Friday and in one year previously, excursions to local farms. There is also a significant social program including team building exercises on the Friday night, and a "Bush Dance" on the Saturday night.



Auntie Sheree shows how to do it!

The Current Program

The current program has been reduced from 3 days to 2 days to give staff time to recover for school on Monday and to save costs. The 3-day program has been condensed into the 2 day one without losing any of the original impact. The Ag Camp 2000 program begins on the Friday at 7.30 AM, with registration, student's "Agcamp" Sloppy Joes are issued, rooms are allocated, and students form groups, and meet their senior university student mentors. The mentors "break the ice" and then outline the Ag camp program in detail. The mentors quickly team the group up, and the friendships begin. There are four colour groups each divided into two sub groups of about 12 – 14 students. The sub groups are called: The Blue: Bulls / Bucks, The Red: Rams / Heifers, The Yellow: Chicks / Ducks and the Green: Colts / Fillies. The students stay in those mixed gender, mixed school groups, for the entire program. Two University student mentors take responsibility for each group.

After an official welcome from the head of The School of Environment and Agriculture, the 8 groups participate in a series of team building activities called "The Challenge".



"The Beam", a real team builder early on in Ag Camp

Retrieve the bucket of gold from the crocodile infested river- but work as a team now!"



They then spend the rest of the day on a rotational activity program consisting of: Wool Classing, Equine Reproduction, Integrated Pest management / Apiary Technology, and Environmental Measurement. A group photo is organised before lunch. A copy of this for each student / staff member, will be included in the Ag Camp 2001 program. All groups observe the afternoon milking at the campus dairy. Some volunteers get to participate in the morning milking (4.00 AM rise) and afternoon milking. Following the evening meal the groups participate in team building exercises, and finish the night with a campfire.



The tractor operation activity is very popular

The Saturday consists of a cyclic program of Tractor Operation and Machinery Safety, Sheep Management and Wool Handling, Beef Cattle Management and Parading, Horse Management Practices and Deer Husbandry.



Grooming and preparing stock for the parade ground

The Camp is concluded with a bush dance and closing ceremony. Students go home after the Bush Dance. Some students who live in rural and remote areas stay on over night and return home on the Sunday. Likewise those students travelling large distances can stay, by negotiation, on the Thursday evening prior to the Friday registration.



Uncle Milton demonstrating how to tell the age of a cow

Almost 800 students, 100 staff, and 100 university student mentors have experienced Ag Camp since its inception. This year saw a significant increase in staff who had not previously experienced the camp. The organisation for "Ag Camp 2001 " has already commenced. The organising committee consists of 10 - 12 Agriculture Teachers, interested members of the university staff, Graduate Diploma in Education students from UWS Penrith Campus, and UWS Hawkesbury Campus Students studying in courses such as : Systems Agriculture, Equine Science and Landscape Management and Conservation.

One significant feature of the Ag Camp, is the use of 1st, 2nd, and 3rd Year Agriculture students as mentors. Their role is to facilitate a group of 12 – 14 high school students for the duration of the camp. They are responsible for team building, maintaining group adherence to the timetable, and guiding the group to various venues. Mentors are also responsible for providing leadership, and also for monitoring student well being. Each Mentor undergoes training in Child Protection, Occupational Health and Safety, and facilitating groups. The mentors operate in mixed gender pairs. This

relationship between the Hawkesbury students and the secondary students is extremely positive. There is a real bond created by this experience. It produces favourable perceptions in the minds of the high school students which, in my opinion, could not be achieved by staff-only managed programs. The mentors are good role models for the Ag Camp program, as well as invaluable ambassadors for this campus and our courses.

Ag Camp 2000 - Access and Equity

This year AG Camp welcomed 103 children and 34 high school, in a celebration of learning activities, which were aimed at promoting Agriculture as an enjoyable and accessible area of study both in the student's senior school and at UWS-Hawkesbury. This year again, Ag Camp received funding support through the UWS Hawkesbury Student Access and Equity Grants Scheme. This scheme provides scholarships and travel assistance to students from low socio-economic backgrounds and from rural and isolated communities. The purpose of the scholarship is to enable students to participate.



The largest unsupported circle in the world! (well, in K7, anyway!)

The Ag Camp program incorporates and emphasises team building exercises and as such, takes into full consideration the communication and social needs of students. The camp not only promotes support between staff and students, but it also emphasizes the level of support that students can offer each other. This makes Ag Camp a potentially responsive environment for students from targeted equity groups. The Faculty has enrolled over 30 students, from Ag Camp over the last 4 years. This is seen as an indication of the program's success and sustainability. In a recent survey Ag Camp was placed fourth after: the UAC Guide, "word of mouth", and Open Day, as the source of motivation to "study at Hawkesbury"



Ag Camp 2000 Campfire: day #1 winding down

Feedback

The feedback from students indicate that the impact of Ag Camp is much more significant than we first thought. Ex-Ag Camp students, who have enrolled this year, speak of:

- their familiarity with Hawkesbury's **Geography** (by having to attend activities at a number of venues on campus)
- their familiarity with Hawkesbury's **Infrastructure** (through the program , they gaining insight into the available facilities at UWS Hawkesbury)
- their familiarity with the **Personnel** (they know who is who ! and who does what ! in regards to UWS Hawkesbury students, as well as academic, technical, farm, and residential, staff)
- their familiarity with **Course Structures and Expectations** (through association with their student mentors)
- their familiarity with the University's **Social, Historical, and Cultural** aspects (by observing photographs, heritage buildings etc)
- their familiarity with the **atmosphere** of UWS Hawkesbury (experiencing "living on a unique and beautiful university campus", and breaking down the barriers, between high school and university.



They have spoken of Ag Camp as having "broken the ice", clarified the "mystery of university". Ag Camp appears to forge a direct link between attending university and enrolling at Hawkesbury. High School Staff are also pleased with the results of the scheme. Staff who had not experienced Ag camp commented extremely favourably about the scheme. Other regular Ag Camp staff comment positively, and return each year with their students.



High School Staff, speak of "increased motivation, a more workable relationship, new focussed agricultural aspirations, and a real sense of 'community' in students who have attended Ag Camp. Parents have written to the chairperson, Dr. Graeme Wells (Riverstone High), expressing "delight with the program and thanks for a job well done. All staff exhibit a genuine commitment to this project and make many sacrifices in time and effort, to ensure its success."

Students and staff requested that Ag Camp 2001 be extended to 3 days finishing on the Sunday at approximately 1,30 pm. Access and Equity Scholarships will be available. It is proposed that the Sunday Morning program be devoted to an Agriculture Mini Olympics. This would consist of a series of challenging knowledge skill related tasks in a competitive framework.

Ken Langford
Academic Coordinator, Ag Camp
k.langford@uws.edu.au
0245701322



Auntie Jane, Auntie Jo, Uncle Naffa, and Auntie Cathy, demonstrate how to look like a goose



New Holland supplied over $1 million worth of tractors and machinery for Ag Camp 2000



Ag Camp 2000 "Class Photo", (Maroon sweatshirts are staff and mentors; black sweatshirts are the students) "Say Cheese!"

"Cottoning on to pests – the answer's in genes"

Pests and Diseases

For centuries pests and diseases have hindered agricultural production all over the world. Agricultural insect pests alone can cause the loss of between 30-100% of a crop.

Pests – organisms that conflict with human interests and have a significant effect on agricultural production.

Diseases – bacteria, viruses or fungi that can affect the survival or productivity of a plant or animal.

The problem with pests!

Pests and diseases are undesirable as they:

- reduce productivity
- contaminate the product
- can cause death of cotton plants
- increase cost of production in control measures

Cotton productivity can be seriously limited by all the major pests that afflict crop plants. Unless properly managed, weeds, insect pests, plant pathogens and nematodes can cause serious crop losses and each year a major portion of cotton management strategy and cost is devoted to their control. Losses are reflected both in terms of fibre yield, fibre quality reduction and delayed harvest.

Cotton Pests

Some 30 species of insects attack cotton. Of the 30 pests, four are of major importance, requiring control measures in most regions in most seasons:

- heliothis (*Helicoverpa punctigera* or *Helicoverpa armigera*)
- green mirid (*Creontiades dilutes*)
- two spotted mite (*Tetranychus urticae*)
- cotton aphid (*Aphis gossypii*).

Heliothis is the most destructive pest, causing millions of dollars of damage each year. These caterpillars cause a lot of damage by eating into the bolls and ruining the cotton lint inside. Heliothis is also a pest of many other fruit, vegetable and grain crops.
Not all insects are pests. Some insects help the cotton plants by destroying the pest insects. Helpful insects are referred to as beneficials and include ladybirds, spiders and ants.

Cotton diseases

Fusarium wilt and *verticillium wilt* are caused by fungi that infects plants via the root system. It blocks the plant's ability to take up water, causing wilting, yellowing and leaf mottle, often causing plant death. Cotton varieties that are resistant to *Verticillium wilt* are available.

Black root rot is a fungus that affects seedlings, causing stunting and slow growth.

Bacterial blight is a bacterial disease which causes dark green angular spots on the underside of the leaf. It may also affect young developing bolls. Most cotton varieties are resistant to bacterial blight.

Controlling pests and diseases

There are a number of different methods of controlling pests and diseases in the cotton crop

- Biological control – the use of natural predators and pathogens to control pests and diseases. Examples of biological control methods are; encouraging lady birds to live in the cotton to eat the aphids or using biological sprays which can be developed from soil bacteria and used to control plants without affecting beneficials
- Chemical control – using selective pesticides to control certain pests and diseases.
- Physical control – growers cultivate the soil to destroy insect burrows and rotate crops to prevent the build up of pests and diseases in the soil,
- Genetic control – Varieties of plants are bred for resistance to pests or diseases through conventional breeding or transgenic breeding.

Integrated pest management

Integrated Pest Management (IPM) uses a range of control measures to protect the crop and emphasise where possible the use of non-chemical controls. IPM works with nature and has enabled growers to reduce the use of pesticides.

Ingard cotton

Cotton with an inbuilt defence against heliothis is referred to as Ingard. Ingard cotton contains a gene taken from a soil bacterium called *Bacillus thuringiensis*. Bacillus thuringiensis bacteria produce a crystal protein which is toxic (when swallowed) to the heliothis caterpillar

The production of Ingard cotton

Ingard cotton took about 10 years to develop before it could be commercially grown. The problem was finding out how to transfer the gene from the bacteria into the cotton.
The first step is to isolate the gene from the bacteria (donor organism) and it is this step that is often the most difficult. When the piece of DNA (gene) which produces the toxin has been isolated it needs to be inserted into the cotton.

There are a number of different methods of introducing a piece of DNA into an organism. The introduction of DNA into cotton is done by firstly transferring the gene to a soil-borne bacterial pathogen called *Agrobacterium tumefaciens*. The soil-borne bacterium had the capability to transfer genetic material into a cell from a cotton plant.

The challenge is then to turn the cell containing the new DNA in to a whole transgenic plant in which all of the cells of the plant contain the same new genetic information. The key is to use tissue culture to grow a new plant. The whole process takes about 9 months. The plants produced at the end are normal, set seed and pass the introduced genes on to their progeny. The only difference from non-transgenic cotton is that all of their cells contain two extra genes.

Resistance management

There has always been a fear that the heliothis caterpillar will develop a resistance to Ingard cotton. To combat the problem, growers are planting conventional cotton alongside Ingard so that heliothis that haven't been in contact with Ingard can swamp the resistant insects during breeding.

Safety issues

The natural insecticide is not produced in the cotton seeds, so it cannot enter the food chain, nor can it wash out of the plants' leaves into the soil or waterways. The toxin produced by Ingard cotton is species specific to heliothis. It is harmless to people and other living things including beneficial insects and native animals.

There has been some concern that transgenic cotton could fertilise other related plants in the wild creating hybrids. Hybrid plants resistant to heliothis, could spread and disrupt the resistance management strategy. Researchers have measured the pollen movement from transgenic crops and found that there is no possibility of this occurring, nor the widespread movement of pollen to other plants.

Advantages of Ingard

As a result of the use of Ingard, Australian cotton farmers have been able to reduce their use of synthetic pesticides by up to 50 per cent. This is good news for farmers and the environment.

Ingard cotton is generally cheaper to grow as the application and use of chemicals is reduced.

For more information about Ingard, gene technology or the cotton industry visit the following websites:-
www.cottonaustralia.com.au
www.biotechnology.gov.au
www.monsanto.com.au
genetech.csiro.au

The Cotton Discovery Centre has introduced a new excursion looking at all aspects of gene technology, which is relevant to the Plant Production and Innovation and Diversification Stage 6 topic areas. Students have the opportunity to carry out their own biotechnology experiments under the supervision of a trained scientist.

For information and excursion bookings about this new program or other agriculture programs please contact the Cotton Discovery Centre on ph 02 92112888 or fax 02 92115888

NATIVE GRASS MANAGEMENT

Australian native grasses grow in a wide range of climatic conditions to match the extremes of climate that characterise our island continent. Many of the species we take for granted in our part of the country grow just as well in semi-arid parts of the Northern Territory and Western Australia. Like all other grass types, they can be either a C3 type grass (more temperate) or a C4 type grass (more tropical). This classification gives us an indication of when they are likely to be more productive, ie, through the cooler months or through the warmer months. The following table summarises the characteristics of C3 and C4 plants:

Characteristic	C3	C4
Temperature	0 – 35 °C (optimum 25°C)	15 – 45°C (optimum 35°C)
Moisture	More	Less
Nutrients	More	Less
Sunlight energy	Less	More
Feed value	Higher	Lower
Production	Lower	Higher
Examples	Wallaby grass Microlaena Common wheat grass Native perennial legumes	Kangaroo grass Red grass Wire grass Mitchell grass

In many native pastures, it often appears as if the C3 plants have all but disappeared. Many continuously grazed "native paddocks" are dominated by C4 plants including red grass and western rats tail. This reduction in C3 plants may be telling us that the management of that paddock has lowered the water holding capacity of the soil. Constant stock pressure compacts the soil, reduces the mulch cover and makes the soil an inhospitable place for plant roots and the soil microbes that feed them. If you tried to grow lush winter vegies on a compacted bare track or road, you would no doubt see the same result!

As the table (above) suggests, C3 species need higher moisture levels than C4 species. This can be easily explained by looking more closely at the differences between the C3 and C4 photosynthetic pathways, but I won't go into that detail here. C3 species also produce less bulk than C4 species. Since they grow more slowly than C4 species, they need more time to recover from grazing than do C4 species. Grazing management involving at least a four paddock rotation will give all plants more time to recover from grazing in the absence of stock so they can realise their production potential for future grazings.

More information on identifying and managing native plants can be found at:

www.stipa.com.au
This is the website for the Stipa Native Grasses Association. Membership of $11 (GST inclusive) per year will give you access to their quarterly newsletter and advance notice of any field days and seminars on native grasses. You can also get in touch with the Darryl Cluff of Stipa through his email: stipa@coolahddg.com.au

Mgoodacre@dlwc.nsw.gov.au My email address! If you have any specific inquiries particularly on good publications for identifying and managing native grasses, send me a note and I'll see what I can do.

Ringham@ix.net.au The email address for Richard Ingham, Facilitator for the Sustainable Grazing Systems (SGS) Key Program. SGS have produced some excellent material on managing native and sown pastures, rotational grazing, water and nutrients relevant to pasture and grazing management.

MARY GOODACRE: Conservation Grazing Officer
Department of Land and Water Conservation
PO Box 174
MUDGEE NSW 2850
Telephone: (02) 6372 4044
Facsimile: (02) 6372 6719

Safe Use Of The School Tractor

Peter Jones
Chifley College - Mt. Druitt Campus
30 March 2001

The following are my thoughts / suggested guidelines for the safe tractor instruction and use on a school farm. It must be clearly stated that these are my own personal thoughts.

At the time of writing this article no official guidelines as to how machinery instruction to students is to be carried out have been issued from the Department (DET).

Getting The Picture (all true stories)

1. A departmental officer showed me a student learning to drive a tractor while pulling a trailer carrying hay and full of students. The teacher is standing in the path of the wheels. The officer asked me is that how tractor safety is taught in schools. He was not impressed.

2. An untrained general assistant on a north coast high school falls under the wheels of a tractor and slasher whilst it is being operated by a support student. The general assistant is badly injured. The Department is fined by WorkCover.

3. A tractor is driven deliberately into a wall by a student. Accusations were made that the brakes were faulty and that the supervising teacher failed to provide safe learning environment. Unwarranted stresses were placed on the teacher and the farm assistant.

4. A tractor is badly damaged when a student drives the tractor back into a shed.

"Knee jerk" reactions from the Department are starting to be heard. There are thoughts drifting through the corridors of Bridge St. that students should be banned from operating tractors. Safety must be increased when it comes to students, teachers and ancillary staff using tractors.

Why Safety Is Paramount.

The Occupational Health and Safety Act decrees that you must have a safe work environment. If you notice a danger it must be reported to your supervisor or removed.

With regards to farm machinery, you have the responsibility to make sure all farm machinery is safe to use and that it is used safely. This means making sure students and other workers know how to operate the machinery safely.

Tractor operation courses are being considered by the Department, at the moment, for all agricultural teachers, farm assistants and general assistants. The only officially trained tractor operators in the Department at the moment are those teachers who have been trained in the Primary Industries course. Stay tuned for updates in this area.

Something To Think About For Starters.

Does your tractor have a ROPS (roll over protective structure) fitted? Does the ROPS have a compliance plate fitted? Older tractors often had a ROPS fitted but there is no compliance plate. That is because some of the early ROPS were made before the

"standard" was gazetted. Look for a compliance plate on your tractor's ROPS. Check with your local WorkCover office to see if you need to purchase a new ROPS.

How loud is the tractor? Are students given some form of hearing protection whilst operating the machine?? Ear muffs are essential unless students are inside a tractor cabin. Alcohol wipes can be used to decontaminate ear muffs. Students may wish to bring their own ear plugs, but these should not be swapped between students.

Suggested Assistance and Training

Lawn mower and tractor dealerships often have a range of videos, manuals and pamphlets on machinery safety. These can be easily modified (if need be) enabling you to make up wet weather work sheets or literacy exercises (procedural text types, cross word puzzles and find a words)

There are a range of publications from WorkCover that are very useful. Ring their book shop and ask for a catalogue to be sent out. Every student should see the WorkCover video "Bitter Harvest".

Tocal Ag. College sells a "Tractor Operation and Maintenance Training Manual". This is the same booklet the Rural Industries and Primary Trained teachers received during their training. Cost about $10.

Find your nearest Primary Industries trained teacher. Ask them for advice on resources, instructional methods etc. There are a heap of tractor safety videos floating around.

Some Handy Hints You Might Like To Consider

Hand out a permission note informing the care giver that their child is about to undergo training in machinery operation and that there is risk associated with this type of lesson. Make sure the note is signed, returned and filed in a safe place. No note - no operate. A typical note is in the appendix.

Keep a register of lessons indicating a summary of the content as well as accurate class rolls. This is proof that you taught an aspect of farm machinery operation and particular students were present during that lesson.

Give students theory lessons based on the possible dangers of using tractors as well as the parts to the tractor and their function BEFORE using that piece of machinery.

Test students either orally or in writing BEFORE students use that piece of machinery. Make sure you record the marks that students have achieved. If there is an accident you will be able to prove the students were competent in at least the theory aspects of the course.

Theoretical tests given to students could be either written or oral format. Oral tests should be done on a one-to-one or small group basis. Oral test would allow NESB and slower students to prove their knowledge.
A simple oral test might be to get students to tell the teacher the name and function of 5 levers, dials or pedals that the teacher is pointing to. This test takes only 3 or so

minutes. Students who are lacking in their theoretical knowledge should be re tested until they are deemed competent in that knowledge.

Some schools issue a "tractor licence" when students have passed both theory and practical tests. Phil Hurst at Hawkesbury High School even incorporates a digital photo of the student onto the licence which is laminated. It looks very professional.

Levels of competence can be rewarded by a range of licences. eg Lawn mower, rotary hoe operator, basic tractor operator, advanced tractor operator.

Practical tests would normally be on a one to one basis but may also involve a group of students eg. changing the implement on the back of a tractor safely.

If there is only one seat on the tractor then only one person (the operator) can be on the tractor. The instructor must be on the ground. It is breaking the law to ride on a tractor unless there is an approved seat for the passenger / instructor.

Teachers should drive the tractor out of and back into the tractor storage area until student experience is proven in open fields.

Original instruction should be performed whilst the tractor is located on a large flat surface eg. football field or external basket ball court. Keep away from any slopes, ditches, fences, trees or other obstacles.

Original instruction should be performed with the smallest tractor available.

Larger tractors have a much higher risk factor linked to their use during instruction and operation. These risks include:

- greater speed
- a wider range of gears (kids making a mistake during selection)
- greater risk when the instructor tries to gain control of the tractor

Large tractors should only be used when the student has proven themself to be extremely competent on the small machine.

Inexperienced operators should operate tractors set in the lowest gearing and with lowest revs that are appropriate.

Students need to make sure lose clothing is either removed or tucked in before approaching the tractor. Long hair should also be tied back and tucked into the operator's shirt. Hats can hold hair in place.

Students must use some form of hearing protection when operating tractors with no cab or an open cab.

Instructors should use hand signals to communicate with the operator when at a distance. A copy of the suggested hand signals from John Deere is attached.

Some safety companies (eg Protector) sell a two-way radio system which is incorporated into ear muffs. These are rather expensive and untried by the author.

Instruction needs to be given from the "clutch side" of the tractor whilst the machine is in operation, as this allows easy access to the clutch if there is a problem.

Get students to follow lines on football fields or basket ball courts eg stopping on a line, reversing along a curved line, turning to the right etc

Students must demonstrate competency in performing a stopping procedure with the tractor in low range, first gear BEFORE they are allowed to operate in low range second gear etc.

The stopping procedure is ....1) decrease revs... 2) depress the clutch...3) depress the brake.

Use a series of tomato stakes lightly hit into the soil to simulate a garage. Students must back into the "U" shaped space to prove competency. The advanced student might be able to back a tractor and trailer into "the shed".

With the teacher still supervising, allow the better skilled students to give directions to other less capable students eg. telling the operator to stop and change gears, turn to the left , stop on a line.

Flower pots, garbage bins and sports markers all make excellent markers for students to drive between.

Instructors need to list the different practical skills they feel a safe and competent operator should have. After teacher demonstration and allowing students to practice these skills, students should be assessed for that skill. Again marks are recorded. A possible check list allowing a record to be kept of all class members' achievements is attached. This was developed at Colo High School with the assistance of the other ag teachers there.

DET Schools and Farm Tractors

All DET schools are supplied with an amount of money each year, which is allocated for the repair and maintenance of farm machinery. The amount allocated is dependent on the number of students studying Agriculture. The money is in the school stores allocation and a letter is sent out informing the principal of exactly how much is allocated to that particular school.

Do you know how much your school was given??

Has this money been spent checking, servicing and repairing farm machinery?

Tractors are now starting to be replaced in DET schools. 57 schools will be receiving money for a new tractor, PTO rotary hoe and slasher in 2001. This replacement process is based on the age of the tractor. Contact one of the members of the State Agricultural Advisory Group if you want to know where you are on this list.

P. Jones

APPENDIX

Operation Of Agricultural Machinery Permission Note

Dear Parent / Guardian,

During your child's agricultural studies, students will be given safety instructions and training in the use of a wide range of agricultural machinery. This machinery may include lawn mowers, power tools, rotary hoes and tractors (not front end loaders).

Following a period of testing students will be allowed to operate the machinery on the school grounds. At times, those students who are deemed to be proficient will be allowed to operate selected machinery under minimal supervision.

Parents should be aware that there is an element of risk in students operating any machinery. At all times students are expected to follow the strict safety directions issued to them. These include the wearing of personal safety equipment, operating at appropriate engine revs and ground speeds, and performing pre start checks etc.

Any student found abusing the privilege of operating the machinery will have that privilege removed.

If you would like your child to fully participate in this activity please sign and date the lower portion of this note and return it as soon as possible.

Mr. P. Jones
Head Teacher Science / Agriculture

Ms. C Anderson
Principal

I give permission for ..... of year ..... to fully participate in the farm machinery safety activities being taught by the agricultural faculty at Mt Druitt High School.

I understand all reasonable care and safety will be taken by the teachers during the instruction period. Children deemed proficient will be operating various machinery under minimal supervision.

I understand that there is some risk in operating machinery

Parent/Guardian ..... Date .....

Name.....

Farm Safety and You On The School Farm

Colo High School

Here is something to think about. **1998**

*** What kills most farmers ?**

Most deaths	**Drowning**
↑	**Horses**
↕	**Motor Bikes**
↕	**Tractors / Machinery / workshop accidents**
Least Deaths	**Firearms**

70% of all farmers have noise induced hearing loss in the left ear.

*** Agriculture has the 2nd. highest injury rate of all industries and this figure is rising each year.**

This safety review test is designed to remind you of some of the safety issues whilst working on the school farm.

It is your responsibility to act safely at all times on the school farm.



Your task is to answer the questions over the page by circling the correct answer. The marks gained will be recorded against your name. They are part of your yearly assessment.

Safety Revision Test Name .....

The Farm Workshop

1. Students are not to use tools without permission or prior instruction. True / False

2. All portable power tools must be used in a safe manner and making sure that power leads are not damaged. True / False

3. It is OK to walk on power leads True / False

4. Students should report any damage to their teacher straight away. True / False

5. When using power tools avoid areas where there is water on the ground. True / False

6. It is best to organise power leads so that they lie in the path of other students. True / False

7. All safety equipment required when operating machinery must be worn. True / False

8. Correct lifting procedures must be used at all times. True / False

9. Students are to act safely at all times. True / False

Machinery and Equipment

1. All personal safety equipment needed when operating machinery is to be worn. True / False

2. Students must seek permission from the teacher to operate any machinery. True / False

3. Students must hold particular machinery licences in order for them to operate machinery without close supervision. True / False

4. Damage to machinery should be reported straight away. True / False

Farm Animals

1. Students are to treat animals humanely. True / False

2. Students need to follow basic farm animal handling and movement procedures. True / False

3. Students are allowed to ride the sheep. True / False

4. Students need to be aware of the dangers to themselves and the animals when working with animals. True / False

5. Students are to use proper lifting procedures when casting and lifting animals. True / False

6. Students should wash their hands after working with animals. True / False

7. Students should be aware of the dangers of needles and chemicals when injecting animals. True / False

Crops, Pastures and Other Plants

1. Students should wear protective clothing when applying chemicals to crops and pastures. True / False

2. Students should wash their hands after dealing with soil. True / False

3. Students should use all garden hand tools safely True / False

4. Students should use the correct tool for the particular task to be completed. True / False

5. Students need to be aware of uneven ground, fences and other hazards that may cause a danger when operating machinery. True / False

Score..... / 25

Basic Tractor Test

Class..... Feb.98

Colo High School.

Name / Skill																				
Pass a theory test on tractor safety																				
Identify 5 hazards around the tractor																				
Identify 8 levers and other parts to the tractor																				
Preform a pre-start check																				
Modify clothing and hair (if need be)																				
Mount the tractor on the correct side																				
Prepare the tractor for starting																				
Perform a cold start																				
Perform a hot start																				
Wear protective safety gear																				
Select the correct gear and move off smoothly																				
Follow hand given instructions																				
Accelerate when given instructions																				
Stop the forward movement of the tractor instantly																				
Reverse the tractor																				
Park the tractor safely																				
Turn off the engine																				
Dismount correctly																				
Act in a safe manner at all times																				
Date Achieved																				

Intermediate Tractor Test

Class..... Feb.98

Colo High School.

Name / Skill																				
Pass a theory test on tractor safety																				
Identify 5 hazards around the tractor																				
Identify 8 levers and other parts to the tractor																				
Preform a pre-start check																				
Modify clothing and hair (if need be)																				
Mount the tractor on the correct side																				
Prepare the tractor for starting																				
Perform a cold start																				
Perform a hot start																				
Wear protective safety gear																				
Select the correct gear and move off smoothly																				
Follow hand given instructions																				
Accelerate when given instructions																				
Stop the forward movement of the tractor instantly																				
Reverse the tractor																				
Park the tractor safely																				
Turn off the engine																				
Dismount correctly																				
Act in a safe manner at all times																				
Engage and disengage the PTO																				
Slash a strip around a paddock																				
Select the correct revs and gears when travelling along a road / track																				
Use the diff. lock																				
Date Achieved																				

Advanced Tractor Test

Page 1 **Class.....** **Feb.98**

Colo High School.

Name / Skill																				
Pass a theory test on tractor safety																				
Identify 5 hazards around the tractor																				
Identify 8 levers and other parts to the tractor																				
Preform a pre-start check																				
Modify clothing and hair (if need be)																				
Mount the tractor on the correct side																				
Prepare the tractor for starting																				
Perform a cold start																				
Perform a hot start																				
Wear protective safety gear																				
Select the correct gear and move off smoothly																				
Follow hand given instructions																				
Accelerate when given instructions																				
Stop the forward movement of the tractor instantly																				
Reverse the tractor																				
Park the tractor safely																				
Turn off the engine																				
Dismount correctly																				
Act in a safe manner at all times																				
Engage and disengage the PTO																				
Slash a strip around a paddock																				
Select the correct revs																				
Use the diff. lock																				
Complete a weekly maintenance check																				
State the dangers when working on a slope																				
Park a tractor on a forward slope																				

Advanced Tractor Test

Page 2 **Class.....** **Feb.98**

Colo High School.

Name / Skill																				
Park a tractor on a backward slope																				
Drive forward from a stationary position when parked on a backward slope																				
Connect a 3 point linkage implement																				
Connect a PTO operated implement to a tractor																				
Operate a slasher (or other implement) in a paddock with the correct amount of overlap and at the correct gearing / revs																				
Perform a "clover leaf" turn with a slasher (or other implement)																				
Back a trailer through a set of obstacles																				
Operate a tractor fitted with a loaded trailer																				
Date Achieved																				

HAND SIGNALS

Source John Deere



Start The Engine. Move Arm In A Circle At Waist Level, As Though You Were Cranking An Engine.



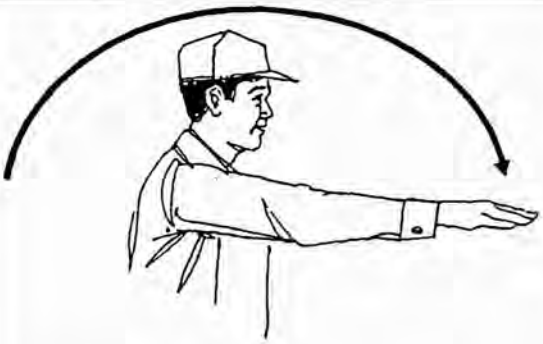
Stop The Engine. Move Your Right Arm Across Your Neck From Left To Right In A "Throat-Cutting" Motion.



Come To Me. (May Mean "Come Help Me" In An Emergency.) Raise Arm Straight. Up, Palm To The Front, Move Arm Around In A Large Circle.



Move Toward Me - Follow Me. Look Toward Person Or Vehicle You Want Moved. Hold One Hand In Front Of You, Palm Facing You, And Move Your Forearm Back And Forth.



Move Out — Take Off. Face Desired Direction Of Movement. Extend Arm Straight Out Behind You, Then Swing It Overhead And Forward Until It's Straight Out In Front Of You With The Palm Down.



Speed It Up. Clenching Your Fist. Bend Your Arm So Your Hand Is Shoulder Level. Thrust Arm Rapidly Straight Up And Down Several Times.



Slow It Down. Extend Arm Straight At Out To The Side, Palm Down. Keeping Arm Straight, Move It Up And Down Several Times.



Raise Equipment. Point Upward With Forefinger, While Making A Circle At Head Level With Your Hand



Lower Equipment. Point Toward The Ground With The Forefinger Of One Hand, While Moving The Hand In A Circle.



This Far To Go. Put Hands In Front Of Face, Palms Facing Each Other. Move Hands Together Or Farther Apart To Indicate How Far To Go.



Stop. Raise Arm Straight Up, Palm To The Front

HSC AGRICULTURE ASSESSMENT TASK
BEEF MARKETING IN AUSTRALIA

Date issued: _____

Date due: _____

Marks allocated: **25 marks**

Weighting: **20%**

Syllabus Area: **9.2 Farm/Product Study**

For this assessment task you will be required to submit evidence from this project regarding your progress towards achievement of the following outcomes:

H3.1 assesses the general business principles and decision-making processes involved in sustainable farm management and marketing of farm products

H3.2 critically assesses the marketing of a plant OR animal product

H3.3 critically examines the technologies and technological innovations employed in the production and marketing of agricultural products

H4.1 applies appropriate experimental techniques, technologies, research methods and data presentation and analysis in relation to agricultural problems and situations

H5.1 evaluates the impact of innovation, ethics and current issues on Australian agricultural systems.

Task Description:

Students will work individually and present a written report (of no more than 6 written or typed pages) that will be supported by a short seminar presentation, with the class and teacher being the audience.

Part 1: Written Report:
Each student will be allocated a different market specification category for the beef industry. Your category will be drawn from the following;

- Local trade (butcher)
- Supermarket
- European union
- Japanese Grassfed
- Japanese Grainfed
- Korea
- US manufacturing

Your research based written report should cover the following areas:

- The importance of a producer having a knowledge and understanding of the interaction between the farm and the market for the final product. Provide an overview of the general marketing options available to the beef producer and how management may impact on the choice of market to target.
- Quality criteria and market specifications for the product in relation to your chosen/allocated market.
- A diagram or flow-chart illustrating the typical steps in the marketing chain for the market you are researching.
- Levels of production and market prices for this market over recent years.
- The role of advertising and promotion in relation to this market.
- Types of problems that producers may face in meeting these market specifications.
- The ways in which Government may intervene in the marketing process for this particular market that you are studying.

Assessment Criteria:

Your written report will receive marks allocated toward the following;

- *Evidence of current research from a number of sources, including a bibliography and sources for any tables and diagrams and quality of a clear and concise presentation of your report.*

- *A critical assessment of the variety of marketing options available to a beef producer and how farm management decisions impact on the final market for a the product.*

- *Accuracy of information relating to a specific market you have been allocated, in terms of specifications, quality criteria for the product and steps in the marketing chain.*

- *Information on production levels, prices, advertising and promotion being supported by figures and/or examples where appropriate.*

- *Use of specific examples and demonstrated understanding of the problems producers may have in meeting market requirements with suggestions of how these may be avoided or overcome by careful management.*

- *A number of ways Governments may intervene with ONE of these explained in more detail.*

Part 2: Seminar presentation:

Each student will prepare a 5 minute oral presentation on an area that relates to the marketing of beef. You may choose to support your talk with some form of visual aids (overheads, pictures, diagrams, whiteboard etc).

You must also produce a ONE typed/word processed page information sheet that will be distributed to class members. A scaffold has been included that may assist you in your preparation of this sheet. You will be required to submit your rough research notes at the time of your talk. (these will not be marked but will need to show evidence that you have accessed at least one website for some of your information).

The areas available for seminars are:

- MSA Meat Standards Authority
- CALM Computer Aided Livestock Marketing
- Ausmeat
- Cattlecare
- LEAP Livestock Export Accreditation Program
- AMC Australian Meat Council
- MLA Meat and Livestock Authority
- National Livestock Reporting Service
- AMPC Australian Meat Processor Corporation

Your research based seminar should cover the following areas:

- The *general* role of the organisation and its history
- The *specific* role of the body in the marketing of beef.
- The importance of the body to the beef producer.
- Present and recent initiatives of the organisation with respect to the marketing of beef.
- Any future directions or projects that are planned by the organisation.
- Your own personal assessment of the importance of the organisation in the marketing of beef.

Assessment Criteria:

Your oral presentation and information sheet will receive marks allocated toward the following;

- *Evidence of current research from a number of sources, which must include at least one website.*
- *Clarity in delivery of the presentation in terms of use of voice, use of visual aids, posture and awareness of audience and their level of understanding.*
- *Appropriate use of time in terms of adequate content coverage and your associated understanding of the subject matter you are presenting.*
- *Clear evidence of and/or reasons to justify your assessment of the role of the organisation in the marketing of beef.*
- *Appropriate summary of information on a typed, clearly presented, single paged information sheet for distribution to class members.*

RESOURCES AND REFERENCES FOR BEEF MARKETING ASSESSMENT TASK.

The following are provided to you in order to assist your research for both parts of the assessment task. You are encouraged to explore other areas and resources associated with you particular focus areas in the task. While most organisations have a website address, it should be remembered that there may also be a number of other publications that may be mentioned on the website, that may be able to be obtained by your librarian or teacher.

Remember that you must provide a bibliography in you report, so you should record all sources you use as you conduct your research, including any website URL's that you use.

Search Engines:

- A useful Agriculture specific Search Engine *(called Agsearch)* to use can be found at www.mla.com.au/mis/search.cfm
- A good general search engine is Google and can be found at www.google.com

Other sites of interest:

- **GENERAL GOVERNMENT AGRICULTURAL SITES:**

AFFA - www.affa.gov.au (Commonwealth Agriculture Fisheries and Forestry: good for latest export figures and links to ABARE)
AMSA - www.amsa.gov.au (Meat Standards Authority)
AQIS - www.aqis.gov.au (Quarantine issues)
AQIS - www.affa.gov.au/aqis
NSW Agriculture – www.agric.nsw.gov.au
QLD Agriculture – www.dpi.qld.gov.au
VIC Agriculture – www.nre.vic.gov.au
NT Agriculture – www.nt.gov.au/dpif

- **AUSTRALIAN BEEF INDUSTRY RELATED SITES:**

AMC - www.amc.asn.au (Australian Meat Council)
AMPC - www.ampc.com.au (Australian Meat Processor Corporation)
AUS-MEAT - www.ausmeat.com.au
Australian Meat Council (AMC) - www.amc.asn.au
Breedplan - breedplan.une.edu.au
Cattle Council (CCA) - www.farmwide.com.au
CATTLECARE - www.ausmeat.com.au
Computer Aided Livestock Marketing (CALM) - www.calmservices.com.au
Elders - www.elders.com.au (good for market specifications and graphs)
Intensive Livestock Environmental Management Services - www.dpi.qld.gov.au
LEAP - www.ausmeat.com.au
MSA - msa.une.edu.au (Meat Standards Australia)
MLA – www.mla.com.au (Meat and Livestock Australia)
National Livestock Reporting Service (NLRS) - www.meat.nsw.gov.au
NFF - www.nff.org.au
NMA - www.magna.com.au

➢ OTHER AUSTRALIAN INFORMATION

AFFA statistics - www.affa.gov.au
AgInfo Co-Products Bureau - www.aginfo.aust.com
Farmwide - www.farmwide.com.au

➢ OVERSEAS STATISTICS AND INFORMATION:

Japanese Statistics Bureau - www.stat.go.jp
British Meat information - www.meatmatters.com
EuroStat - europa.eu.int
MLC (UK) - www.bized.ac.uk
US Department of Agriculture - www.usda.gov
US Beef Statistics - www.beef.org
US Food Safety Inspection Service - www.fsis.usda

➢ GENERAL AND INTERNATIONAL INFORMATION:

AgriLinks - www.agrilinks.com
Commodity Prices - www.cme.com
Food and Agricultural Organisation of the United Nations - www.fao.org
General information - www.agro.com.au
World Factbook - www.odci.gov

➢ OTHER USEFUL LINKS:

Frequently asked questions regarding meat quality, appearance and science – www.meat.tamu.edu
Environmental Issues - www.agric.nsw.gov.au
Research Groups - www.csiro.au/
www.dpi.qld.gov.au
Halal Slaughter - www.grandin.com
Hide classification - www.widget.com.au

OTHER TYPES OF INFORMATION: (please add your own references here)

- NSW Department of Agriculture Publications (based at Tamworth Crop Improvement Centre, Calala lane Tamworth).
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-
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BEEF MARKETING SEMINAR INFORMATION SHEET SCAFFOLD

This sheet is to assist you in the preparation of your typed information sheet. You may use it to prepare rough notes. All students are requested to prepare their 1 page, typed information sheets in the same format as this scaffold to allow consistency among the class.

NAME OF ORGANISATION: _____

GENERAL ROLE AND BRIEF HISTORY OF ORGANISATION:

SPECIFIC ROLE WITH RESPECT TO MARKETING OF BEEF:

CURRENT INITIATIVES IN RELATION TO BEEF MARKETING:

FUTURE DIRECTIONS AND PROJECTS:

IMPORTANCE OF THE ORGANISATION IN MY VIEW:

This information sheet was prepared by:

_____

MARKING GUIDELINES: WRITTEN REPORT

Guidelines	Mark
• Critically assesses a number of marketing options available to beef producers and clearly links these to management decisions that are made on the farm. • Fully describes the specific market specifications for a particular market, encompassing quality criteria for the product and clearly identifies the steps in the marketing chain with the use of a clear diagram or flowchart. • Provides evidence of market prices and production levels over at least the previous 3 years and explains, with examples, how advertising and promotion has been used in this market. • Identifies at least three problems that may face producers in terms of meeting specific market requirements and explains management measures and considerations that allow the producer to minimise the impact of these potential problems. • Describes at least 3 points of Government intervention and gives a detailed account of one of these areas and links it back to effects at the producer level. • Provides a complete and clear bibliography, with evidence of current research from a number of sources. All tables and diagrams have been appropriately referenced.	13-15
• Describes a number of marketing options available to beef producers and makes connections to farm management. • Describes most major market specifications and product quality criteria and includes a diagram or flowchart showing most steps in the marketing chain. • Provides evidence of market prices and production levels over previous years and describes the role of advertising and promotion in this market using examples. • Identifies at least 2 problems that may face producers in terms of meeting specific market requirements. Describes management measures and considerations linked to these. • Identifies at least 2 areas of Government intervention and describes one of these in more detail and attempts to link effects of this back to producer level. • Provides a bibliography with evidence of current research from a number of sources. Most tables and diagrams have been sourced.	10-12
• Outlines some marketing options available to beef producers and makes attempts to link these to farm management. • Describes some market specifications and product quality criteria and includes a diagram or flowchart showing most steps in the marketing chain. • Presents information on market prices and production levels. Outlines some advertising and promotion examples used in the market. • Identifies at least one problem producers may face and attempts to make some connection to management that may overcome this problem. • Describes one area of Government intervention, in some detail and makes some connection to effect at producer level. • Lists some references with some evidence of current research used from more than one source. Tables and diagrams not referenced.	7-9
• Lists some marketing options available to producers • Lists some market specifications and product quality criteria and includes a marketing chain that omits some key steps. • Market prices and production levels are incomplete or unclear. At least one advertising or promotion example is outlined. • Generalised description of problems faced by producers not clearly linked to meeting market requirements and management decisions. • Generalised outline of Government intervention with limited link to producer level. • Lists some references with no evidence of current research used. Only one source may have been used. Tables and diagrams not referenced.	4-6
• Lists few marketing options available to producers but does not link to management decisions made by the producer. • Gives few or no specific market requirements and no marketing chain is given. • No evidence of market price or production levels and little or no description of advertising and promotion in the market. • Elementary outline of problems and limited expression of link to management. • Elementary or no mention of Government intervention. No evidence of effects on producer. • No evidence of bibliography and current research sources.	1-3

MARKING GUIDELINES: SEMINAR PRESENTATION

Guidelines	Mark
• Provides evidence of current research from a number of sources including one website and supplies a clear and concise single page, typed information sheet for class members. • Uses appropriate support materials to aid oral presentation with clear use of voice, appropriate posture and is conscious of the audience and their level of understanding. Full 5 minutes is used to convey information. • Describes the general role of the organisation, clearly identifies the specific role in the beef industry and to the producer. Outlines a number of recent initiatives of the body and describes the future directions in terms of industry development. • Highly developed personal assessment of the body, which indicates a thorough understanding of the body and its role in the industry.	9-10
• Provides evidence of current research from a number of sources including one website and supplies a single page, typed information sheet for class members. • Clear use of voice, appropriate posture. Information presented may be too complex for audience understanding. Support materials may be superficial to the presentation. Most of time is used or runs a little over time. • States the general role of the organisation and clearly identifies the specific role in the beef industry and to the producer. Outlines some recent initiatives of the body and gives a general account of future directions in terms of industry development. • Well developed personal assessment of the body, which indicates a good understanding of the body and its role in the industry.	6-8
• Little or no evidence of current research from limited sources. Information sheet is poorly presented and limited in appropriate content. • Presentation is sound, however use of voice and posture may, at times, be inappropriate. Audience remains engaged for most of the seminar. May not make full use of allocated time. • Provides a brief overview of the body, with little specific link to the beef industry and producer. Generalised, if any, outline of future directions. • Provides a personal assessment of the body, without adequate supporting arguments in terms of an industry perspective.	3-5
• No evidence of current research with no information sheet for the audience. • Oral presentation fails to engage audience due to unclear voice or simply reading information. No use of appropriate support materials. Fails to make best use of allocated time. • Elementary level of information presented about the body in a very generalised way. No attempt to outline future directions of the industry. • Limited expression personal assessment due to a lack of understanding of the role of the body in the beef industry.	1-2

Note: A guest teacher or panel of teachers may assess this component of the assessment task. The teacher or teachers involved may not need to be associated with the subject area, however they would need to be made well aware of the marking guidelines prior to the seminar presentation.

STUDENT FEEDBACK SHEET.

Beef Marketing In Australia Assessment Task.

Student Name: _____ **Class:** _____

ASSESSMENT TASK RESULTS:

Part 1: Written Component: /15
Part 2: Seminar Presentation /10

TOTAL [ ] **/25**

Marks have been allocated using the holistic marking guidelines that have been issued. It should be noted that these are guidelines only and it is not necessary for students to meet all points listed in each mark range. This is a general overview of what students produced in these ranges. Your teacher has developed and used a specific marking scheme related to these guidelines.

It is also important to note that the assessment task and marking guidelines have been linked to the following 2 Unit Agriculture HSC course outcomes.

H3.1	*assesses the general business principles and decision-making processes involved in sustainable farm management and marketing of farm products*
H3.2	*critically assesses the marketing of a plant OR animal product*
H3.3	*critically examines the technologies and technological innovations employed in the production and marketing of agricultural products*
H4.1	*applies appropriate experimental techniques, technologies, research methods and data presentation and analysis in relation to agricultural problems and situations*
H5.1	*evaluates the impact of innovation, ethics and current issues on Australian agricultural systems.*

Based on your performance in this assessment task, you have demonstrated the following performance with respect to the achievement of these outcomes.

Outcome	Mastering	Consolidating	Developing	Not achieving
H3.1				
H3.2				
H3.3				
H4.1				
H5.1				

It should be remembered some or all of these outcomes may be assessed in future tasks. You should work toward improving your performance in respect of these areas of the course. Talk with your class teacher for more specific feedback in relation to your task performance.

OPTIONAL TEACHER COMMENT:

Class Teacher: .....

Minutes of the State Agricultural Advisory Group

The following are selected minutes of the State Agricultural Advisory Group. This is an advisory group that has been formed as an initiative of DET to advise and make recommendations to the Schools Financial Support Unit and Properties Directorate.

The school members on this advisory group are:

- John Scott - Chairperson - Principal Crookwell High School
- Peter Jones - Executive Officer - Chifley College, Mt. Druitt Campus
- Phil Hurst Hawkesbury High School
- Craig O'Brien Moss Vale High School
- Phil Amour Yass High School

NSW Dept. Education and Training
State Agricultural Advisory Group

Minutes of the meeting held on the 30th November 2000 at Bridge St. Sydney

Present: Jim White Guyra Central School), Peter Jones (Chifley College -Mt. Druitt Campus), Phil Armour (Yass High School), Phil Hurst (Hawkesbury High School), Craig O'Brien (Moss Vale High School), Gary Key and Ian Gillespie (School's Financial Support Unit), David Cooke (Properties Directorate) and guest Lyndall Foster (CEO TAS Curriculum Support Directorate)

Apologies: Barbara Soiland (School's Financial Support Unit)

Corrections: Nil

Business Arising

Both the School's Financial Support Unit delegates and Properties delegate are reviewing what tasks they actually completed as recommended to them by this Advisory Group. Refer to the minutes of the meeting October 1999.

Correspondence In

52 individual high schools made contact with the SAAG over the year. Most of the correspondence was linked to damage to or wearing out of machinery.

Letters are being sent to schools from Properties Directorate informing the school that it is the school's responsibility to make sure all machinery is safe. The School's Financial Support Unit provides money to each school for this exact purpose. (refer to the Machinery Grant information following)

Deleted from this copy of the minutes is the information from individual schools and suggested responses to go back to schools

Correspondence Out

A fax from Peter Jones (on behalf of the SAAG) to Jim Mather wishing him all the best on his retirement and thanking him for all his hard work

Grant Allocations

a) Seed, Fuel and Fertiliser Grant (Stores Allocation)

Barbara Soiland informed the meeting that $284 000 was available to fund this grant from the School's Financial Support Unit. .

Phil Hurst tabled a draft document that he had worked on using information supplied by schools. This document was discussed at length.

Based on the draft figures one point will be worth $1.103

Motion from the meeting: it is proposed that those schools who did not return their survey form will not be allocated money for the seed fuel and fertiliser grant and only the basic $250 for the machinery maintenance grant. Passed.

These schools are: , Brewarrina, Chifley College Whalan Campus, Erskine Park, Mungindi Central, Sth. Grafton, Taree High, Tullamore, Walgett, Wyong.

b) Machinery Maintenance Grant

Barbara Soiland informed the meeting that $118 000 was available to fund this grant from the School's Financial Support Unit.

The advisory group recommended that the funding for small, medium and big schools remain the same as last year ie small schools will be allocated $250, medium schools will be allocated $450 and large schools will be allocated $600.

Phil Hurst tabled a draft document that he had worked on using information supplied by schools. This document was discussed at length and adopted by the advisory group.

Tractor Replacement Program

David Cooke (Properties Directorate) expressed the following concerns:

i) value for money was not happening as some schools which received new tractors were not able to efficiently use them due to small paddock sizes. Some of these tractors are only used for grounds maintenance.
What are the sizes of the school farms ?

ii) age of machine is only one parameter used to decide replacement order. What other criteria could be used ? eg size of school farm. The goal is to get the tractors to schools that have the greatest need first.

iii) safety is of concern when teachers are instructing off the ground. "Walking behind the tractor is silly". Also noise is a problem. Students need to wear ear muffs but how will they hear the instructions.

iv) what is the role of the tractor on a school farm ....safety instructions or running a commercial enterprise?

v) what qualifications do teachers have to enable them to instruct students on safe tractor usage?

Discussion took place on all of the points listed. Answers to the issues raised (in order of David's presentation)

i) The area allocated to teach agriculture varies greatly and often depends upon the original size of the school site purchased by the Department. The largest school farm is at

Cobar High whilst one of the smallest is at Windsor High. Often the teacher of agriculture will be able to use land that is poorly utilised by the rest of the school and hence increase the area used in the teaching and learning of Agriculture. eg Colo High which has almost doubled the area allocated in the original departmental plans.

ii) Much discussion had already taken place during earlier meetings on the point of how the decision is to be made as to criteria used to decide the replacement order for tractors. The possible criteria discussed:

- age of the machine
- condition of the machine
- size of the school farm
- hours showing on the hour meter
- location of the school (country vs city)

(refer to the minutes of the meeting 10th November 1997 part of which is listed below)

"it has been decided that the criteria for replacement is as follows;
Priority 1 - dangerous equipment
Priority 2 - purchase date (oldest tractors to be replaced first)
Priority 3 - tractors with high usage rates"

Motion from the meeting: It was agreed that the criteria used to determine the order of replacement remain the same. Passed.
"Every school with Agriculture in its curriculum should have the ability to use a tractor whilst giving instruction on safe machinery usage irrelevant of the size of the school farm."
An updated replacement list is to be developed and attached to the minutes of this meeting

iii) Safety is of concern when walking near tractors. Teachers should be made aware of the chance of third party accidents. Students need to operate the machine in gears and at revs that will limit the need for teachers to come close to the tractor. Kill switches and their role in tractor driving training took place. Students when operating tractors should use ear muffs or ear plugs. When being worn students are still able to hear instructions. Hand signals can also be used.

iv) The primary role of tractors on a school farm is the instruction on the safe use of machinery ie, teaching and learning. A secondary role is the growing of crops and pastures (also of teaching and learning). The creation of money as an outcome from the growing of crops and the raising of animals is a side benefit which is open used to purchase replacement animals and fund developments on the school farm

v) Teacher training linked to safe tractor operation and instruction is being looked at the moment by the Department. Approximately 140 teachers across the State are trained to teach Primary Industries. They are at the instructor level. Farm assistants and general assistants are also about to undergo training.

Motion from the meeting : This meeting of the State Agricultural Advisory Group requests that the Department set up an inspectorial system using an agriculturally trained officer, or their representative, look at the size of every school farm in the State, the machinery that is being used, its condition and its hours of use. This information would then be fed back to Properties Directorate. Passed

David Cooke informed the Group that money is available for tractor replacement and that this money will need to be spent before the end of June 2001. The object is to get the money to the right schools. He also informed the Group that the intention was to fill the gaps that were created by the last tractor allocation.

Lyndall Foster (CEO TAS Curriculum Support Directorate) raised the following issues:

i) there are now no tractors on contract

ii) there is no appropriate advice to schools as to what is desirable for tractors that are used on school farms

Lyndall asked this Group to put together a list of recommendations based on tractor specifications suitable for use on school farms. This would then be passed to DPWS for possible inclusion on a contracts list.

Any school who purchases a tractor outside of the contacts list would need to do a risk assessment.

Proposed Minimum Requirements for the Purchase of Tractors that are to be used for the teaching and learning of Agriculture and Primary Industries

1. Preferably new or the current model with safety guards in place and manufacturers warranty current.
2. Tractors should be no larger than 18kW (approx. 25 HP) enabling safe and effective instruction.
3. Tractors can be used as only per its manual
4. There needs to be reasonable access to maintenance

This information is to be passed to Lyndall and David Cooke for comment

General Business

1. The meeting proposed a vote of thanks to Jim Mather for all the hard work he did for the Group.

2. Craig O'Brien proposed a vote of thanks for all the hard work Phil Hurst and Peter Jones had done collecting and analysing data prior to this meeting

3. Phil Hurst tabled a document from Case tractors and the possibility of schools leasing them. This information was passed to David Cooke for further discussion by Properties Directorate.

4.**Motion from the meeting :** A letter be sent to all schools teaching Agriculture and / or Primary Industries by Properties Directorate informing them :

a) that it is only the designated "agricultural tractor" that is being considered for replacement.

b) schools are responsible for the replacement of all other machinery other than the "agricultural tractor"

c) informing the school as to what is the "agricultural tractor"

d) their responsibility to make sure all machinery is safe

e) schools have the ability to consolidate and upgrade existing machinery at any time.

f) money is allocated each year to schools by the School's Financial Support Unit for the maintenance of machinery.

Next Meeting Date

The next meeting of the full SAAG will be in the first weeks of term 4 2001.

Appendix 1

A letter to be sent out to all schools that have agriculture in their curriculum by properties directorate.

To the Principal

Re Agricultural Tractor Replacement Program

Properties directorate has asked the State Agricultural Advisory Group to assist in the determination of guidelines for the replacement of agricultural tractors. Please note the guidelines for replacement of tractors are currently under review by the department.

In answer to inquires about general agricultural equipment and its replacement the following points apply:

i) This equipment is specifically for the teaching and learning in Agriculture and Primary Industries

ii) Tractors used for the maintenance of school grounds are not under consideration for replacement by the Advisory Group.

iii) Where schools have more than one tractor used in the teaching of Agriculture and Primary Industries the Advisory Group has identified the tractor which will be considered for replacement. This information has been derived from Properties Directorate records based on the 1997 schools machinery survey as well as using information gathered from Part C of the yearly Schools Agricultural Survey where individual schools were asked to notify changes in machinery.

iv) the State Advisory Group has determined that your school's "agricultural tractor" is +++++++++ mail merge make and model+++++++ Its year of manufacture was +++ mail merge year of manufacture+++.

v) the statewide replacement program was based on the supply of a package consisting of enough money to trade in an existing tractor, slasher and PTO rotary hoe and then purchase replacement machinery.

v) The school is responsible for the repair and maintenance of all other tractors, machinery and attachments.

vi) Machinery that is unsafe and beyond economic repair to repair should be disposed of using correct departmental procedures.

vii) Principals may, at anytime, trade in existing machinery and update. The meeting of any monetary shortfall during this action will need be met by the individual school Correct departmental guidelines need to be followed.

Please note schools are allocated money each year by the Schools Financial Support Unit for the specific purpose of the maintenance of agricultural machinery used in the teaching and learning of Agriculture and Primary Industries. it is expected that this money be used to keep all agricultural equipment in safe working order.

What's new at the Powerhouse

-an exhibition to change the way your students look at the world!

EcoLogic: creating a sustainable future
EcoLogic is a new permanent gallery at the Powerhouse Museum. It explores people's interaction with the Earth, showing how we can create a sustainable future through changes to our lifestyles and industries including farming.

The Powerhouse is an ideal institution to explore the impacts of human endeavour, and to introduce new philosophies, materials, technologies and systems that will bring us into closer harmony with each other, and our natural support systems.

EcoLogic has all the hallmarks of a Powerhouse Museum exhibition- highly interactive and visual with a wealth of objects to cleverly illustrate a wide variety of concepts relevant to Agricultural Studies. One section of the exhibition is called 'Feeding the Nation'. This section looks at the interaction of water, soil and biodiversity, and raises the issue that, in many parts of Australia, current farming practices may no longer be viable. The exhibition explores new farming systems that are compatible with the landscape and its ecosystems. The role of governments working together with individuals and communities is highlighted.

Overview
EcoLogic will give your students a thorough understanding of the broad concept of sustainability—a focus area in the 7-10 syllabus, a feature of the HSC course in Plant/Animal Production and as a possible elective. Other highlights include:

Processes
Designing solutions to problems, including agricultural systems, is a feature of the exhibition. For example, the system being developed by the CSIRO Division of Land and Water featured in the exhibition shows a system that concentrates and uses salty water from the Murrumbidgee Irrigation Area to sequentially irrigate three different crops and eventually retrieve the salt. Dynamic Lifter shows how lateral thinking converted waste materials of the poultry industry into the raw materials of another industry.

EcoLogic explores use of technologies both modern and historical including those used in rural Australia. Students can view a model of the famous Stump Jump Plough and reassess its value in

light of our existing environmental problems. The stump-jump plough has been lauded as a great Australian innovation. Its ploughshares ride up over submerged tree roots without breaking. In 1876 the plough seemed perfect for opening up South Australia's tough mallee country for wheat farms. Unfortunately, as a result, much of that land is now a salty desert. The soil and water systems weren't suitable for intensive cultivation.

Perspectives

The exhibition beautifully illustrates different 'text' types and communication strategies in describing a complex and relevant topic.

Audiovisuals produced exclusively for this exhibition include:

- 'How salinity occurs'- live footage and animation explains how dryland salinity occurs in this country from 'deep' time to now. It also illustrates the implications of salinity.
- Interviews with Boorowa farmer David Marsh and children from Binalong Public School.

EcoLogic provides applications of the Community, Environmental and Historical perspectives in resource use including land use management. Groups such as Landcare and Streamwatch are featured. Historic photographs from the Museum's own Kerry collection of glass plate negatives contrast history's heroic battle to subdue the land with that of today's farmers to save it.

This exhibition opens up an entire new way of looking at the world. The fashionable platypus fur muff and feathered hats of the 1900s now can be reflected upon to show society's changing relationship with the natural world. When the Museum was established in 1880, part of its mandate was to investigate how the natural resources of the country could be used. Since then, curators have collected and exhibited examples of innovation in industry. The technologies involved in farming, water management, fishing and forestry formed the basis of the Museum's original collection and are represented by thousands of objects. Today's collection houses a comprehensive record of every-day life in Australia over the last 100 years, and modern examples of innovation in Australian industry.

EcoLogic profiles industries and individuals who are changing the way things are done. MEC-Kambrook makes kettles designed for easy disassembly and recycling. And the latest household appliances strut their stuff, demonstrating that good design is more than 'skin deep' as the need for energy and water efficiency become increasingly important. The exhibition reviews every-day objects in terms of their production, consumption and impact on the environment.

For the younger students

The entire exhibition has objects (large and tiny) to stimulate the imagination of young children and includes things to touch and interactives to explore. There is also a special playspace for students in Kindergarten to Year 2 and a biodiversity 'arcade' featuring original collages from 'Rosie Dock'—a children's book by the renowned artist Jeannie Baker.

Support for your teaching

Before visiting the Museum teachers will receive a comprehensive set of teachers notes containing background information, pre- and post-visit activities and information on the exhibition web site. To complement the visit an interactive activity based in the museum can be booked. There are also regular staff talks and activities in the exhibition as part of the 'Museum Live' program.

Educational programs

- Science shows. Commencing term 4, 2001.
- The EcoLogic theme week of study days, lectures, programs and activities for primary and secondary students. 30 October until the 2 November 2001.
- Sustainable games. From term 4 October 2001

Professional development

- Teachers review
  Teachers are invited to attend a special educational review of EcoLogic on 16 August from 4.30pm. Bookings essential

- 'Teaching environmental education in a sustainable framework'-a workshop Saturday 3 November 2001. Bookings essential. Additional charge will apply.

Want to know more?

Booking is essential for all booked education groups. Our booking staff will help you make the most of your excursion to the Museum

Telephone: 02 92170222 Fax: 02 92170441
Email: edserv@phm.gov.au
EcoLogic: creating a sustainable future opens 2 August. Principal Sponsor Holden Ltd.





SCHOOL AGRICULTURE DISPLAY AT CASTLE HILL SHOW

For 21 years there has been a display of school work at the Castle Hill Show. In recent years this display had been presented by teachers and students of high schools that teach Agriculture. In the 2001 Show displays were presented by Cherrybrook T.H.S., Galston H.S., Menai H.S., Model Farms H.S., Muirfield H.S., Northholm Grammar, Northmead H.S. and Plumpton H.S. and each case the teachers and students put in a big effort a produced a marvellous exhibit.

Participation in this exhibition allows students to develop team work, solve problems, present themselves and their work to outsiders, develop a greater understanding of their subject matter, become better communicators, manage time and select appropriate technology. The University of Western Sydney Hawkesbury has provided a trophy to be presented each year to the school which presents a display that best demonstrates the development of these skills. The trophy has been won by Muirfield H.S., Plumpton H.S. and Northholm Grammar. In each case the standard of all the exhibits was of a high order and is improving each year.

Until 2001 the Schools display has been housed in a Marquee. As part of the celebration of 20 years of exhibits, the Minister for Education and Training the Hon. John Aquilina, provided a grant to the Show Society of $30,000 which will soon provide a permanent building on the main part of the showground. This will give the display a better exposure and give it a sense of permanence.

The display is proving very popular with visitors to the show. Particularly those with young children because they get the chance to see and touch and discuss things with some very keen secondary students. This effort by the schools involved is doing a lot to bridge the gap between the city and rural Australia.

David Rawlinson



Correspondence

Peter Osterloh, from Bomaderry High School, requested this letter be published in BAAT. It raises concerns about the inequity of class sizes across the TAS KLA, and, probably more importantly, draws attention to the OH&S involved in coping with a class of 30 students in a typical Agriculture Class. He has included an excerpt from "Animals in Schools", a Departmental Document, to support his argument.

It would be interesting to hear of other OH&S concerns relating to large class sizes or other Ag Teachers' views relating to this issue.

9 May 2001

Occupational Health and Safety Committee
Bomaderry High School

It has reached a point in time where the current class size maximum of 30 in Agriculture is no longer safe, nor educationally sound for both staff and students.

In recent years we have been witness to a plethora of departmental reforms and policies with legislative requirements that directly impact on the classroom teacher and student.

It was the mid eighties (1985) when the issue of class sizes in Agriculture was last canvassed. It still remains at 30 maximum. In the sixteen years since, we have had the following changes/policy reforms implemented in schools:

1. New Junior Ag Syllabus 1997
2. New Senior Ag Syllabus 2000
3. Design and Technology Years 7 and 8
4. Creation of KLA's (Agriculture with TAS)
5. Child Protection
6. OH & S
7. Student Welfare Document
8. Good Discipline and Effective Learning Document 1995
9. Chemical Safety 2001
10. Animals in Schools 2001
11. Executive restructure. Leading Teachers. Second Deputy Principals.

With the focus clearly on OH & S in the work place, it is interesting to note the Department's own OH & S objectives.

1. "To prevent work related injury, illness and disease and to ensure the health and safety of others on school premises.
2. "The Department of Education is committed to fostering an environment for staff and students which is appropriate to their physical and psychological needs, contributes to their well being and conducive to working and learning."

I don't believe it is possible to achieve these objectives without putting at risk both health and safety of staff and students.

The Junior Agriculture Syllabus, Stage *4* and 5, clearly states the following skills outcomes.

10.11 Follow safety and hygiene instructions when using tools, chemicals, equipment or agricultural machinery under supervision and in accordance with OH & S requirements.

6.2 Perform routine animal husbandry techniques in accordance with codes of practice.

From the (CSIS) document released in April 2001, the main objective is 'For the correct use of chemicals in schools safety is paramount'. With specific concern to Agriculture students, it is interesting to note Appendage A. Vol 1, p 91, that for the chemical super phosphate the following statement is made:

Users

K-12 'Its usage requires students to wear gloves, as it may irritate eyes and skin when handled'.

Also noted for the use of the herbicide Zero.

7-12 For Zero - use eye and skin protection.

The enforcement of these guidelines for usage is compounded purely from the position of class size. The associated problems of pupil management whether it be organisation of student activities or discipline problems are magnified with large class sizes on the school farm. The safety and health issues can be most difficult to monitor in this situation when students are working with potentially harmful chemicals. Super phosphate fertilizer is one chemical that students do apply to their crops. The use of other equipment such as tractors, rotary hoes or garden tools can be equally hazardous.

The nature of some practical activities in themselves can be unpredictable, for example, handling livestock, in particular larger farm animals such as cattle can give rise to potentially risky situations where animals may break away from the handler.

It is interesting to note that from the *Student Welfare Policy* of 1995 (p 7) that one should:

- provide opportunities for students to demonstrate success in a wide range of activities.

Agriculture certainly provides the scope for such opportunities, but is greatly restricted with class sizes of 30. Also noting from the same document:

- students will be safe in the school environment.
- students will be able to learn without disruption from unruly behaviour.

In Agriculture classes we are confronted with some very challenging students, behaviour wise, who at the same time respond well in a practical environment. They can achieve, but their unruly behaviour can be the distraction which puts at risk the teacher and other students. Thus the environment is no longer safe for effective learning.

From the *Good Discipline and Effective Learning Policy* 1995 (p 4), the following statement is made:

"An effective class room should be a place of excitement, exploration, scholarship and learning."

"Each student's right to learn depends on the capacity of teachers to carry out their professional responsibilities in the class room free of disruption."

The fulfillment of both of these statements is unrealistic under the current class sizes for practical Agriculture lessons. We could be seen as falling short of our professional responsibilities with respect to adequately monitoring safety. Exploration learning becomes limited and scholarship is falling as fast as

literacy and numeracy.

Note: *Child Protection* 1997, p 11, re 'supporting students who have experienced abuse'.

Quote - "Look for ways to strengthen students self confidence. Focus on learning activities which maximise success and positively reinforce the things that students do well."

In our endeavours to teach abused students and to give them the support they need we fail. It is not possible to spend the time with them and give them the care and support that might otherwise be available in smaller class groups. Activities you would like to do become shelved under the weight of classroom management.

In the *Junior Agriculture Syllabus* 1997 it states that, "students should meet a variety of outcomes associated with handling and care of animals in the study of intensive animal enterprises." This activity can be carried out with poultry in schools but requires considerable instruction in the handling of the animal without causing undue stress. This, along with monitoring of student hygiene, becomes an onerous task with 30 students.

In the *Animals in Schools* document - *Animal Welfare Guidelines for Teachers* 2001 (refer to Part C 'Case Study' - see attached photocopy). This document spells out clearly what teachers ***are*** and ***are not*** allowed to do with a poultry case study scenario. Category 2 activities are permissible ie;

*Handling and restraint of animals
*Measuring of body weight.

In the formulation of KLAs, Agriculture comes under TAS. It is interesting to draw comparisons with class sizes within this KLA in the junior school.

1.	Industrial Arts - Wood Technics/Metal Technics	- 20
2.	Food Technology/Textiles	- 24
3.	Non practical - Tech Drawing	- 24
4.	Years 7 and 8 Design and Technology	- 22
5.	Agriculture	- 30

Agriculture is taught as a context area in Years 7 and 8 Design and Technology with class sizes of 22. However, in Years 9 and 10, which requires higher order practical skills and more demanding classroom management skills, the class size is 30. Even with the most experienced class room teachers, this class size is no longer tenable. Schools have seen the introduction of second deputy principals - this is testament to the challenging demands of student welfare and discipline.

The issue of class size in Agriculture needs to be addressed properly to secure safety and an equitable environment of learning. It needs to be brought into line with class sizes in other TAS subjects. I recommend that 20 should be the limit and 15 in disadvantaged schools.

I request the OH & S Committee of Bomaderry High School to support this case for class size reduction in Agriculture.

Yours faithfully

P. Osterloh

Peter Osterloh
Teacher of Agriculture

Scenario 1

Slaughter and dressing of poultry for sale for human consumption

An agriculture teacher proposes to buy a batch of day-old broiler chicks from a local hatchery. The chicks will then be grown to marketable weight over approximately 8 weeks. During this time the Year 11 students will use the birds to carry out a feeding trial. The senior students will monitor the different growth rates with the different diets. The Years 9 and 10 agriculture students will assist the agriculture teacher to slaughter, dress and package the birds. The birds will then be sold to staff members for their consumption.

The teacher has chosen poultry to work with because it allows the junior students to study an intensive animal enterprise while simultaneously allowing senior students an opportunity to achieve the outcomes of their syllabus. Poultry kept for meat production appears to be an appropriate enterprise for the school because a limited space is required for the birds and they can be grown to market weight within one school term.

Issues

1. Is what the teacher proposes justified? Explain.
2. Does the flowchart in the guidelines allow the teacher to use chickens in the proposed way?
3. If yes, into what category do these activities fall?
4. If no, what option is left for the teacher?
5. Are there any alternatives to any of the proposed activities available for the teacher to use? If so, what are they?
6. How would the teacher ensure that the conditions under which the birds are to be kept comply with the minimum standards determined for the housing of poultry?
7. How can the teacher apply the principles of reduction, replacement and refinement to the planned use of chickens?
8. What dietary variations are permitted to be incorporated into the feeding trial?
9. What advice do the guidelines offer about the slaughter and selling of birds to the staff?

Resolution

1. The Stages 4–5 Agriculture Syllabus requires that students meet a variety of outcomes associated with the handling and care of animals in their study of an intensive animal enterprise.

   The Stage 6 Agriculture Syllabus requires that students meet outcomes associated with:

   - managing and monitoring the growth and development of animals
   - understanding the basic nutritional requirements of a commercially produced animal
   - demonstrating safe handling and management techniques for the care and welfare of animals
   - consumer and market requirements for commercial animal production
   - designing and conducting a simple trial using appropriate methodology within animal welfare guidelines.

   Poultry has been selected as a suitable enterprise to be studied at the school because the Stages 4–5 Agriculture Syllabus requires that students study a balance of extensive and intensive and plant and animal enterprises.

   The teacher may choose poultry production because there is ready access to a poultry supplier and the school has the appropriate facilities for housing and managing the birds.

2. The flowchart does allow the teacher to carry out some parts of this activity. It does not allow the sale of livestock that have been slaughtered, dressed and prepared for sale in facilities other than a licenced abattoir or registered processing facility.

3.

Activity	Category
Restraint and handling	2
Measurement of body weight	2
Measurement of dietary effects (high/normal protein)	3
Slaughter at the school and consequent sale of birds	prohibited activity

4. The teacher must have the birds slaughtered and processed at an abattoir or registered processing facility. The birds can then be sold at the school.
5. If the Stages 4–5 agriculture students are to achieve the outcomes associated with the handling and care of animals in their study of an intensive animal enterprise, then the choice of broiler chickens would seem highly suitable. Therefore there are no alternatives available for the proposed activities, with the exception of the slaughter and processing of the birds. The only alternative for the slaughter and processing of the birds is to send them to a registered processing facility.
6. The food requirements, environment and handling should be in accordance with those described in *Animals in schools: Animal welfare guidelines for teachers*.
7. The teacher can use the principles of reduction, replacement and refinement in the following way:

   Reduction: The batch of chickens should be a number that will be appropriate to the number of students handling the birds, the space available in terms of area and temperature control, and ability to sell the processed birds. This activity should be timed within the teaching programs of the various years of agriculture students to allow the activity to be carried out only once during the school year. This will allow both junior and senior students to participate in the activity without replicating it at another time.

   Replacement: There is no suitable replacement for this activity if students are to achieve the educational outcomes, with the exception of the slaughter and processing, which must be done at a registered processing facility if the birds are to be sold.

   Refinement: The housing of the birds should be refined so that the environment provides the birds with opportunities for dust bathing, scratching and other normal activities.

   The growing of broilers is a suitable activity that itself demonstrates refinement in the use of animals within the teaching program. This is because the management of a batch of broilers allows several groups of students to be involved and the birds need only to be kept for the time of one term, alleviating the problem of care over the holidays.
8. The dietary variations permitted to be incorporated into the feeding regime are high/normal protein, high/normal energy, high/normal fat and palatability.
9. The guidelines provide advice about the slaughter and sale of birds as set out in the Meat Industry Act 1978. Poultry are considered abattoir animals and hence must be killed and processed in a licensed abattoir, if they are to be sold or taken from the property to be consumed.

BAAT Archives

Has anything changed? This article featured in 1985 Edition 1 of BAAT. It is interesting to note, in the light of Peter Osterloh's letter, that nothing seems to have progressed.

AGRICULTURE SPECIAL INTEREST GROUP

The following are a selection of extracts from correspondence of the Federation Special Interest Group in Agriculture. Teachers can attend these meetings (and have their travel expenses subsidised) or become corresponding members (and have notices and reports sent to them) by writing to the contact person, Peter Crick, Windsor High School, Mulgrave Road, McGraths Hill, NSW, *2756.*

REPORT OF DISCUSSIONS WITH THE DEPARTMENT OF EDUCATION 8 November 1984

Present: John Fleming, George Comino

Alan Layt, Cheryl Screech, Col Rennie, Leo Pomeroy.
Katrina Rosa (Marsden Hospital SSP), Sandra Bushell
(Marsden Hospital SSP).

Recommendations from Agricultural Science SIG

Federation requested the Department to ensure that the Committee currently examining the Ancillary staffing formula, would examine the inconsistent way in which Farm Assistants were employed in schools.

Federation then listed the case of relief for Farm Assistants. The Department replied that current provisions laid down that when any Ancillary staff person would be absent for five days or more, relief could be provided from the first day of that absence. Farm Assistants could be relieved over December and January if essential.

The Department is examining the case of relief for Ancillary staff but this is part of the Ancillary staffing provision and no decisions have been made as yet.

COMMITTEES

Agricultural Science Teachers

1. The Special Interest Group would like to know who is going to administer the planned legislation on animal welfare - the Department of Education or Local Government?

Resolve: Endorse. General Secretary to contact Department.

2. This Special Interest Group of agricultural teachers sees the following areas of concern in the employment and use of Farm Assistants.

(a) The inconsistent formula for employing Farm Assistants in schools. This leads to some schools having a much greater access to Farm Assistants than others. The Special Interest Group would like Federation to clarify this issue.

(b) The material entitlements for Farm Assistants include respirators, cartridges, eye goggles and ear muffs.

(c) Farm Assistants are often required for work off the school premises, e.g. delivery of stock, picking-up feed, etc. Difficulty is experienced in doing this because' of lack of travelling allowance and the doubtful position of the Farm Assistant with regard to workers compensation. This Group requests Federation to pursue these issues, so that Farm Assistants are able to carry out tasks which are essential for running an agriculture department, be that at school or some other areas.

(d) This Group would like Federation to pursue the issue of overtime! weekend work for Farm Assistants. Many aspects of agricultural, farm management require attention seven days a week, and this responsibility adds an unnecessary financial and physical burden on teachers of agriculture. At present there are "stock hands" employed in agricultural high schools, who are required to do weekend work as part of their award. We would like to see this concept extended to high schools with agriculture, or the payment of overtime to Farm Assistants, so that weekend/holiday maintenance of farms is assured.

(e) Federation is requested to clarify the working conditions of Farm Assistants, in consultation with the Department and the AWU.

(f) That Federation negotiate with the Department to ensure that Farm Assistants on leave are replaced when they are on leave.

Resolve: Endorse points a) and f). Federation is to initiate discussions with the AWU in relation to points b) to e) as well as points a) and f).

1 November 1984

Mr D Swan
Director-General of Education
Department of Education
GPO Box 33
SYDNEY NSW

Dear Mr Swan

The Teachers Federation Executive has endorsed a proposal from the Agricultural Science Special Interest Group requesting that agricultural science classes be reduced in recognition of their practical nature.

The Agriculture SIG requests that Federation take all necessary steps to have the practical nature of agriculture recognised in terms of class sizes and staffing.

Specifically we assert that -

i class sizes should be limited to a maximum of 15 students and 13 students in disadvantaged schools,
ii that the staffing formula be adjusted to make this possible without affecting staffing in other areas of the school.

Staffing agriculture has traditionally been on the same basis as for non-practical subjects i.e. 30 maximum. This situation has been able to persist because of the relatively small numbers of students electing agriculture in the past.

However, recent years have seen a major increase in the popularity of agriculture, particularly in metropolitan high schools, to the point where agriculture classes often reach the staffing maximum.

This situation is untenable for reasons of:

i education, and
ii safety.

1 Education
The practical content of the agriculture course has been established by the Secondary Schools Board in agriculture junior and senior syllabus. Refer to the sections in the attached syllabi marked with an asterisk. Particularly note students should learn as much as possible through practical experiences.

2 Safety
Large class sizes involved in practical work creates a high level of risk. Due to the high risk of injury, not all students are able to participate in practical activities forcing a rostered situation where only a small number of students can participate in a practical activity at any given time, reducing the effectiveness of teaching.

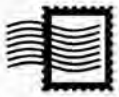
Accidents have occurred in garden plots where large class sizes have reduced space between students using hand tools. Documented accounts are available.

The use of powered machinery, e.g. rotary hoe requires individual instruction.

Yours sincerely

David Gilks
Acting General Secretary

Postcard from the States



Hi yo'all,

Missouri is considered "The South" so, much of the local language is southern, but no where near as slowly spoken as those from Louisiana! Life here is very relaxed and we are enjoying our trips and the simple life here. My garden looks wonderful: I have time to work in it properly! Not much point trying to do a vegie garden- we back onto a wood. So far, my lettuce has been eaten by deer; the squirrels don't like my digging, so they re-mark their territory by squashing all my seedlings; and apparently, the raccoons eat the tomatoes and other fruits. Then there are the bugs! Ironically, we have a plague of Army worms infesting the area- the local hay making industry is ruined. I have one small crop of spuds as they don't know how to grow a decent spud!

Agriculturally speaking the year hasn't gone very well. Storms and floods have knocked out the wheat crop in the North and drought has caused problems in the South. Hopefully, if things go well in Australia, the wheat export market will be very successful. I now totally understand the big push for the Aussie lamb into the States. It is so protected here that the prices are ridiculously high, $US42 for a leg of lamb, that's about $AU84! The problem is nobody buys it and they say "how do you cook it?" So few people around here buy it (only the foreigners like us) that they serve it at the deli at the supermarket and the server tells the next Aussie or Kiwi about the previous purchase! We really need to bust into this market and promote our lean lamb. I'm not sure what is being said in Australia regarding the trade, there is very little news here. All I know is that America can play dirty when making deals. The biggest problem here is that there is little or no regulation and that so many groups are responsible for doing one thing, it is difficult to know who is in charge and what their role is. Parts of the beef industry have it worked out. Lots of promotion and Angus Certified Beef in the supermarkets. Angus are very popular in this region, which is good to see (I'm a little biased!).

The change in the seasons is so marked and spring is beautiful. We are surrounded by dense green woods and lots of wildlife. We have a hummingbird feeder that draws lots of lovely coloured, tiny birds to feed outside our window. We are in a tornado area and often get warnings. There was one that touched down about half and hour from here last night. This is a wonderful experience would encourage anybody to take the chance to live in another country. Aussies are so popular due to the Olympics and Surviour!

Cheers Sheree Bourke

What Our Students are up to....

Fleece judge no bushie

By EMMA DOWNEY

BEING city born and bred was no obstacle to Belinda Fairbrother winning the 2001 Royal Agricultural Society/Agricultural Societies Council Merino fleece State judging final at Sydney.

Belinda, 18, comes from Illawong in southern Sydney and completed Year 12 at Menai High School last year. She has since started an environmental science degree at Sydney University.

Belinda was one of 17 to make the State final by qualifying at one of a round of group judging finals conducted by the Agricultural Societies Council.

Competitors were required to judge four Merino fleeces under the skilled eye of over-judge, Andrew Blanch, managing director of New England Wool and a member of the broad-ribbon-winning Blanch superfine Merino breeding family from Westvale stud, Wollun.



Belinda Fairbrother, of Illawong, was delighted to win the RAS/ASC Merino fleece State judging final.

Belinda moved straight to the national final, also contested at Sydney this year, where she was a commendable third.

She became interested in junior judging while studying agriculture in Year 10, becoming a member of the Menai show team competing on the outer Sydney show circuit.

As well as fleeces, Belinda has judged beef cattle, Merino sheep and dairy goats. She won the State dairy goat junior judging competition at the Royal two years ago, and was reserve champion the year before.

"I enjoy the challenge of junior judging and the skills you take away from it, such as developing your public speaking style and gaining confidence to give your opinions," she said.

Winner of the national competition was Darren Chapman, of Boyup Brook, WA, who took the Federal Council of Agricultural Societies' award.

Darren, 17, now works with his parents, Des and Shelley, on the family property, where they operate Beaufort Vale Merino stud.

He looks forward to a career as a Merino sheep producer.

Reserve champion was Sam Usher, of Charleville, Queensland, with Belinda Fairbrother (NSW) third and Damon Crawford, Adelaide, representing South Australia, fourth.

Belinda Fairbrother of Menai High school



Students of Oberon High, winners of Schools in Agriculture Display

N.S.W. Association of Agriculture Teachers Inc

ABN Number 81 639 285 642

Membership Form

Name - .....

Address (for posting BAAT)- .....

.....

School - .....

School Phone - .....

Fax - .....

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Membership Fees –

Yearly $45 (Students $22.50)

Biannually $90 (Students $45)

Please return this form with your cheque or money order (made payable to NSWAAT) to;

Patrick McCann
St Joseph's College,
Mark St
HUNTERS HILL
NSW 2110

The following list outlines recent membership details.
Please take the time to check that your details are correct,
ie: financial status, school/organisation, spelling, etc
Should you have any questions, or would like to up-date your details, please contact Karen Heap, at
Muirfield High School: PH: 9872 2244, Fax: 9871 4106

Membership Details

TITLE	FIRST NAME	SURNAME	SCHOOL	1999	2000	2001	2002	2003
Mr	Bryon	Adamson	Corowa High School	Y	Y	N	N	
Mr	Joseph	Akonda	St Johns Park High School	Y	Y	N	N	
Mr	Charles	Anderson	Catholic High School	Y	Y	N	N	
Mr	Ian	Anderson		Y	Y	N	N	
Mr	Peter	Annetts	Cherrybrook Technology HS	Y	Y	Y	N	
Mr	Ronald	Anson	Griffith High School	Y	Y	Y	N	
Mr	Phil	Armour	Yass High School	Y	N	Y	N	
	Kiri	Armstrong	Blayney High School	N	Y	N	N	
Mr	Attila	Babos	James Sheahan Catholic HS	Y	Y	N	N	
Mr	Ian	Baird	Murrumburrah High School	Y	Y	N	N	
	Patricia	Baker	Gunnadah High School	N	Y	N	N	
Mr	David	Baker	St Gregorys College	N	Y	N	N	
Mr.	Michael	Ball	Armidale High School	Y	N	N	N	
Mr	Norm	Balzer	Kadina High School	Y	Y	Y	N	
Ms	Sally	Bannerman		Y	Y	Y	N	
Mr	Chris	Barbary	Richmond River High School	Y	Y	Y	N	
Mr	John	Barnes	Green Point Christian School	Y	Y	Y	Y	Y
Mr	Tony	Barnett	Walcha Central School	Y	Y	N	N	
Mr	Don	Bartholomew		Y	Y	Y	Y	
Mr	Robert	Bent	Nepean High School	Y	N	N	N	
	Susanne	Berkeley	Emmaus College	N	Y	N	N	
Mr	Ian	Bishop	The Scots School	N	Y	Y	N	
Mr	David	Blowes	Yeoval Central	Y	Y	Y	N	
Ms	Gay	Booth				Y		
Ms	Sheree	Bourke	Menai High School	Y	Y	N	N	
Mr	Christopher	Bowling	Sydney S.D.E.C	Y	Y	N	N	
Mr	Graham	Bramley	St Pauls College	N	Y	Y	N	
Mr	Paul	Bray	Ardlethan Central School	Y	N	N	N	
Mr	Mal	Bray	James Ruse Agricultural High	Y	Y	N	N	
Ms	Catherine	Breene	Oakhill College School	Y	Y	N	N	
	Robert	Brent	Nepean High School	N	Y	Y	N	
Mr	Jason	Brien	Gulgong High School	N	Y	N	N	
	Lisa	Bright	St Josephs High School	Y	Y	N	N	
Mr	Lisle	Brown	James Ruse Ag. High School	Y	Y	Y	N	
Mr	Rick	Buckley	St Patrick's College	Y	N	N	N	
Mr	Dennis	Burns	The Henry Lawson HS	Y	Y	Y	N	
Mr	Tony	Butler	Tumut High School	Y	Y	Y	Y	
	Lynda	Buttsworth	Jamison High School	Y	Y	Y	N	
Mr	Lindsay	Cartwright	Morisset High School	Y	N	N	N	
Mr	Dale	Chadwick	Gundagai High School	Y	N	N	N	
Ms	Sandra	Chamberlain	Ginninderra District HS	Y	N	N	N	
Ms	Megan	Chandler	Narara Valley High School	Y	Y	Y	N	
Mr	Rowan	Chandler	Uralla Central School	Y	N	N	N	
Mr	Michael	Chapman	Bourke High School	N	Y	N	N	
Mrs	Anne	Clark	James Sheahan Catholic High	Y	Y	Y	N	
Mr	Rowland	Clark	Canberra Grammar School	Y	Y	N	N	
Mr	Geoffrey	Clark	Caroline Chisholm College	N	Y	N	N	
	L	Clark-Vial	Macquarie Boys High School	N	Y	N	N	
	Caroline	Clatworthy	Maquarie Fields High School	Y	Y	Y	N	
Mr	Lloyd	Cleaver	All Saints College	Y	Y	N	N	
Mr	Charles	Colclough	Wellington High School	Y	Y	N	N	
Mr	Alan	Cooper	Ungarie Central	Y	Y	N	N	
Mr	Nigel	Cox	Singleton High School	Y	Y	N	N	
Mr	Ian	Crabb	Queanbeyan High School	Y	Y	N	N	
Mr	Darren	Craig	Henry Kendall High School	Y	N	N	N	

TITLE	FIRST NAME	SURNAME	SCHOOL	1999	2000	2001	2002	2003
Mr	Geoff	Creek	Murumbidgee College of Ag	Y	N	Y	N	
Mr	David	Crofts	The Scots School	Y	Y	N	N	
Ms	Elena	Dagher	Bossley Park High School	Y	Y	Y	N	
	Alison	Dahlenburg	St Frances De Sales Reg. Col	N	Y	N	N	
Miss	Karen	Damic	Bathurst High School	Y	Y	Y	N	
Mr	Mark	Dann	Gilgandra High School	Y	N	N	N	
Mrs	Heather	Davies	Pymble Ladies College	Y	Y	N	N	
Mr	Ron	de Cleene	St Columbas High School			Y		
Mrs	Kathy	DeJong	Galston High School	Y	Y	N	N	
Ms	Anita	DelaMotte	Bomaderry High School	Y	Y	N	N	
	Alee Semone	Den	Dubbo High School	Y	N	N	N	
Mr	Garry	Dew	Coffs Harbour High School	Y	Y	N	N	
Mr	George	DiScala	Bidwell High School	Y	N	N	N	
Mr	John	Drenkhahn	Broken Hill High School	Y	Y	Y	N	
	Bruce	Dymock	Kings College	Y	Y	N	N	
Mr	Warren	Eames	Umina High School	Y	Y	N	N	
	The	Editor	AEAWA Newsletter	Y	Y	Y	Y	
	John	Eggleston	Henry Kendall High School	N	Y	Y	N	
The	Agriculture	Faculty	Farrer Memorial High School	N	Y	Y	N	
Mr	Guy	Fahey	Albury High School	Y	N	N	N	
Mr	Darryl	Finch	Billabong High School	Y	Y	N	N	
Ms.	Jemima	Finlayson	Moss Vale High School	Y	Y	Y	N	
Mr	Russell	Firth	Vincentia High School	Y	Y	N	N	
Mr	John	Fitzhenry	Quandialla Central School	Y	N	N	N	
	Louise	Fletcher	Freshwater High School	Y	Y	Y	Y	
Mr	Rob	Forsberg	The Armidale School	Y	Y	N	N	
	Heather	Forsyth		Y	N	N	N	
Ms	Lyndall	Foster	Curriculum Support Directorate	Y	Y	N	N	
Prof	Rod	Francis	School of Education, CSU	Y	Y	N	N	
Mr	Brian	Friend	Wauchope High School	Y	Y	N	N	
Mr	Ivan	Gant	Merriwa Central School	Y	Y	N	N	
Mr.	Don	Garling	Cowra High School	Y	N	N	N	
	Tracy	Garrett	Tomaree High School	N	Y	N	N	
	Cliff	George	Peak Hill Central School	N	Y	Y	N	
Mr	David	Gillard	Wagga Wagga Technology HS	Y	Y	N	N	
Mr	Milton	Gower	Macarthur Anglican School	Y	Y	N	N	
Mr	Peter	Graham	Irrawang High School	Y	Y	N	N	
Mr	Peter	Green	Junee High School	Y	N	N	N	
Mr	Leigh	Gribble	Berkeley Vale Community High	Y	Y	Y	N	
Mr	Neil	Griffith	Irrawang High School	Y	Y	N	N	
	Amy	Grima	Catholic High School	n	y	Y	Y	
Mr	Stuart	Grimmett	Woodenbong Central School	Y	Y	N	N	
Mr	Hilmar	Groschner	Hawkesbury High School			Y		
	Julie	Haeusler	OTEN	Y	Y	N	N	
Mr	Gary	Hansen	Nyngan High School	Y	N	N	N	
Mr	Adrian	Harrison	St Gregory's College	Y	Y	N	N	
Mr	Jim	Hartley	Kadina High School	Y	Y	Y	N	
Mr	Bill	Haszard	Mount View High School	Y	Y	N	N	
Mr	Ian	Hatherly	Kinross Wolorol School	Y	Y	Y	N	
Mr	John	Hawkins	Colo High School	Y	Y	Y	N	
Ms	Karen	Heap	Muirfield Tech High School	Y	Y	Y	N	
Mr	Ian	Heffernan	Dapto High School	Y	Y	Y	N	
Mr	Stuart	Hemmings	Office of the BoS		Y	Y		
Mr	Robert	Henderson	Tomaree High School	Y	N	Y	N	
Mr	Iain	Henderson	Coomealla High School	Y	Y	N	N	
Mr	David	Henry	Karabar High School	Y	Y	N	N	
Ms	Brigetta	Herrman	Plumpton High School	Y	Y	N	N	
Mr	Robert	Hindmarsh	Macquarie Boys Technology HS	Y	Y	Y	N	
Ms	Jayne	Hoffman	Alstonville High School	Y	N	N	N	
Mr	Scott	Hollingsworth	Coffs Harbour High School	Y	Y	N	N	
Ms	Ann-Maree	Holmes	Menai High School			Y		

TITLE	FIRST NAME	SURNAME	SCHOOL	1999	2000	2001	2002	2003
Mr	Peter	Hood	Narrabri High School	Y	N	Y	Y	
Ms	Sue	Hope	Goulburn High School	Y	Y	Y	Y	
Mr	Ian	Howchin	Dorrigo High School	N	Y	Y	N	
Mr	Wayne	Hoy	Lyneham High School	Y	N	N	N	
Mr	Peter	Humphries	Deniliquin High School	Y	N	Y	N	
Ms	Dawne	Hunter	Gulgong High School	Y	N	N	N	
Mr	Phil	Hurst	Hawkesbury High School	Y	Y	Y	Y	
Mr	Ross	Irvin	Lake Illawarra High School	Y	N	N	N	
Mr	Jon	Irvine	Temora High School	Y	Y	Y	N	
Mr	Stuart	Irwin	Inverell High School	Y	Y	N	N	
	Geoff	Jackson	Dubbo Christian School	N	Y	Y	N	
Mr	Grant	Jackson	Gosford High School	Y	N	N	N	
Mr	Ivan	Johnson		Y	Y	Y	N	
	David	Johnson	James Fallon High School	N	Y	N	N	
	Noelene	Johnson	Warren Central	Y	N	N	N	
	Janette	Johnston	Gosford High School	Y	N	N	N	
Mr	Ken	Jones	Bathurst High School			Y		
Mr	Peter	Jones	Mount Druitt High School	Y	Y	N	N	
Mr	Ian	Judd	Dorrigo High School	Y	Y	Y	N	
Ms	Joan	Keiger	Karabar High School	Y	Y	N	N	
Mr	Arthur	Kelly	Camden High School	Y	Y	N	N	
Mr	Rick	Kemp	James Ruse Ag. High School	Y	Y	Y	N	
Mr	Howard	Kennedy	Board of Studies	Y	Y	Y	N	
Mr	David	Kent	Chevalier College	Y	Y	N	N	
Ms	Pru	Kesby	St Mary's College	Y	Y	Y	Y	
Mr	Reg	Kidd	Roma'	Y	N	N	N	
Mr	John	Killeen	Girraween High School	Y	Y	N	N	
Ms	Jo	Kitchener	Marian College	Y	N	N	N	
Mrs	Helen	Kleinbergs	Molong Central School	Y	Y	Y	N	
	Mykel	Koller	Nagle College	Y	Y	N	N	
Mrs	Danielle	Knx	Bede Polding College	Y	Y	N	N	
Mr	Ken	Langford	Uni of Western Sydney	Y	Y	Y	N	
Mr	Keith	Larsson	Bonalbo Central School	Y	Y	Y	N	
Mr	John	Lee	Glen Innes High School	Y	Y	N	N	
Mr	Stephan	Lehman	South Grafton High School	Y	N	N	N	
Ms	Judy	Lockhart	Moss Vale High School	Y	N	N	N	
Mr	Peter	Longmire	Oaklands Central School	Y	N	N	N	
	Tim	Lukins	Condobolin High School	N	Y	N	N	
Mr	Phillip	Lyne	Kelso High School	Y	N	N	N	
Mr	Peter	Lynes	Beenleigh High School	Y	Y	Y	Y	
	Val	Lyons	Beenleigh State High School			Y		
Mr	Francis	Mackay	Caroline Chisholm Catholic HS	Y	Y	N	N	
Mr	Aravind	Maharaj	St John's Park High School	Y	Y	N	N	
Mr	Bruce	Manktelow	Scone High School	Y	Y	Y	N	
Mr	Ian	Marriott	Casino High School	Y	N	N	N	
Ms	Sally	Marsden	Finley High School	Y	Y	N	N	
	Diana	Martin	Tooleybuc Central	Y	N	N	N	
Mr	Peter	Matus	The Scots School	Y	N	Y	N	
Ms	Anna	McAuliffe	Macarthur Girls High School	Y	N	N	N	
Mrs	Angela	McCann	St Josephs College	Y	Y	Y	Y	
Mr	Patrick	McCann	St Josephs Hunters Hill	Y	Y	Y	Y	
	Johanna	McCarthy	Hillston Central School	N	Y	N	N	
Mr	Lloyd	McClymont	Grafton High School	Y	N	Y	N	
Ms	Melinda	McColl	Delroy High School	N	Y	Y	N	
Mr	Ray	McCord	Leumeah High School	Y	Y	N	N	
Mr	Kevin	McCormick		N	Y	N	N	
Mr	Colin	McEntyre	John Paul College	Y	Y	N	N	
Mr	Marty	McGee	James Sheahan Catholic HS	Y	Y	N	N	
Mr	Ross	McGregor	Hurlstone Ag. High School	Y	Y	N	N	
Mrs	Jaqueline	McIntosh	Crookwell High School	Y	Y	Y	N	
Mr	Owen	McLaughlan	Carnowindra High School	Y	Y	N	N	

TITLE	FIRST NAME	SURNAME	SCHOOL	1999	2000	2001	2002	2003
Mr	Alan	McMillan	Wagga Wagga Technology HS	Y	Y	Y	N	
Mr	Mick	Melino	St John's College	Y	Y	N	N	
Mr	Geoff	Melville	St Stanislaus College	Y	N	N	N	
Ms	Christina	Mikan	Bass High School	Y	Y	N	N	
Mr	B	Mikulski	Macksville High School	Y	N	N	N	
Mr	Tim	Minehan	Young Tech High School	Y	N	N	N	
Mr	Alan	Mitchell	Wanalda High School	Y	N	N	N	
Mr	Warwick	Moore	Dept of Ag	Y	Y	Y	N	
Mr	Jonathan	Moore	Scone Grammar School	Y	Y	N	N	
Mr	David	Morgan	Barker College	Y	Y	N	N	
Ms	Natalie	Muir	McGraw-Hill Book Publishing	Y	N	Y	N	
Mr	David	Muller	Batlow Technology High School	Y	N	N	N	
Ms	Leonie	Mutch	St Ignatius College	Y	Y	Y	N	
Mrs	Libby	Nankervis	St Stanislaus College	Y	Y	Y	N	
Mr	Peter	Napier	Orange High School	Y	Y	Y	N	
Mr	Vijay	Nath	Doonside Technology HS	Y	Y	N	N	
Mrs	Simone	Neville	Berkley Vale Community HS	Y	N	N	N	
Mr	Trevor J.	Newman	Nowra Hgh School			Y		
Ms	Browyn	Nielsen	Peel Technology High School	N	Y	Y		
Mr	Stephen	Nott	Carinya Christian School	Y	Y	N	N	
Mr	Craig	O'Brien	Moss Vale High School	Y	Y	Y	Y	
	Lisa	O'Brien	Yanco Agricultural College	N	Y	Y	N	
Mr	Phillip	Oliver	Bankstown Grammar	Y	Y	N	N	
Mr	Paul	Owens	Port Macquarie High School	Y	Y	N	N	
Mr	Matthew	Passmore	Red Bend College	Y	Y	N	N	
Mr.	Kingsley	Picker	Kelso High School	Y	N	N	N	
	Lindy	Piper	Dunedoo Central School	Y	N	N	N	
Mr.	Travis	Powell	CB Alexander Ag College	Y	Y	Y	N	
Mrs	Fiona	Prott	Kingswood High School	Y	N	N	N	
To	Macmillian	Publishing	Suite 309	Y	Y	N	N	
Mr.	Neil	Puddey	Woolgoolga High School	Y	Y	Y	N	
Mr.	Graham	Quintall	Pennant Hills High School	Y	Y	Y	N	
Mr	Darren	Radford	Walgett High School	Y	Y	N	N	
	Laurie	Raper	Peel Technology High School	N	Y	Y	N	
Mr	Stephen	Rawlinson	Pittwater High School	Y	Y	y	N	
Mr	Tony	Reddan	Perdle Hill High School	Y	Y	N	N	
Mr	Ian	Richardson	Coffs Harbour Christian Sc	Y	Y	Y	N	
Ms	Gail	Roberts	James Ruse High School	Y	Y	Y	N	
Mr	Chris	Roberts	St Pauls Grammar	Y	Y	N	N	
Mrs	Robyn	Roberts	Duval High School	Y	Y	N	N	
Mr	Peter	Robertson	Narooma High School	Y	Y	Y	N	
Mr	Paul	Robey	St Paul's College	Y	N	N	N	
Mr	Dave	Robinson	Gloucester High School	Y	Y	Y	N	
Mr	Norm	Robinson		Y	Y	Y	Y	
Mr	Paul	Ross-New	Kingswood High School	Y	N	N	N	
Mr	Rod	Russell	Hurlstone Ag. High School	Y	Y	N	N	
Mr	David	Ryan	Wellington Christian School	Y	Y	N	N	
Mr	David	Saunders	Leeton High School	N	Y	Y	N	
Head	Teacher	Science	Cranebrook High School	N	Y	N	N	
Mr	Arthur	Scriven	Manilla Central	Y	Y	N	N	
Mr	Mark	Searles	Catherine McAuley College	Y	N	N	N	
Mr	Robert	Seccombe	Casino High School	Y	Y	N	N	
Mr	Don	Selway	Frensham	N	Y	N	N	
Mr	Trevor J.	Sewell	Gosford High School	Y	Y	N	N	
Mr	Alex	Skladnev	Dungog High School	Y	N	N	N	
Mr	Geoff	Smith	Northmead High School		y	Y		
Mr.	Paul	Smith	Cowra High School	Y	Y	Y	N	
Mr	Stephen	Speer	CSIRO Discovery			Y	Y	
	Megan	Steele	Griffith High School	Y	Y	N	N	
	Kerry	Steer	Northolm Grammer School	Y	Y	Y	N	
	Margaret	Stephenson	Ginninderra District High School	N	N	Y	N	

TITLE	FIRST NAME	SURNAME	SCHOOL	1999	2000	2001	2002	2003
Ms	Rosie	Stern	OTEN	Y	Y	N	N	
Mr	Maxwell	Stewart	Bombala High School	Y	Y	N	N	
Mr	Stuart	Stout	Leeton High School	Y	N	N	N	
Ms	Kim	Strode	Hay War Memorial High School	Y	N	N	N	
Mr	John	Surtees	Wingham High School	Y	Y	Y	N	
	Jane	Swan		N	Y	N	N	
Mr	Chris	Taylor	Knox Grammar School	Y	Y	Y	N	
Mr	Grant	Taylor	Musselbrook High School			Y		
	Joanne	Taylor	Barham High School	Y	Y	N	N	
The	Agriculture	Teacher	Bega High School	Y	Y	Y	Y	
The	Agriculture	Teacher	Galston High School	N	N	Y	Y	
The	Agriculture	Teacher	Corrimal High School	N	N	Y	Y	
The	Agriculture	Teacher	Coonamble High School	Y	N	N	N	
The	Agriculture	Teacher	Crestwood High School	N	Y	N	N	
The	Agriculture	Teacher	Elderslie High School	N	Y	N	N	
The	Agriculture	Teacher	Kingscliff High School	Y	Y	N	N	
The	Agriculture	Teacher	Murwillumbah High School	N	Y	N	N	
The	Agriculture	Teacher	Pennant Hills High School	Y	N	N	N	
The	Agriculture	Teacher	Quakers Hill High School	N	Y	N	N	
The	Agriculture	Teacher	Quirindi High School	Y	Y	N	N	
The	Agriculture	Teacher	Richmond High School	Y	Y	N	N	
The	Agriculture	Teacher	Terrigal High School	N	Y	N	N	
Mr	Norm	Thomas		Y	Y	Y	Y	
Mr	Allan	Thomas	Armidale High School	Y	N	N	N	
Mr	Ken	Thomas		Y	Y	N	N	
Ms	Sherryl	Thornthwaite	Galston High School	Y	N	N	N	
	Stephen	Tolputt	Erskine Park High School	N	Y	Y	N	
Mrs	Kathy	Townsend	Holy Trinity School	Y	Y	N	N	
Mr	Stephen	Trickett	Billabong High School	Y	Y	N	N	
	Karen	Tucker	Lisarow High School	N	Y	N	N	
Mr	Tony	Turner	Muirfield High School	Y	N	N	N	
Mr	David	Turner	Urana Central School	Y	Y	N	N	
Mr	Paul	Udy	Galston High School	Y	N	N	N	
	Ashley	Unger	Wyong HighSchool	N	Y	Y	N	
Mrs	Virginia	VanGend	St Stanislaus College	N	Y	N	N	
Mrs	Jill	Wagner	New England Girls School	Y	Y	N	N	
	Mike	Wallbank	Toormina High School	N	Y	Y	N	
Ms	Tracey	Watson	Hurlstone Ag. High School	Y	Y	N	N	
Mr	Peter	Wearne	The Kings School	Y	N	Y	N	
Ms	Jenny	Webb	Trundle Central School	Y	Y	Y	N	
Ms	Nicolet	Westerhoff	Elizabeth Macarthur High School	Y	Y	N	N	
Mrs	Sarah	Westman	Bathurst High School	N	Y	N	N	
	Alison	Weston	ABC Education	N	Y	N	N	
Mr	Wayne	Whale	St Paul's College	Y	Y	Y	N	
Mr	Rick	Wheaton	Oxley High School	Y	Y	N	N	
Mr	Richard	White	Balranald Central School	N	Y	Y	N	
Mr	Doug	White	Manilla Central	Y	Y	Y	N	
Ms	Joan	Whitehead	Tooleybuc Central	Y	N	N	N	
Ms	Jenni	Wilkins		Y	N	N	N	
Mr	Daryl	Williams	Temora High School	Y	Y	Y	N	
Ms	Vicki	Willmington	Bossley Park High School	Y	N	N	N	
Mr	Graham	Wilson	Mudgee High School	Y	Y	Y	N	
	S	Withers	Erina High School	N	Y	N	N	
Professor	Ted	Wolfe	School of Ag, Charles Sturt Uni	N	Y	Y	N	
Mrs	Beth	Worthy	Bega Valley Christian College	Y	Y	Y	N	
Mrs	Jan	Young	Yass High School	Y	Y	Y	N	
	The Librarian		NSW Agriculture	N	Y	Y	N	

LIVING SOIL?

Just a single spoonful of healthy soil can contain many millions of micoscopic organisms that perform vital functions in the root zone. Beneficial organisms such as bacteria, fungi, nematodes and protozoa perform six key functions in the soil food web:

1. They break down crop residues and manure to make them more available to feed other "good" soil organisms;
2. They store up nutrients in their bodies to minimise leaching;
3. They recycle nutrients, eg, the protozoa that feed on bacteria cause nitrogen and some phosphorus to be released at a steady rate to crops all season long;
4. Healthy soils with a wide range of microbes often contain species that can kill or suppress any root rotting fungi and nematodes that attack roots;
5. Certain soil microbes produce hormones that regulate and/or stimulate plant growth and development;
6. Well structured soils rely on the gums produced by certain bacteria that stick clay, silt and sand together, and the physical binding of soil aggregates by certain species of beneficial fungi
7. Some typess of microbes "eat" most herbicide and pesticide molecules, cleaning up various forms of pollution.

Soil science is not only about physics and chemistry. Some of the soil's most interesting bits are alive!

THE COTTON CORD TEST FOR SOIL MICROBES:

Even though we can't see most of the organisms in the soil with our naked eye, we can see and measure the sorts of work they do. Using various thicknesses of pure cotton cord as "microbe meals", it is easy to see how healthy your soils are. Try the following experiment in your agriculture plot this Spring to see if you have more than just worms and bugs in your soil.



1 Choose pure cotton cord up to 5 mm in diameter and cut it into 0.5-1 metre lengths. Use a shovel to cut a 50 cm long slot in the ground to a depth of 10-15 cm. Place the cord in the slot, leaving 5-10 cm hanging out either end of the slot. Mark the position of the buried cord with a stake or peg. Do this in several spots.

2 Six weeks later, find and carefully lift the buried cord. How much of the cord has been broken down? You can tie intact cord to a spring balance and measure the force it takes to break the cord. The greater the force, the lower the microbial activity, and the poorer the soil health.

TIP: Try this experiment under various pasture and/or crop types, eg, long-established pasture, winter & summer crops, sparse hill pasture, native pastures, newly-sown pastures, etc.

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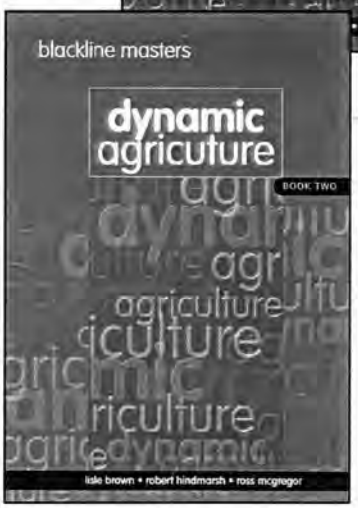
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Lisle Brown is Head Teacher at James Ruse Agricultural High School, Sydney. *Robert Hindmarsh* is Agriculture Teacher at Macquarie Boys High School, Sydney. *Ross McGregor* is Head Teacher at Hurlstone Agricultural High School, Sydney. All three authors are prominent in Science/Agriculture teaching circles, having been involved in syllabus development, course strategies and conference workshops.

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TOBRUK

AUSTRALIAN MERINO

SHEEP STATION

TOBRUK RATES
SENIORS AND STUDENTS

1 January 2001 - 31 December 2001



A UNIQUE AUSTRALIAN FARM EXPERIENCE

ENTERTAINING	EDUCATIONAL	PARTICIPATION

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CATTLE DOG MANAGEMENT P/L TRADING AS TOBRUK AUSTRALIAN MERINO SHEEP STATION
TEL (02) 4566 8223 FAX (02) 4566 8285 INTERNATIONAL FAX 61 (2) 4566 8285 RMB 116 OLD NORTHERN ROAD MAROOTA NSW 2756
A.B.N. 69 068 509 508

TOBRUK INFORMATION

1 Jan -31 Dec 2001

Description *TOBRUK* is set on 150 acres (70 hectares) above the Hawkesbury River and is surrounded by State Forest, looking across to the Blue Mountains. You could be 1000 miles from anywhere, but in fact you are only 75 minutes from Sydney. *TOBRUK'S* buildings and restaurant/dining room has that country charm and authenticity you would expect.
TOBRUK'S program is educational, entertaining and participative. Our meals are home cooked, country style.
TOBRUK evenings enjoy a Blue Mountains sunset and star filled skies.

Hours *TOBRUK* is open for day and evening bookings throughout the year.
Please check with *TOBRUK* regarding Christmas period opening dates.
(subject to availability)
Day Program 10:15-2:15

Menus See attached
Special requests with prior notice
(TOBRUK is pleased to quote for any client request)
- Vegetarian and fish meals can be supplied with prior notice

Capacity *Tobruk* can comfortably seat up to 200 people.
For larger groups, extra tables or a marquee can be organised.
Our capacity caters for anything up to 1000 plus people.

Facilities *TOBRUK* has disabled facilities with easy access and ramps to most areas.

Bookings *TOBRUK* can be contacted on the following numbers

Royce and Kumiko Bartram
RMB 116 Old Northern Road
MAROOTA NSW 2756
Phone: (02) 4566 8223
Facsimile: (02) 4566 8285
Mobile: 0417411 133 (Royce Bartram)
A.H: (02)4566 8217

Payment On the day or:
Terms Strictly 30 days from date of invoice to approved suppliers
14 days for exclusive use

Insurance *TOBRUK* currently holds public liability insurance for $10,000,000

TOBRUK SENIORS/STUDENT RATES

1 January 2001 — 31 December 2001

Billy Tea and Damper (Minimum 30 people)
Adult/Child $13.64 + 10%GST $15.00

Morning Tea * Billy Tea and Damper with Golden Syrup
* TOBRUK program
* Guests supply their own lunch

Sausage Sizzle (Minimum 30 people)
Adult/Child $17.28 + 10% GST $19.00

Morning Tea * Billy Tea and Damper with Golden Syrup
Lunch * BBQ'd Sausage in a roll with onions
* Condiments
Dessert * Lamingtons
Self Serve * Juice

Drovers Camp BBQ (Minimum 30 people)
Adult/Child $24.55 + 10% GST $27.00

Morning Tea * Billy Tea and Damper with Golden Syrup
Lunch * BBQ'd Sausage and Rissole with Onions and Potato
* Green Salad
* Fresh baked Bread Roll
* Condiments
Dessert * Lamington
Self Serve * Tea / Coffee and TOBRUK Anzac biscuits
* Juice

Beverages

A selection of Beer, Wine and Soft Drinks are available for guests to purchase.

Minimum numbers apply.
Over the minimum numbers, teachers and tour organisers are free of charge.

PROGRAM INCLUSIONS

ITINERARY OF A DAYS ACTIVITES

- Met by our stockman on horseback.
- Assemble at Drovers Camp.

Bill Tea and Damper

- Around the campfire.

Mustering

- Stockman on horseback work with the sheepdogs to bring the sheep into the yards.

Yard Work

- Stockman and sheepdogs work together.

Sheep Shearing Demonstration

- Guests can try their hand at shearing and learn about one of Australia's biggest and oldest industries.
- Wool Room Talk.

12:15 pm Aussie BBQ Lunch

- Whip Cracking & Boomerang Throwing - Enjoy these hands on activities where guest participation is encouraged.
- Visit Station Store - Local handcrafts, sheepskins etc.

2:15 pm DEPARTURE

* Tobruk can design a program to suit your group's arrival and departure times (conditions apply).
* TOBRUK'S program is designed for guest participation, where possible.
* **Evening Program -** Includes all or specific parts of the above program depending on arrival and departure times.