Summer 1996 Edition No 6

NSW Association of Agriculture Teachers Inc.

Bulletin of the NSW Association of Agriculture Teachers Incorporated

B·A·T·



inside...

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Summer 1996 Edition No. 6

Bulletin of The NSW Association. of Agriculture Teachers Incorporated

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A Last Word from the Editor

My Aim

as the current Editor of BAAT has been to view our magazine as a pathway to members and the community for those who have information to share.

BAAT represents a diverse group, with readers over great distances, each with distinct interests. It has been difficult to satisfy all but it has been a great pleasure to receive the odd call/fax or note which leads me to think I sometimes "got it right"!

A pleasing culmination of my time as editor has been to reflect on our strong membership which continues to expand with 250 copies of this issue, reaching as far as Fiji.

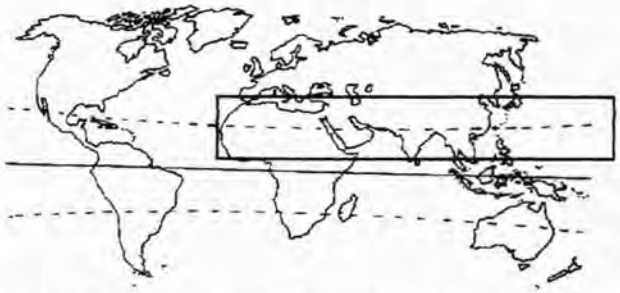
In the past BAAT's Editors have provided a journal of worth - however, the expectation that a professional publication can be produced without financial reward is over. We need to go back to square one and examine the cost/benefit of this magazine because it represents a major use of members' Fees. I believe a founding concept of BAAT was that its production would be based on contributions from Teachers. This does not happen. In my experience it is unrealistic to expect members' written contributions to increase ... **so where to??**

Let your Opinion be Heard

If we want this magazine, and our association to reflect membership views then we (**YOU**) need to air our opinions. I urge members to consider the forum provided by the Biennial Conference at Berry in late January. **If you have something to say please contact the President Stewart Grimmett - or BAAT - to get it on the agenda and out into the air.**

BAAT'S FUTURE
Can BAAT continue?
Do we need it?
How much is it worth?
WHY?
(See the Treasurer's Report)

THINK ABOUT THIS



The 10/40 Window lies between the 10th parallel and the 40th parallel north. It contains 67 % of the world's population.

AND NOW

Let us never forget that the cultivation of the earth is the most important labour of man. Man may be civilized in some degree without great progress in manufactures and with little commerce with his distant neighbours. But without the cultivation of the earth, he is, in all countries, a savage. Until he gives up the chase, and fixes himself in some place, and seeks a living from the earth, he is a roaming barbarian. When tillage begins, other arts follow. The farmers, therefore, are the founders of civilization.

Daniel Webster

Many thanks to those who have taken both time and trouble to prepare items for BAAT

Those members of "mature years" will no doubt enjoy the item from Norm Robinson. It is great to report that Norm still has mountains to climb and rivers to cross!.

"Never lose sight of THE BIG PICTURE"



and now it's Farewell from me.

John Musgrave

Editor 1994 - 1996

THE PRESIDENT WRITES

Summer 1996 Edition No. 6

THIRD REPORT FOR 1996

G'day. Welcome to the third and final edition of BAAT for 1996.

The BAAT magazine has been a major pillar in upholding the professional name of Agriculture Teachers and the subject itself - a thankless task by John Musgrave (Kadina Goonellabah,{Lismore}) in editing what has been described as one of the best subject magazines across all curricula. Well done John. Comments still keep coming in. Contributors of the school section and articles are also commended for without these John's task would be difficult.

TREASURER

To Mike Melino (St John's College, Woodlawn, Lismore) a sincere thanks for handling the frustrations of being Treasurer and the support you have been given with Incorporation of the Ag. Teachers Association. No doubt his report will highlight a couple of anomolies that we will need to consider at the January Conference in Berry.

Also, thanks are due to all members of the North Coast Network for supporting and continuing Association.

Jenni Wilkins

We need to put our hands together for our Captain in the Curriculum Office (Agricultural Education) at the Board of Studies - Jenni Wilkins. This appointment comes up for renewal soon. Hopefully good will and cooperation will exist and Jenni will be returned. It is vital that we have someone on the Board, particularly with the new Junior Syllabus and the continued introduction of Rural Industries into schools. The support that Jenni has offered me (when asked "what will I do?" - response "I'll look after that" or "we'll work through it, no problem!") has come from a true champion. Thanks Jenni. I hope your career stays with Agriculture Education. Jenni has shown how critical it is to have someone in our subject on the Board. to be a phone call away for consultation on areas that directly affect us.

Congratulations

Congratulations to Peter Jones (Colo High, MetWest) for a very successful/informative Rural Industries Conference - Oct/Nov at Airport Hilton. The energy with which Peter arranged the conference was excellent and no doubt proceedings from the Conference will soon be available. Some twenty teachers across the state were involved in citing problems in running/setting up Rural Industry Courses and providing solutions which they have discovered. The feeling from the Conference was all positive, and once our community understands vocational education and TER, I'm sure we will gain further acceptance with Rural Industries.

AVTF Article

The article on AVTF in this edition could also provide some help for schools in providing release time etc for developing units, community industry links,

and practical work both in Rural Industries and Agriculture

Sybil Adams (Trangie) and Geoff Metcalf (Tullibgeal) have had success in developing links for their Distance Rural Industries Courses. Perhaps we can tap into local industries, for down the track, if it will mean our survival.

Networking

There is an excellent source of teaching strategies developed in Agriculture throughout NSW. Every teacher and school is different. Problems arise, but, with the intuitive nature of ag. teachers they have overcome these in a variety of ways. Some of these have shown up in BAAT magazines and conferences. There should never be an Ag teacher stuck on a problem. A network is operating near you. Become a partner in one of these and feel the support. It is very rewarding to be an Agricultural teacher (even though there are many thankless tasks involved). We are a caring people dealing with everyday situations and most students respond to us. I'd like to personally thank all Ag teachers for the time and effort they have put into making this subject what it is.

South Coast Conference

For South Coast Conference organisers: a difficult stage has been reached where a superb programme has been organised with a variety of speakers but numbers at present attending are low. Please consider the importance of attending this Conference and show your appreciation for the working committee by sending your entry form to Phil Armour at Yass High School. This is very urgent. If not enough numbers register a change of venue will have to be considered. Please tee up with your network group and enjoy the fine hospitality and collegial nature of the South Coast Conference. Surely your school will provide funding. If not maybe you might have to bat a bit harder drawing attention to the financial committee of the importance in attending as you are giving up part of your holidays.

No doubt in 1997 we will need to button up and find other sources for funding. While cattle prices are low has anyone considered starting up a cow/calf programme or fruit tree programme - to help fund Rural Industries /Agriculture courses at your school? Perhaps access to ASTF funding could be of benefit to you particularly where you need time/relief to develop work components.

Could we please assess agriculture and Rural Industries at your school in terms of its continuation. My concern is that in the next few years, Ag teachers will be retiring or leaving for greener pastures. To stop the loss of all your good community work, network structure, and the special image and nature of your school farm, we need to know about your departure. This infomation can then be made available to newly trained Ag. teachers and others, who may be interested in your area. Congratulations to Ag teachers going up the ranks. This certainly provides a mainstay for the subject.

THANKS

To all those people who have supported me through the last two years, thanks a million. I hope you have also gained by it. To the new incoming Committee, best of luck and may we continue to take on board the challenges this subject offers us. Keep networking. Let's make the subject what its worth in 2000. Be a champion and others will follow.

Best wishes for a Happy Christmas and New Year.

See you at the Conference in '97.

Stewart

NSW ASSOCIATION OF AGRICULTURE TEACHERS INCORPORATED

Financial Statement as at 6th November 1996

Balance as per statement		6945.52
Add receipts in Cashbook		Nil
Less unpresented cheques		Nil
		6945.52
Balance as per Cashbook	7772.98	
Add Income	99.37	
	7872.35	
Less expenditure	926.83	
	6945.52	
Term Deposit (13/1/96)	6215.34	
Interest	47.37	
	6262.71	
	13208.23	

INCOME		
Opening Balance 1/2/95	12322.15	
Membership	9993.55	
DEET Money	5600.00	
Tamworth NW Branch	3360.00	
Interest	586.00	
		31861.70
WHERE HAS YOUR MONEY BEEN SPENT?		
EXPENDITURE		
BAAT Publications (5 to date)		
Postage	2573.70	
Printing	4840.72	
Editor's fees + Typing	3497.72	
	10912.14	
Conference Costs + Travel	4674.00	
Incorporation	378.75	
Membership List + National Association	1479.61	
Miscellaneous		
Conference Proceedings sale/return		
Phone		
3 Unit Prize	1065.00	
Bank Charges	94.32	
	18603.82	**18603.82**

A Proposal Given the current Fee Structure and the above figures on expenditure, our Association will be in financial trouble after the next Biennial period. **Fees should be raised to $30 per member per year** (or $60 per school for <u>two</u> copies of BAAT's per school). The fees should also be **paid annually** to assist with keeping track of members' addresses. If the fees are not raised it will be impossible to produce BAAT at the current standard. Please give this some thought before the Conference meeting in Berry, January 1997. *Mick Melino - Treasurer*

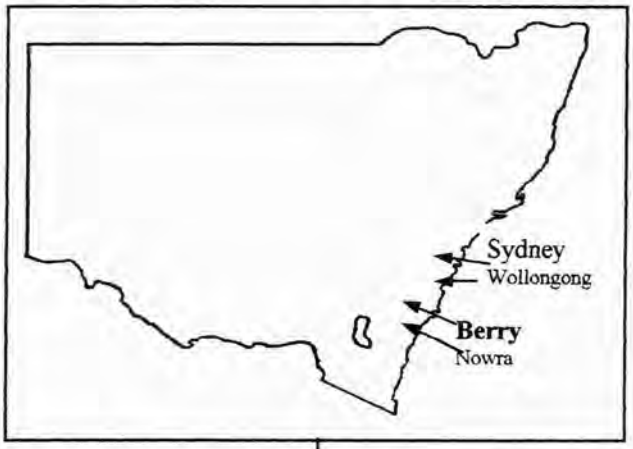
<u>PLEASE NOTE</u>: *The Treasurer collected and receipted **<u>all</u** fees this biennial period, saving the Association over $1000. Thanks Mick. Ed.*



1997 AGRICULTURE TEACHERS BIENNIAL CONFERENCE

Mon 27th to Thu 30th January 1997

AT BERRY SPORT and RECREATION CENTRE on the picturesque South Coast



HIGHLIGHTS:

TUESDAY NIGHT

Taste of the South, Prawns, Oysters and Cheese.

WEDNESDAY:

Bus tour of the Southern Highlands: (Alpacas, Proteos, Bradman Museum). Conference Dinner at Coolangatta Winery.

GUEST SPEAKERS INCLUDE:

Jenni Wilkins: HSC Marking, Greenpaper, 7-10 Syllabus
Jenny Edwards: Gene Technology
Jan Mills: Farm Safe
James White: Best Practices in Agriculture
Graham Quintall: Landcare
John Reynolds: Land Water Conservation
Peter Tuziak: Computer games/work cover
Assoc Prof Jim Pratley: Ag. Beyond 2000
David George: Climate on farms
Barry McDonald: Lamb cuts
John O'Sullivan: IWS Wool
Ag. Education Cooperative
David Gibbs: McDonalds, Product and market specification

NOW IS THE TIME TO PUT IN FOR PROFESSIONAL DEVELOPMENT FUNDS. SUPPORT YOUR ASSOCIATION.

FORWARD YOUR BOOKINGS + $50 DEPOSIT TO:

Phil Armour
C/- Yass High School
Locked Bag No 1
YASS 2582
Phone: (062) 261 711 Fax: (062) 263 174

BOOK NOW!.

If there is enough demand, we can pick up teachers from Sydney Airport on Monday and transport them to Berry by bus.

FOR FURTHER INFORMATION
Sue Hope, Goulburn High, 048 214022, Home 048 211279
Craig O'Brien, Moss Vale High 048 681717 Home 048 681154

FACILITIES INCLUDE:
- **Heated Pool and Indoor Spa**
- **Netball, Tennis and Basketball Courts**
- **Volley Ball**
- **B.B.Q. areas**

ACTIVITIES INCLUDE
- **Archery, bike riding, canoeing, abseiling, climbing**
- **The beach is about 10 km away**
- **Nowra for shopping is about 20 km south.**

See page 56 for Registration Form.

Some commuter busing could be available for participants who wish to "live out". Geroa to Shoalhaven Heads only.

PROGRAM and ACCOMMODATION

We hope to actually start the program at 4.30 pm. on the Monday. This means that we would like people to arrive and register / settle in by 3.00 p.m. Other leisure / orientation activities by arrangement between 9.00 a.m. and 3.00 p.m. Lunch will be available if numbers known - arrival time important. The Centre is about 2 km east of the Berry township. The Centre has a wide range of activities that may be used with trained staff.

Monday - "How I do it" sessions for a range of participants. Please nominate and share.

Tuesday - **CSIRO Gene Technology and a range of Workshops - Gene Technologies,**
Thursday Lamb Cuts; Climate and the Farm - David George, Dept. of Ag.
McDonalds - Marketing; International Wool Secretariat.
Dr Jim Pratley - Agriculture Beyond 2000, Jenny Wilkins - HSC Marking, Board of Studies; Jim White - Best Practice; Rural Training Council, Land and Water Conservation, Acid Soils; Agriculture Education Co-operative, NSW Ag, Uni's, Ag. Colleges, TAFE, Rural Industry Studies, Year 7 to 10 Syllabus, Career pathways after HSC Ag. CSIRO.

**** *Barbeque and a Taste of the South Coast* - varied foods from South Coast suppliers. ****

Wednesday - **Bus Tour - Coast and Highlands. Mountains and valleys. Should include - Ostrich-Emu farming, Mushroom growing, Largest export Protea Farm in Australia, Alpacas, Berry farm, Trout farm, Bradman Museum at Bowral.** Followed by **Conference Dinner held at Coolangatta Winery, with after dinner speaker**.

Accommodation at the Berry Sport and Rec. Centre is available Thursday night and Friday. It is most important that prior arrangements are made.

SPONSORSHIP:

Department of School Education - South Coast - $2000
University of Western Sydney - Hawkesbury - $1000
Rural Press - The Land Newspaper - 4 subscriptions.
WorkCover - computer programs - "*Don't Kick the Tractor*" and "*BackMan!*" plus time and equipment.
The Bega Co-operative Society - Cheeses.
Australian Cotton Foundation - $1000
NSW Association of Agriculture Teachers - $1000
McDonalds
GBC - Fordigraph
Local Primary producers
Local producers.

Greetings to Teachers of Agriculture

by Norm Robinson
(former President of the NSW Association of Agriculture Teachers
a Life Member of the NSWAAT)
DUNOON Via LISMORE



As a former Teacher of Agriculture, a former President of the NSW Association of Agriculture Teachers, and a Life Member of the NSWAAT, I wish to express my appreciation and congratulations to all teachers of Agriculture in schools in New South Wales on the excellent job you do in maintaining and enhancing the image of Agriculture as a subject in the Secondary education curriculum.

Whilst many of you have never heard of me, I have personally worked with and know a large number of Teachers of Agriculture, especially in our Government schools and I treasure such memories. I had the opportunity to renew old friendships and establish new ones, when I attended the last Biennial Conference of Agriculture Teachers at Lennox Head in January, 1995. I hope to be able to attend the 1997 Agriculture Teachers' Biennial Conference at Berry in January next but owing to family circumstances I am unable to make a definite commitment at this stage.

As I drive in retirement around New South Wales, I am impressed by the quality of the School Farms, Land laboratories, even "Ag. Plots" that I see. They are well sign-posted and are an excellent advertisement for Agriculture in that particular school. To me they indicate quite clearly that Agriculture is "alive and well in this school". I have enjoyed receiving and reading each Edition of BAAT over the past 20 years. They have enabled me to maintain my interest in the teaching of Agriculture, keep in touch with changes in Agriculture Syllabuses and examinations, and be aware of the excellent work teachers of Agriculture are doing in maintaining and enhancing the image of their subject in our Secondary schools.

The history of the teaching of Agriculture in our Secondary schools indicates a continual struggle for recognition and acceptance and even survival. Nevertheless, Agriculture has been a part of the curriculum of Secondary schools in New South Wales since about 1912 and maybe earlier. During the past 85 years, the subject of Agriculture has survived many forces of change in Secondary education and, although only modest as regards the number of students studying it, it has been respected as a worthwhile subject in the Secondary curriculum that makes a valuable contribution to the general education of students. I

believe that Agriculture has only maintained its image as a valuable subject because of the calibre and dedication of teachers of Agriculture, a unique breed of teachers indeed. Through their personal commitment and enthusiasm, teachers of Agriculture make a special effort to see that "their subject" maintains its image and viability.

When I commenced my career as a Teacher of Agriculture in 1954, Agriculture was regarded by educational administrators as a vocational subject for boys (not girls) who intended returning to a life on the farm or who intended following a career involving an Agriculture background. The introduction of the Wyndham Scheme of Secondary Education into schools in New South Wales in 1962 had a significant and positive impact on Agriculture as a secondary subject. Agriculture was no longer regarded as a purely vocational subject but as a subject that contributed significantly to the general education of students who chose to study it as one of their Elective subjects.

> *"The subject of Agriculture has considerable educational merit. By considering the ... physical, chemical, biological, economic and sociological tenets of agricultural production and the integration of these in local agricultural practice, a course in Agriculture can contribute meaningfully to a liberal education".*
>
> (Dr. Cliff Blake, Sydney University, 1969).

As a consequence, the image and reputation of Agriculture was considerably enchanced and the number of students studying it, especially girls, increased markedly. Agriculture maintained this high profile as a Secondary subject for almost thirty years. The "Metherellisation" of the Secondary curriculum in 1990 had a negative impact on Agriculture as a subject with it being cast out into the "wilderness" as regards Key Learning Areas. Another factor having a negative impact on Agriculture as a Secondary subject, is the underfunding of public education. I am very concerned about the underfunding of public schools in Australia in general and New South Wales in particular. Such underfunding must inevitably lead to a run down in resources, and a reduction in the range of courses offered and taught. If public education is to be presented as the quality, open-to-all, mixed-sex, non-sectarian system of education that is the first choice of 80% of Australian parents, then Governments are morally obliged to adequately fund public education. Agriculture is a secondary subject that has considerable potential for diversification and considerable potential value as a means of motivating all students, enriching their lives and providing them with practical and useful knowledge. I believe that because of the dedication and enthusiasm of teachers of Agriculture, Agriculture will continue to be a subject valued for its contribution to the overall general education of students and will survive as a viable subject in our Secondary schools in New South Wales. My congratulations and best wishes to you all.

Finally, I wish to congratulate and thank your BAAT Editor, John Musgrave, for the excellent job he has done in producing the several editions of BAAT over the past two years. When John accepted the position of Editor of BAAT at last year's Biennial Conference of Agriculture Teachers at Lennox Head, he stated he had definite views about the nature of BAAT that he wished to see implemented but which could only be done so with the support of the teachers of Agriculture throughout the State. John has achieved his objectives and the quality of BAAT under John's Editorship is testimony of his personal commitment to his role as Editor and to the many, many hours of hard work he has given to the task.

CURRICULUM VITAE

Norman Carl Robinson, B.A. (U.N.E.)

Born 15th August, 1934 - Dirranbandi, Queensland. Father a rural worker. Mother H.D. Primary Education by correspondence first then Cunnamulla and Charleville Sate Schools. As a consequence of the "Brisbane Line" in 1942 during W.W.II, parents moved south to North Western NSW. Attended Primary school at Bingara, Barrabra, Quirindi and Armidale.

1947 - 51	Secondary education at Inverell High School. DUX of the School - 1951.
1952 - 53	Agricultural Science Teacher Training Course, Armidale Teachers' College, Armidale.
1954 - 56	Agriculture/Science teacher, Nimbin Central School. Supervisor, Nimbin Junior Farmers' Club.
1957 - 66	Agriculture/Science teacher, Inverell High School and Officer Commanding the Inverell High School Cadet Unit. Supervisor, Inverell Junior Farmers/Rural Youth Club.
1966	Completed a Bachelor of Arts Degree by External Study from University of New England, Armidale.
1967 - 69	Foundation Science Master, Deakin High School, Canberra, ACT.
1970 - 73 S	Secondary Inspector of Schools ("Agriculture/Science" based at Head Office, Department of Education, Sydney.
1974 - 75	Deputy Principal Narrabri High School.
1976 - 80 (April)	The Foundation Principal of Kelso High School, Bathurst.
1980 - 85 (May)	Principal of Kyogle High School.
1985 (May) - 1994	Principal, Lismore High School.

GENERAL:

- A former O.C. (Lieut.) M.M.G. Platoon, 41st Byron Scottish Regiment, Lismore during the 1950's.
- Past President and now Life Member of the NSW Association of Agriculture Teachers.
- 1970 - 75 member of the Board of Secondary Education's Agriculture Syllabus Committee.
- 1970 - 75 Assistant Chief Examiner in Agriculture for the School Certificate and Higher School Certificate Examinations.
- 1970 - 73 Member of the NSW Rural Youth State Council.
- 1978 Foundation member of the NSW Secondary Principals' Council.
- 1984 - 92 Member of the State Management Committee of the NSW Secondary Principal's Council
- 1987 - 89 NSW Delegate to the Australian Secondary Principals' Association.
- Nov., 1992 made a Life Member of the NSW Secondary Principals' Council;.
- 1980 - 94 Member of North Coast Secondary Principals' Council.
- 1984 - 1988 Secretary North Coast Secondary Principals' Council.
- 1980 - 92 (May) President, North Coast Secondary Principals' Council.
- A member of Rotary for 23 years. Presently a member of the Rotary Club of Lismore West. A Past President of the Rotary Club of Kyogle.
- 24/8/56 Married Bernice Faulks (Nursing Sister) of Nimbin, a descendant of William and Magdalen Yabsley of Coraki.

* Have 3 children and 2 grandsons:

⇒ David (and Mandy - Andrew and Bradley) Auto Repair Business, Bathurst.

⇒ Elizabeth, B.A. (Macq.), Grad. Dip. Ed., Primary teacher, Sydney.

⇒ Dr. Helen Robinson, V.V.Sc. (Hons.) Syd. - Veterinary Surgeon, Ballina.

- 1995 - Living in retirement at Dunoon via Lismore NSW practising his knowledge of Agriculture in a very large home garden and orchard.

FARM FOCUS ON QUIRINDI

from Col McGilchrist, Quirindi High, 2343.

AGRICULTURE AT QUIRINDI HIGH

Agriculture is a most popular elective at Quirindi High School. It is taught in Year 7 as a Design and Technology subject. Year 8 students can elect it as a semester course.. A heavy emphasis in Year 8 is on the safe use of the school machinery. Students have to complete practical tasks such as reversing the tractor and trailer through a set course, attaching farm implements, ploughing using the rotary hoe etc.

Year 9 and 10 students can elect it as a school certificate elective (2 x 75 minute periods in a week). School days are 4 periods of 75 minutes each run over a 2 week cycle. Excellent for practical subjects like Ag.

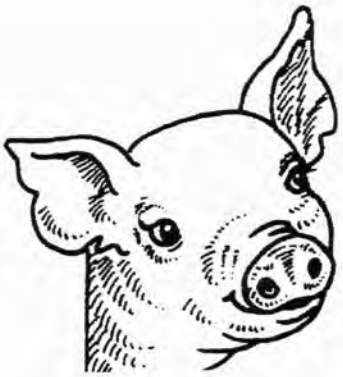
The attraction also of high calibre students has meant we get a good flow of students into the senior years. The school has had tremendous success with outstanding HSC results over the past years. Three times in the past eight years we have produced the top 3 Unit student in the North West, culminating last year with the top 3 Unit mark in the state in 1995.

General

The school farm is situated approximately 300 metres walk from the school. It covers approximately 25 acres of alluvial soil, sub-divided into 12 paddocks of which four have creek frontage. The creek is used for irrigating the school farm as well as being used by science classes in Stream watch.

The farm is nearly all under improved pasture and last year the school produced 400 bales for winter use. Some Oats is grown each winter and some areas are devoted to trials and vegetables.

The School farm is well supplied with animal yards, buildings and machinery, as well as an indoor and outdoor classroom. The school also leases a further 50 acres adjacent to the sale yards from the local shire where excess cattle are grazed.



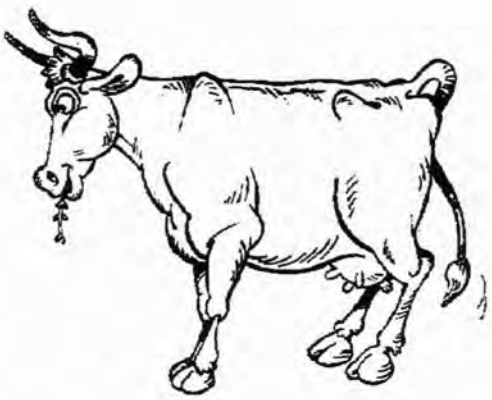
Pigs

The Piggery is modern and fully insulated. It was bought from Ag view and installed for the cost of $15,000. There is one farrowing pen and weaner and grower facilities. There are two sows and one boar. The Piggery produces four litters a year. At fourteen weeks the piglets are sold to a local butcher. We recently entered three piglets in the "Tamworth Pig and Bacon Fair". One piglet came second on the hook in the light pork division. We use the pigs for food trials, food conversion ratios and animal behaviour.

By Melanie Cherry, Year 10 Ag.



Year 10 students in the school's modern 2 sow piggery

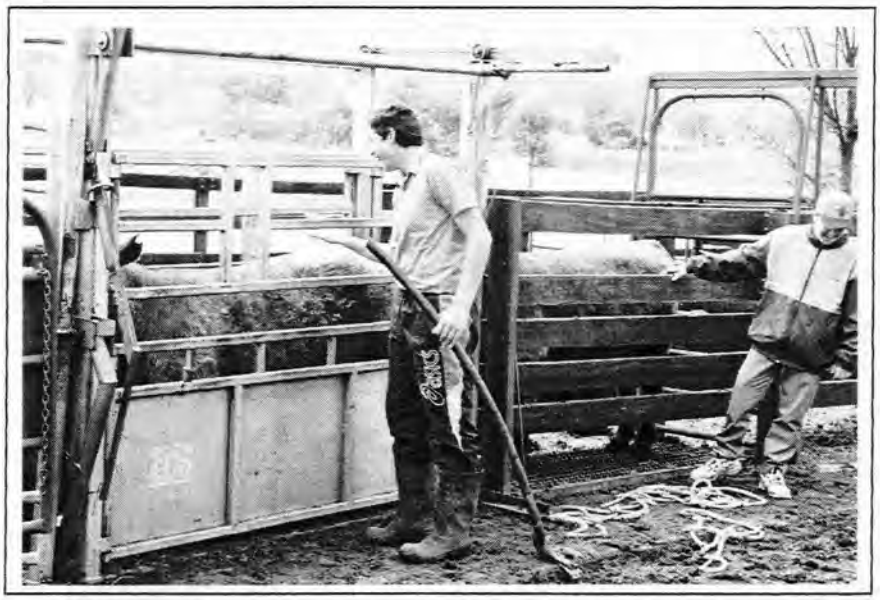


Cattle

Quirindi High has forty cattle that run on the farm, twelve of which are stud Murray Grey breeders. This stud was established in 1986. We

use this stud for showing and selling the cattle. The cattle graze on mixed pastures. Modern cattle yard facilities exist where we break in our show cattle, vaccinate, drench, clip, mark etc. There is an undercover area newly cemented to prevent getting dirty when the weather is wet. We have three housed stalls with each having sawdust, troughs and in-built feeders.

The main shows which our school attends are Sydney, Casino and Dubbo as well as local shows such as Tamworth, Quirindi and The Prime Fat Stock Show. Our stud females are sold at Scone and Armidale Murray Grey shows, and we sell our bulls at the Ag Quip Murray Grey sale.



Using the school yards and crush are Year 9 students with some of the school's stud Murray Greys



Year 11 students in the school yards preparing cattle for a show

Each year our farm donates a good animal to the home science department for cooking classes.

Josh Martin, Craig Pike, Trent McGilchrist, Year 10 Ag.

Sheep



The Quirindi High School Ag Farm runs a flock of around 18 sheep, of mixed breeds, served by a Dorset ram. Some of the breeds include Suffolk, Merino and Border Leicester. They are used mainly for classwork which includes breed identification, dissections, and husbandry exercises as well as producing wool and fat lambs for market. Recently a lamb was put on the spit in the school playground for fundraising. The farm is equipped with a small set of sheep yards including a loading ramp, and recently a $5,000, one stand shearing facility was installed in one of the larger sheds.

Kal Fitzpatrick, Year 10 Ag.



Year 10 students show off some of the school's prime lambs



Fruit and Vegetables

Junior years participate in the production of large amounts of vegetables. The main vegetables grown include potatoes, melons, pumpkins, sweet corn, beans and cauliflowers. Vegetables are boosted along by the use of turkey manure, supplied from the local Tegel turkey sheds. A new Howard Gem rotary hoe is a great asset in their production

School produce is often used in the Central District exhibit at the Sydney Show.

The school also has a small orchard consisting of peaches and grapes.

Katherine Wrenn, Year 10 Ag.

Machinery



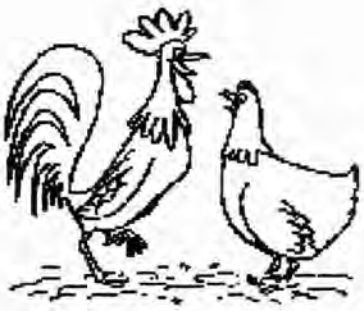
The machinery side of the farm consists of a 1990, 50 horse power Kubota tractor with a hydraulic trailer and a Ford 2000 series and a small Howard tractor and trailer. Recently the school purchased a new Howard Gem rotary hoe worth $12,000. The farm has many implements such as a super spreader, slasher, harrows carryall, 3 point linkage chisel and disc plough. The farm is irrigated by two pumps: one a submersible pump with underground mains and the other pumps up from the creek.

Jason Taylor, Robert Wood, Shane Croucher, Year 10 Ag.



Year 10 students with the Kubota Tractor

Poultry



The Poultry section of the Quirindi High School has 40 free range laying hens. The eggs are collected daily and then sold around the school.

At the start of each term between 100 to 150 chickens are purchased. They are grown on the school farm for 7 to 8 weeks. They are used for the purpose of food conversion ratios, profit/loss margins, weight gain etc. At the end of each term they are killed and processed on the farm. The school has its own plucking machine to aid in this process. They are then sold and distributed around the school.

John McVicar, Year 10 Ag.

... whoever could make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together.

SWIFT, Gulliver: Voyage To Brobdingnag

Computers in Agricultural Education

from the Computer-aided Learning in Agriculture Research Project
Primesoft Solutions: Lot 1 Mangrove Dam Road, KULNURA NSW 2250 Ph (043) 76 1173

Computer use in agricultural education and training is the subject of a recently announced research project. The project, being conducted by Primesoft Solutions - a company specialising in information technology services to agriculture - aims to increase the quantity, quality, awareness and use of computer-aided learning resources.

Funding for the project is being provided by the Rural Industries Research and Development Corporation and the Royal Agricultural Society of NSW.

The need for the project is shown by the results of a survey of participants at the Educators conference, in which 80% said there was a shortage of suitable resources and only 13% were satisfied with the quality and ease of use of available software. A lack of information on what software was available was identified as a problem by 84% of those surveyed.

The study aims to address these problems by documenting and disseminating information on current resources, initiatives, user experience and usage considerations and by stimulating further resource development by identifying and publicising common needs, requirements and market opportunities.

An innovative feature of the study will be the use of an electronic magazine as the major vehicle for disseminating study results. The input of secondary and post-secondary educators and institutions and the assistance of organisations such as the National Association of Agricultural Educators and State agriculture teacher associations are crucial to the success of the project.
Areas where input is sought include participation in Focus Group meetings, which will be held in capital cities and country centres over the next few months

Information on the study can be found on the World Wide Web at http://farrer.riv.csu.edu.au/~ahele/ and the principal investigator, Mr Anthony Hele, can be contacted by telephone on (043) 76 1173.

The Ag. Teachers Association Input is critical to the success of the Project. Please show your interest by contacting the Project Officer above. Ed.



I was on that agricultural database so long yesterday my computer started to take root.

Armidale College for Agriculture

from Bruce Burge
Armidale College for Agriculture
New England Institute of TAFE
Beardy St ARMIDALE NSW 2350
Tel No (067) 737 766 Fax No (067) 713 247

I would especially like to highlight the RURAL BUSINESS MANAGEMENT DIPLOMA which is only offered at two other campuses on a full-time basis throughout NSW. This course might appeal to your Year 12 students who are interested in a career in agriculture. We expect that current negotiations with the Agricultural Economics and Agricultural Science Departments at the University of New England will result in substantial levels of articulation from our diploma course into degree courses.

1997 Courses

Practical courses designed to provide you with the training and qualifications you need for a successful career in Australian Agriculture or Agri-business

RURAL BUSINESS MANAGEMENT DIPLOMA

Full-time 2 years, part-time 4 years

Designed to teach all you need to know about farm management or other agricultural business. You learn about sheep, cattle and crop production and the management of financial and physical resources to achieve profitable and sustainable production.

BEEF CATTLE PRODUCTION CERTIFICATE

Full-time 1 year, part-time 3 years

Designed to teach you the skills you need to manage beef cattle production and marketing.

SHEEP AND WOOL PRODUCTION CERTIFICATE

Full-time 6 months or 8 hours per week, 2 years

Designed to teach you the skills to work and manage a sheep and wool property.

SHEEP WOOL AND OTHER FIBRES STUDIES (Alpaca production)

Part-time 1 year, 5 hours per week

Designed to teach you the skills to work with fibre producing animals.

WOOL CLASSING CERTIFICATE

Full-time 18 weeks, part-time 72 weeks

Designed to teach you the skills to become a professional Wool Classer with AWEX.

HORSE INDUSTRY PRACTICE CERTIFICATE

Full-time 1 year, part-time 2 years

Designed to teach all you need to know for a career in the horse industry. Electives include trackwork riding, jumping and pleasure horses.

RURAL SKILLS TRAINEESHIP
Full-time 1 year, on-farm and College
Designed to develop your rural skills, knowledge and personal attributes while currently employed as a rural worker.

BROAD AREA CROPPING OR COTTON (Option)
For Diploma students electing to take modules specific to Broad Area Cropping or Cotton - the Moree Agricultural Campus provides all the essential facilities and equipment needed for specialist training.

CAN WE HELP WITH YOUR CAREER?

If you would like more information about the Armidale College for Agriculture courses - please call us immediately at Armidale TAFE on

067 73 7700

Fax 067 71 3247.
or fill in and send the "I'd Like to know more .." form to:
Armidale College for Agriculture
Freepost 99
New England Institute of TAFE
Beardy Street
ARMIDALE NSW 2350

I'd like to know more ...

If you would like more information about the **Armidale College for Agriculture**, New England Institute of TAFE courses, simply phone on 067 73 7765 or post this reply coupon to the **Armidale College for Agriculture** (no stamp needed).

Please indicate the course/s you would like to receive information about ...

- ☐ Rural Business Management Diploma
- ☐ Beef Cattle Production Certificate
- ☐ Sheep & Wool Production Certificate
- ☐ Sheep Wool and other Fibres Studies
- ☐ Wool Classing Certificate
- ☐ Horse Industry Practice Certificate
- ☐ Rural Skills Traineeship
- ☐ Broad Area Cropping or Cotton

PLEASE PRINT

Name _____

Address _____

_____ Postcode _____

Telephone _____ Age _____

To help us help you — where did you learn about the **Armidale College for Agriculture**?

- ☐ School/College
- ☐ Advertising — Press, TV, Radio
- ☐ Other _____

HOW LONG DOES FRESH MILK KEEP?

A simple Controlled Experiment to use.

Fresh milk is very temperature sensitive, so the colder you store your milk the longer it will stay fresh. Allowing milk to reach room temperature, or exposing it to sunlight will affect its life and taste. Here is a simple guide on how long milk will stay fresh.

8 to 10 days at 4° Celsius
1 day at 16° Celsius
½ day at 21° Celsius

GIRLS AND BOYS AT SCHOOL

from Gender Work - Teachers' Guide 1994



Culturally, we attach a great deal of importance to the existence of two different sexes. Women's and men's lives are structured so differently that an ordered social life depends on individuals successfully identifying the sex of others, and on their ability to behave in such a way that others can attribute them with the correct sex role, or gender. What is deemed acceptable behaviour for one sex is often considered unacceptable for the other.

GENDER AND EDUCATION

The contribution of schooling is now recognised as one of the most important processes by which gender hierarchies of power in society are reproduced. Schools reflect the inequalities of society and can contribute to the development and fixing of gendered identities by encouraging sex-stereotyped subject choices, thereby limiting girls' self-esteem, confidence and career aspirations. This process of reproducing inequity begins in early childhood and continues through primary and secondary schooling, and girls carry the consequences of this into adulthood and into most aspects of their lives.

Gender stereotyping and segregation is reinforced in the classroom through:

- stereotyped texts and materials
- the allocation of tasks among children
- discipline procedures
- classroom and school organisation
- teachers' different expectations of girls and boys
- the unchallenged gender constructions of the children themselves



Classroom 2000 Considerations

Information from the Commission for the Future and the Finn-Mayer Report. 1992.

Some factors that may be impinging on our classrooms:

- 80% of the children in Year 2 this year will enter careers that don't exist now, involving technology that has not yet been invented.
- By the year 2000, service jobs will form 90% of the economy.
- Employees will change professions, not just jobs, four or five times during their working lives.
- 90% of the work force will work for companies employing less that 200 people.
- A weekday edition of the New York Times currently contains more information that the average person came across in 17th Century England.
- The amount of information in the world is doubling every 2.5 years.
- When our Year 2 students complete Year 12, the body of knowledge will have doubled four times since 1988.
- Today, engineers find that half their knowledge is obsolete in 5 years.
- Children born in the year 2000 will live to be 81 years old on average compared with 75 for children born in 1986.
- Graduates will have been exposed in a year to more information than their grandparents were in a lifetime.
- 90% of information and knowledge required in the year 2000 has yet to be invented.

Agriculture is the noblest of all alchemy; for it turns earth, and even manure, into gold, conferring upon its cultivator the additional reward of health.

Chatfield.

biotechnology

Australian Science, Autumn Issue, 1994

According to the CSIRO's Dr John Wheaton, biotechnology will reduce chemical use in agriculture. Dr Wheaton said:

"Food from genetically modified plants will contain fewer chemical residues because resistance to pests and disease will be built-in, therefore cutting down on the need for chemical spraying. We are working towards helping farmers reduce crop losses and respond to the ever-increasing consumer needs for quality produce with fewer chemicals".

A field trial on genetically engineered potatoes, conducted by the CSIRO's Dr Peter Waterhouse, showed that the modified plants outperformed the unmodified plants when exposed to high levels of disease. The trial was carried out in a quarantine area at the QDPI Gatton Research Station using conditions specified by the Commonwealth Governments Genetic Manipulation Advisory Committee.

The potatoes were modified to resist the potato leaf roll virus, a disease which can cause up to 50% yield loss in Australian potato crops - an industry worth $300 million each year. The genetically engineered potatoes could be commercially available in about three years.

The world's first genetically engineered sugar cane was planted near Brisbane in 1994. Botanists at the University of Queensland and the Bureau of Sugar Experiment Stations have developed new varieties with higher sugar and built in resistance to pests and disease.

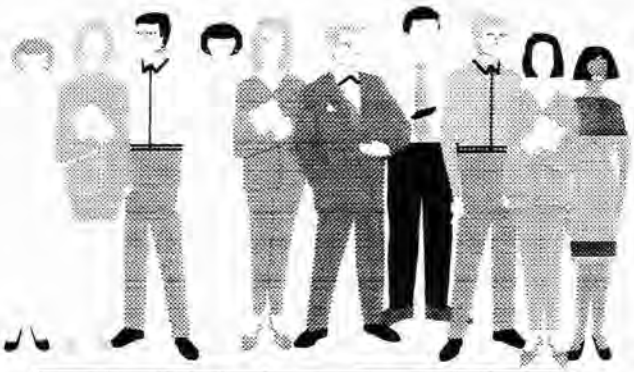
Professor Robert Birch said gene transfers into sugarcane and other grass-like plants seemed a technological impossibility six years ago.

"The use of locally designed and manufactured gene guns and improved tissue culture techniques made the break-through possible. Genetic engineering has great significance for sugar cane breeding because it could reduce the costs and time taken to produce new varieties."

Sugar cane used in the current trial carries "reporter genes" to detect transfer of genes to successive generations.

It is not known where he that invented the plough was born nor where he died; yet he has effected more for the happiness of the world than the whole race of heroes and of conquerors who have drenched it with tears and manured it with blood, and whose birth, parentage, and education have been handed down to us with a precision precisely proportionate to the mischief they have done.

Colton



Have YOU got a NETWORK YET?

from James White, T and D Co-ordinator
Armidale District Office

The following material is adapted from an article by Helen Adie "Establishing Effective Collegial Groups" in the Practising Administrator.

Networks are an effective mechanism to allow professionals to meet regularly and provide mutual support through the sharing of knowledge, respect, advice and experiences. Heather Adie explains how.

Many teachers experience a feeling of professional isolation. This can apply especially to Agriculture teachers who are in some sense "on their own" with no other person filling a similar role.

A network is a group of teachers who meet on a regular basis to learn together and to support one another in their ongoing professional development. Such groups can be for specific reasons eg. for support, for learning and sharing experiences, for problem-solving, for planning and at times, for lobbying and influencing others.

NETWORKS ARE LIKE COLLEGIAL GROUPS.

In a collegial group, people take the time to really get to know colleagues and make a commitment to assisting each other over a period of time, whatever the tasks may be. This constitutes a stronger commitment to the people than to the task at hand. Also, tasks may be individualised ones and may be different for every member, so that combining to achieve a group task may occur somewhat infrequently.

It is essential that your network establish a regular time and place to meet, so that members can note these details into diaries for the whole year and can plan other commitments around these dates.

It may be interesting to rotate meeting venues by meeting at members' schools in turn. This has a two-fold advantage for all members, in that he/she could host the group and at the same time share particular facets of his/her school organisation on site.

He that sows his grain upon marble will have many a hungry belly before his harvest.
Arbuthnot.



Acid test: our degraded soils now pose a health risk

By Bob Beale Science and Environment Editor. Sydney Morning Herald

Australia faces massive new land degradation problems and potential public health risks because vast areas of soil are becoming increasingly acid. The first major national study of the problem reveals that 55 million hectares of new land is at risk, another 35 million hectares are already affected, and the total area in danger of becoming infertile embraces most of the nation's most productive soils. It includes the south-west corner of the continent and the fertile green crescent of south-eastern Australia and most of the east coast, according to an independent study commissioned by the national Land and Water Resources Research and Development Corporation. Rural production worth billions of dollars to the national economy is under threat unless the problem is better recognised and corrective action is taken, according to the study's author, Mr John Fargher, a prominent natural resources consultant.

Besides the risk of degrading farm land falling beyond repair, the problem has raised fears that it may have an impact on human health, Mr Fargher notes. Left untreated, highly acid clay sub-soil can break down and release large amounts of dissolved aluminium into ground waters that eventually find their way into rivers and dams, a trend already apparent. The intake of soluble aluminium has been tentatively linked by some medical researchers with Alzheimer's disease. The aluminium issue is also of concern on other health grounds, and has a potentially costly impact on some urban water supplies, according to the director of the Co-operative Research Centre for Soil and Land management, Dr Ann Hamblin. *"Aluminium in water is highly toxic and it's not good news, whether it's linked to Alzheimer's or not,"* she said. It also had the potential to cause chemical changes that could turn water supplies brown and so pose a significant purification cost.

Mr Fargher has found that although the science of the problem is well understood, most farmers and graziers and their technical advisers have underestimated its potential impact and have shown little enthusiasm for using the simple corrective treatment of adding lime to their soils to neutralise acidity.

In the 1989 - 90 financial year, only 5,000,000 tonnes of lime was used by Australian farmers. The study found five times that amount should have been used to treat extremely acid soils, and another 2.25 million tonnes to prevent or correct lesser acidity problems. Considering the potential combined impact of acid soil and other land degradation problems, he added: *"If these trends continue, you start to say that some of these farmers just aren't going to be around a generation from now."*

Australia had so far suffered few problems with soil acidity because so much of its soil was naturally high in lime content. Removing products from the soil - for example, by clearing, harvesting or grazing - removed some lime content and the pH level (a measure of relative acidity or alkalinity) would fall below 7.0. As the pH level fell, soil acidity increased.

"We've been taking products off the land for 100 or 200 years and the pH is dropping very fast now in many areas," Mr Fargher said. *"The implications for Australia are really quite scary. In many of the NSW soils the pH is dropping about one unit every 23 years in sandy soils and one unit every 100 years in clay soils."* A drop of pH unit in clay soils equates to a loss of up to 5% of the dollar value of production from the land. By the time pH drops below 4.0, clay soils release aluminium.

Oft did the harvest to their sickle yield;
Their furrow oft the stubborn glebe has broke;
How jocund did they drive their team a-field!
How dow'd the woods beneath their sturdy stroke!
Gray, *Elegy Written in a Country Churchyard*

BEHOLD THE BUYING POWER OF CHINA

We have all heard about the "tiger economies of Asia" and there is no more exciting prospect for Australia than the marketplaces of China. The following facts and figures give a good indication of just how furiously China is growing, and how that growth will convert into demand for food, fibre and services.

- China's population is estimated to increase by 490 million people to 1.6 billion by 2030.
- Currently China has 22% of the world's population but only 7% of the world's agricultural land.
- China's domestic production shortfall of wheat, rice and other grains is expected to rise from 6 million tonnes in 1990 to 216 - 378 million tonnes in 2030. Estimates predict this will increase demand from 335 million tonnes in 1990 to 479m tonnes in 2030.
- Increasing adult beer consumption by one bottle per person would require 370,000 extra tonnes of grain.
- The Chinese telecommunications market is expected to spend $67 billion between now and 2000.
- The Chinese Government has a goal to increase annual egg consumption to 200 eggs per person. This would require an extra 24 million tonnes of feed grain.
- Drought and flood cost the Chinese 40 million tonnes of crops per year. In an attempt to alleviate this they are embarking on major irrigation projects which will increase their water supplies by 50 million megaliths which is equivalent to 31 Blowering Dams, 36 Copeton Dams or 42 Burrendong Dams.
- By 2000 China will consume 25% of the world's wool, compared with 18% in 1992 and 7% in 1980.



Agricultural Bike Safety Video

Rural Industries Course

Covers all skills required to ride on an Agricultural bike. Video lasts about 45 minutes.

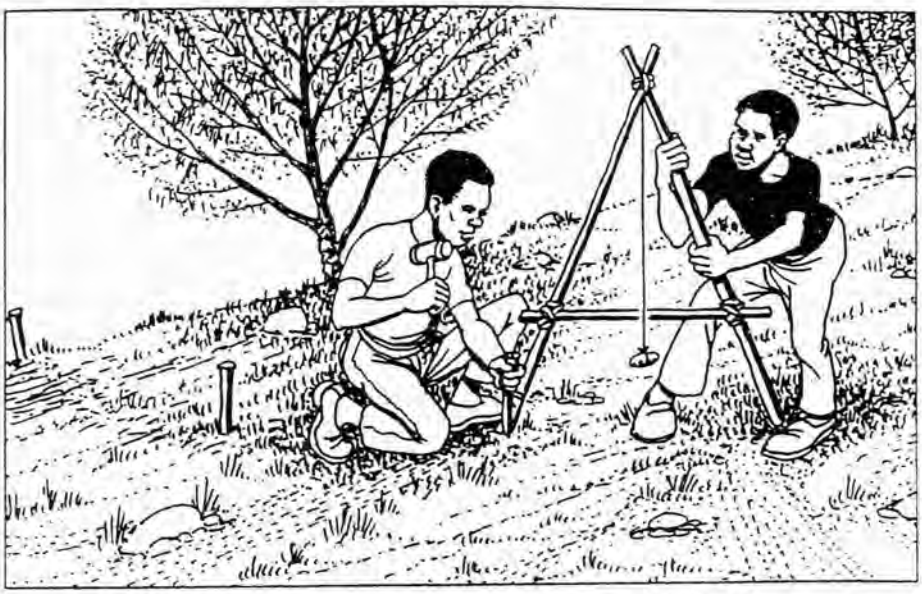
Costs $30 + postage

CONTACT: Mr Tim Robertson
Teongi enterprises
ARMIDALE NSW 2350
Ph (067) 758 538



A Low cost Method for making Contour Lines – for a Class Exercise

from Agroforestry Today. Jan/Mar 1992



Drawing: T. Hirst

Two people mark out a contour line using an A-frame.

THE IMPORTANCE OF THE CONTOUR

Contour lines connect points of exactly the same elevation. Because water does not flow along a contour line, a barrier that follows the contour will have the maximum impact in preventing water or soil from moving down the slope. Conversely, if structures such as banks or hedges are not laid out on the contour, they will channel the flow of water, increasing its concentration and force. This can increase erosion problems, resulting in rills and gullies.

Sometimes barriers and ditches are built off the contour to channel water on purpose. In high-rainfall areas, cut-off ditches may be sited down slopes to drain away excess water. In dry areas, small banks and ditches may be built around plants to channel water to their roots. But for erosion control, it is crucial to site such structures exactly on the contour.

THE A-FRAME

The A-frame is named for its shape. It is made of poles that form the letter A. All you need is three poles, a piece of string and a stone.

First, take two poles of the same height - from 2 to 3 metres - and tie them together at the top. Tie a third pole horizontally across the two poles about 1 metre from the bottom. Hang a string from the top where the two vertical poles are joined and tie a stone to the end of the string. The stone should hang just below the horizontal pole.

TEACHER TRAINING: Where are the new Agriculture Teachers Coming From?

The Editor



Recently I had a trainee teacher from the Southern Cross University at Lismore assigned to my class. We talked about who/where new Agriculture Teachers were going to come from. This gave me concern. The following is an extract from "Qualification Requirements for the new areas of teaching the Senior Years of Schooling" (NSW DSE, May 1995).

"ELIGIBILITY TO TEACH TECHNOLOGICAL AND APPLIED STUDIES (TAS) SUBJECTS

2.1 Areas of Teacher Classification

Areas of teacher classification within the TAS key learning area are:

- design and technology
- engineering science
- hospitality
- food technology
- metal and engineering applied studies
- technics
- textiles and design
- technical drawing
- computing studies
- agriculture

The TAS KLA contains a diversity of subjects which are united by an underlying philosophy. No individual teacher would be expected to teach all subjects within this KLA.

Teachers may be classified to teach one or a number of subject areas within the TAS KLA. Teachers wishing to specialise in TAS should be able to teach the mandatory design and technology 7-10 course and at least one other subject in the TAS KLA.

Background about the TAS KLA and details about TAS subjects are provided in Appendix A. Classification guidelines for the industry studies and content endorsed hospitality courses, and the industry studies metal and engineering course are provided in Appendix D.

2.2 Examples of methods of gaining classification as a teacher of TAS subjects

Method 1

Students completing appropriate university courses endorsed by the DSE for employment purposes who wish to teach within the TAS KLA must have undertaken a relevant degree with a major in the specialisation in which they wish to teach. Appropriate education studies and methodology are required.

Examples:

1. *completion of a Bachelor of Education (TAS) through a higher education institution will qualify a teacher to teach design and technology (and other TAS subjects depending on specialisation).*
2. *Completion of an appropriate Bachelor degree plus a Diploma of Education (with relevant methodology) through a higher education institution will qualify a teacher to teach design and technology (and other TAS subjects depending on specialisation).*

Method 2

Current teachers from TAFE or other systems wishing to teach one or more TAS subjects in schools will be required to:

- possess qualifications, including teacher education qualifications, to teach the relevant subjects as a full-time TAFE teacher or, if from a system other than TAFE, possess the entry qualification required in method 1, or be eligible to teach relevant subjects as full-time TAFE teacher; and
- demonstrate education knowledge and teaching methodology appropriate to working in a secondary school

Example: *A full-time TAFE teacher of sheep management and wool will be eligible for classification as a Department of School Education teacher of sheep husbandry and wool.*

Method 3

Qualified teachers may undertake relevant approved additional training to build on initial qualification and/or experience in order to be classified as a teacher of TAS subjects.

Example: *A teacher of art who completed the Design and Technology Training Agents (DATTA) course will be eligible for classification as a teacher of design and technology.*

Method 4

Experienced teachers who have verified skills and experience in TAS subject areas may be eligible for additional classification.

Example: *An experienced teacher of computing studies will be eligible for classification as a teacher of computing studies.*

Method 5

The prior learning, industry experience and skills of people wishing to teach subjects within TAS may be acknowledged:

(i) as part of a further accreditation of someone who is already a trained teacher, or

(ii) as part of an advanced standing process in a tertiary teacher education process.

Example: *A food technologist with industry experience and TAFE certificates, who completes appropriate teacher education will be eligible for classification as a teacher of food technology."*

ALL IS NOT AS IT SEEMS (I think!)

Some "off the cuff" comments as I 'phoned around for quick comments;

- massive shortage of Agriculture Teachers
- Few students going into Agriculture Teacher Training
- Armidale Uni ... continuing their traditional Ag/Junior Science Dip Ed. They have a computing option but are not intending to change into Design and Technology.

It would seem there are three possibilities of Agriculture Teacher Training in NSW

1. Charles Sturt University, Wagga. Offers B Ed. (TAS) - 4 years, Design and Technology and one of Agriculture/Computing/Food Technology. Agriculture only Year 7 to Year 10?

2. New England, Armidale. Offers B. Ag - 3 years? + Dip. Ed. and B. Rural Studies.

3. University of Western Sydney, Hawkesbury. Offers B. Systems Agriculture - 3 years + Dip Ed.
4. University of Sydney - details unknown

5. University of Queensland - B. Ag. Science - 4 years.

PLEASE:

1. Could someone tell BAAT where the Trainee Agriculture Teachers are?

2. What Courses are now Suitable for trainees in this area?

3. How many new Agricultural trained Teachers have joined DSE ranks?

PS: I believe there are very great concerns about Teacher Training in TAS KEY LEARNING Areas also. Here is an area the Association should urgently research.

If we estimate dignity by immediate usefulness, agriculture is undoubtedly the first and noblest science.
Dr Johnson

Walgett High School

from Darren Radford, Walgett High School, Walgett NSW 2832
Ph (068) 281022 Fax (068) 281994

THE BIOREGION

Walgett is situated at the junction of the Namoi and Barwon Rivers. As such, Walgett marks the end of the Namoi River Catchment. The bioregion is a dryland area supportive of extensive grazing of sheep and cattle, opportunity cereal and pulse cropping, irrigated cotton, opal mining and tourism. As a marginal area, land management is crucial to support the fragile ecosystem and ensure landuse is sustainable. Recent years have seen an increasing awareness of this which will hopefully be followed up by Land Care projects, field days and Property Planning workshops.

THE SCHOOL

The school is located on a full block not far from the middle of town. The school has a student enrolment of 215 students who are educationally enabled by 69 teaching and ancillary staff. The school caters for students from Walgett and Lightning Ridge as well as smaller communities and farming families. The Distance Education Centre caters for 36 additional students from a considerably wider area.

THE AGRICULTURE LEARNING CENTRE

Agriculture is taught as part of Design and Technology in Year 7 and as an elective in Years 9, 10, 11 and 12. Agriculture is also taught through the Walgett Distance Education Centre in Years 11 and 12 as is Horticulture. As places for Vocational Education courses become more available for schools remote from regional centres, we hope to add a Rural Industries course to this list. There is one agriculture teacher and a farm assistant who is employed for 22.5 hours per week. Agriculture classes are taught at a variety of locations around the school as well as the school farm. The philosophy of agriculture described by Greg Reid, Nimbin in the Spring '95 BAAT suits us well ... 'agriculture as a commercially applied ecology'.

Year 7 Design and Technology students study trellis systems, irrigation assembly and cost analysis, seed marketing, rotary hoe operation and site analysis. Word processing, graphics and spreadsheets are incorporated into this programme. This is a 13 week rotation. The aim is to teach students about agriculture relevant to their local environment in the context of Design and Technology.

Junior Agriculture students study vegetable growing, permaculture, tractor and farm safety, sheep, horticulture, streamwatch, and experimental technique in Year 9. They learn about dryland systems and farm planning, beef, cereal production

and crop rotation, agriculture in ancient civilisation, computers in agriculture, and irrigation systems in Year 10. Selected students attend the FMAHS Research in Agriculture course in August and the Rotary Youth in Agriculture camp at Coonabarabran in October. Junior agriculture students also set the pace for the schoolwide SimFarmer of the Year competition in September.

Senior Agriculture students focus on cotton farming for their Farm Case Study, Production and Farm Product Study. Beef cattle provide a study context for animal systems and land Management is a locally important elective. Senior students are encouraged to submit high quality typed assessment tasks to include in their personal student portfolio. Students are encouraged to attend Ag Quip, Mudgee Small Farm Field Days, Walgett Show and local field days. 3U Agriculture projects are done in conjunction with local properties and government departments.

THE SCHOOL EXPERIMENTAL FARM.

The school farm has undergone a dramatic transformation in the past two years as a result of the sale of part of it to the Teacher Housing Authority in 1995. The proceeds of the sale have enabled the remaining 3.3ha to be developed cohesively.



Computer controlled irrigation vege beds and plant propagation shade house.

Development at the school farm involved a redesigning of the school farm plan to facilitate stock movements and to incorporate windbreaks and wildlife corridors. With the removal of goats and regeneration of pastures the old ten strand electric fences have been replaced by hinge-joint and barb with steel strainers and stays cemented in position. An eight foot security fence has also been incorporated as a precaution against dog attacks from the town. A single access lane now connects all stock paddocks to the stock yards. The stock yards have been refitted with a new entry, a cattle crush mounted on scales and a ramp for loading stock on to trucks. Mobile yards have also been included to allow a feedlotting area for nutrition trials and to take stock off paddocks when they are prone to compaction when wet. The mobile yard will also be used for handling stock away form the school on agistment.



Limousin x Santa gertrudis cattle and stockyards

The school farm was also the centre of attention for a Disadvantaged Schools Programme Horticulture Project. In 1994 trees native to the Walgett area, other parts of Australia, and other dryland countries were selected and trialed. Despite being established in a drought and drowned in 12" of rain in January 1995, most of the trees survived. Due to their ability to cope with these heavy soils and variable climate, greater numbers were planted in 1995 and the deceased were replaced. Fruit and nut species include apricots, figs, pomegranates, olives, pecans, walnuts, passionfruit and grape vines, lemons, oranges, blood oranges, lemonades, mandarins, limes and mulberries. These trees were heavily mulched with newspaper and hay. Drip irrigation systems suitable for home irrigation systems were put in place incorporating 19mm dripline, inline emitter tubing encircling the trees and a small water computer and distributor to control the system.

Other tree species included cadagi gums, silky oak, white judas tree, stone pine, osage orange, acacia, melaleucea, callistemon, gravillea, pawlonia, Agentinean ombu, cork oak, desert ash, kapok, locust, and ginko trees. In 1996, raised vegetable gardens were built and densely planted with a mixture of small trees, flowers, herbs and vegetables. Perennials provided a backbone which was supplemented by annuals. Water needs were met by a Raindail water computer, mulching, windbreaks, and shade from surrounding trees and a central shadehouse. A kit gazebo acts as an outdoor learning centre.

The old orchard area has been retrofitted as windbreak. In the new orchard area a sheltered seating area has been built at the centre of the fruit trees, grape vine trellises, yabbie dam, and water controller.

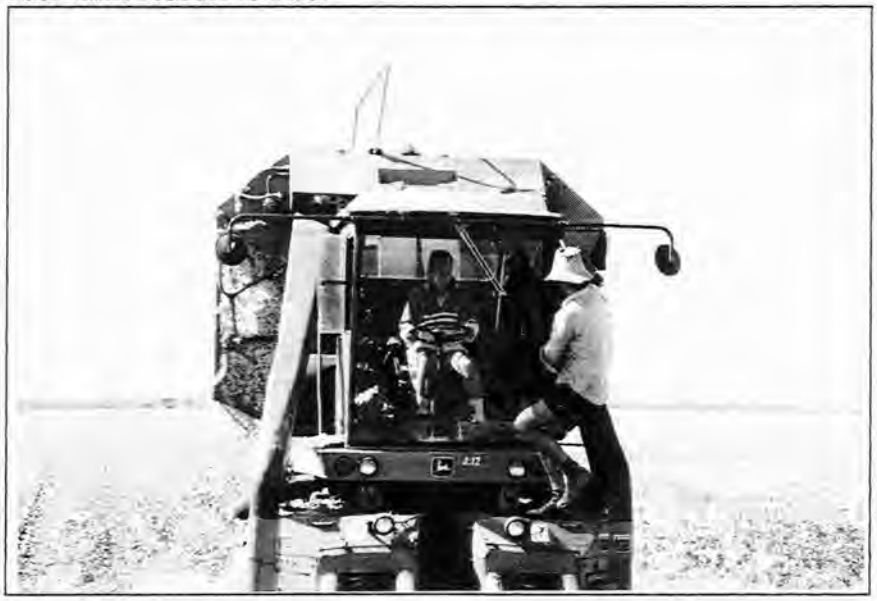


Grape trellis in old orchard.

A rotational grazing area is being experimented with in the biggest grazing paddock. Electric fencing put up by the students has subdivided the block to give greater grazing control and enabling areas to be closed off when watered. A central watering station is accessible from all areas.

Steer fattening has proved a profitable use of grazing areas. Students enjoy videoing themselves handling stock and we can edit the movies on Avid Videoshop using a PowerPC with AV card. We haven't followed through with hoof and hook competitions mainly due to the long distances to venues and lack of suitable stock. Possibly carcase competitions could be carried out via Computer Aided Livestock Marketing descriptions.

The school farm has proven to be a useful resource to a range of faculty groups with archaeological digs by the History class (which they aptly titled "Raiders of the Ag Park"), ecosystem and insect studies in Science, guess the steer weight at school fetes, etc. Marine studies and Maths have been encouraged to make use of the school farm resources also.



Farm Case Study - Cotton Growing

2nd Floor NFF HOUSE 14-16 Brisbane Avenue
PO Box E 10 Queen Victoria Terrace
CANBERRA ACT 2600

RURAL INDUSTRY TRAINEE ASSOCIATION INC

Phone 06 273 2308
Freecall 1800 647 798
Fax 06 273 4811

RURAL INDUSTRIES RESOURCES

- **Distance Learning Modules produced for Rural Trainee Programme**
- **Excellent resource material for Rural Industries CEC**
- **Set of 16 Training Modules available for $60 from Geoff Bloom at contact above.**
- **Each Module includes**

1. **Farmers Guide**
2. **Trainees Guide**
3. **Best Practice Guide**

AVAILABLE TRAINING MATERIALS

On-farm training materials are available in the following subject areas.

COMPULSORY TRAINING MATERIALS	
AG 001	the Rural Workplace
AG 002	Personal Skills (Rural)
AG 004	Rural Teamwork
AG 006	Chemical Safety
AG 008	Rural Calculations

ELECTIVE TRAINING MODULES			
AG 009	Farm Welding	AG 017	Farm Water Supplies
AG 011	Farm Vehicle Operations	AG 032	Pest Control
AG 014	Farm Tractor Operation	AG 041	Basic Chainsaw Operations
AG 014	Concreting	AG 042	Bush Fire Safety
AG 015	Electric Fencing	AG 043	Farm Trees
AG 016	Conventional Fencing		

NOTE: The Rural Skills Traineeship comprises 86 modules in total.

TAGASASTE
(Commonly called Tree Lucerne or Tag)
(Chamaecytisus Plamensis)

Raising Open Rooted Tag Seedlings for Transplanting

Per kg of seed there are approximately 44,000 seeds. Tag's root system is very vigorous, but is very susceptible to root rot problems and every endeavour should be done to keep the root system away from potential problems such as air and water pockets, water logging and soils very high in organic matter or radiata pine needles.

When producing seedlings the aim is to produce a plant with a stem thickness of 10 to 8 gauge wire after being cut back 15 to 20cm in height with a root system of 10 to 15cm and the initiation of a multi-branch frame.

The bed to raise the seedlings should be held up by two 15 to 20cm boards placed about 60cm apart (an area 300 x 60cm is enough to raise 10,000 seedlings). The width should be sufficient for a spade to be put under the boards from both sides to cut the tap roots off 2 weeks prior to transplanting.

The soil used to fill the bed should be a friable loam and even pure fine sand preferably free from organic matter especially from grasses. Fill the bed to within 10mm of the top level and consolidate the soil.

The site to put the seedling bed should be in a hot dry wind-free aspect which sunlight can get to all day (eg. beside a north wall of a building).

Mass seed the bed (¼kg [21gms] to a bed 360cm x 60cm) cover with fine sand and loam, water till the bed is saturated then cover with hessian, wheat bags, carpet etc. and black plastic on top for 3 to 5 days. The covers have to be removed before the seed shoots. Clear plastic clear of the bed, can be used to keep a high moisture, humidity area for germination only. Once most seeds have shot, care to avoid dampening off should be the aim. Only water early in the day, don't water late in the day, and don't use plastic covers.

Water with a watering can so as to regulate the amount used and to fertilise the plants using say "Thrive" or Aquasol" in small quantities at weekly intervals.

Once the plants have developed past the two leaf stage only use enough water to keep them alive and only water early in the day.

When the first of the seedling s reach 20cm they should be clipped back to 15 cm so as to let smaller plants catch up. Keep doing this say 3 or 4 times so that all plants have been clipped. Make sure all clipped material is removed from the bed and the hedge clipper or dagging shears etc used are sterilised each time before use. The plants then can be left grow to about 50cm. Don't let individual plants dominate.

The use of a fungicide spray during the growing of the plants can help prevent "Dampening off" but shouldn't be used close to transplanting time as it could affect good inoculation.

Transplanting

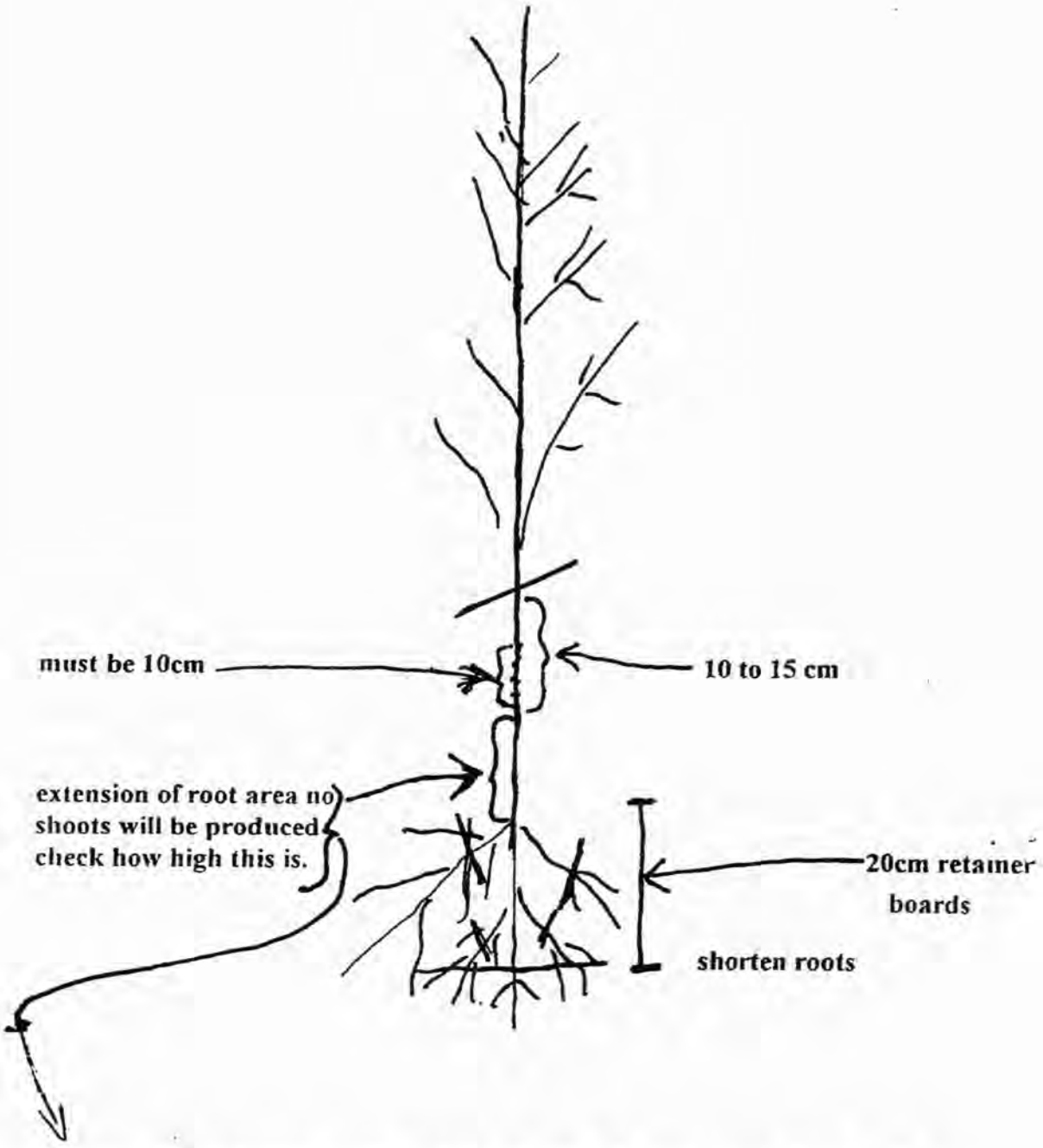
Transplanting should occur after the last frost period or at least 3 months before the first expected frost.

Two weeks prior to transplanting clip plants back to 10 to 15cm (see diagram) which should remove all the leaves. (If any quantity of leaf is present below the clipping height remove by spraying with a light applicant of "parquet" or "spray seed" to shed these leaves.

The bed should be well watered before these operations. Then slide a sharp 'clean' spade under the boards from both sides to cut the tap root of all plants trying not to let air into the root area.

Tagasaste Seedling ready for preparation for transplanting

A single stem plant about to be turned into a multi-stemed tree. The more limbs formed low initially the higher the production potential.



This area will be pale green to white and smooth. Mark the stem at ground level, pull out a plant, washit and measure how far above ground level the root material extends. You have to check this as some people have produced stemless plants, which can't grow. You must have a minimum of 10 cm of bud-producing tissue.

Approximately 14 days later the plants will be ready to transplant. Remove the boards and pull the plants out of the ground (new leaf buds should be evident and pin-head size), shake soil from the roots and clip any excess lateral roots. Don't cut the tap root as it should have sealed and would have initiated a new tap root or roots.

Store plants between wet bags. At this time inoculation should be done. Mix soil sample supplied into a paste with water and dunk the plants into it or apply with a watering can. Do the same if you buy inoculant from "Root modules" Pty Ltd at Woy Woy.

Keep the 1kg of soil supplied in fridge until needed and keep moist. It should not dry out in the plastic bag. It should be enough to treat all seedlings raised from 1kg of seed.

Dug plants will keep wrapped in wet bags for up to one week but the quicker planted the better.

Looking closely at the stem of the seedling you will see (a must) small pin head size buds developing. Care should be taken to avoid damaging them. Don't dig until they are visible.

The aim of using leafless transplants is to allow roots to start to redevelop before a major leaf system is developed. Regular clipping early in the plant life also helps develop a strong root system.

Most Tag plants raised by other methods usually have a small knotted root system with no vigour and therefore produce unproductive trees. Especially those raised in tubes, milk cartons and suchlike usually have a large leaf area which the poor root system can't support.

Plants raised by the "open rooted" system are very dense in the bed and will have no leaves present below the cutting height so don't be afraid to sow the seeds almost touching.

Transplanting Site Preparation - Do's and Don'ts

The area selected should be well drained and the site not subject to water laying. If possible the planting row should be cultivated and preferably sprayed with "Roundup".

Don't deep rip as that will cause water or air pockets which will kill root systems or allow root rot organisms to attack the root system.

Surface cultivation is all that is required and should be done well in advance.

Ridging of the soil to form a planting mound is ideal eg. 15 to 30cm high and 60cm wide and plant on top of the mound and **don't** form a water basin around the plant. If adequate moisture is present the plant won't need watering in. Every endeavour should be done to hold soil moisture. The use of plastic, bags, compost straw, paper, cardboard etc. are ideal to retain soil moisture and prevent unwanted weed growth.

All of the department's trials planted in the 80's used 'Gold' or 'Sinbar' for weed control. Looking at these sites of late, no healthy plants exist except for control areas, so the "hoe" seems the best weed control measure. Open rooted plants can withstand most competition except for vigorous thistles and grasses such as phalaris etc. in the first 6 months.

During transplanting reject bent and twisted plants as they are likely to be prostrate or weeper type plants. If you want these types of plants you should establish your plants from cuttings of tissue culture.

Honey Production

Totally depends upon the weather conditions at flowering time as most trees without manipulation will flower from July to August. This year most trees flowered July to November because of last year's dry summer and a very heavy seed set and the bees did well. Other years a high bee loss is common. The late flowering this year and dry conditions made conditions ideal for honey production. Most years this is not the case. In other areas high honey production may occur each year for 2 to 3 months.

Allowing the trees to flower and produce seed is a very heavy stress on the plant and should be avoided if fodder is the aim.

Grazing

All animals will do lethal damage to the plant if grazed for any duration. Sheep and goats and deer will 'ringbark' the tree within days of introduction and therefore it has to be cut and carted to the animal. Cattle (hornless) are being successfully grazed in W.A., but the

trees must be cut back after grazing to keep regrowth at a grazeable height.

Along with Tag some other fodder high in carbohydrate material should be used eg. Grain or quality roughage. Mineral content of Tag is very good eg. Calcium etc.

Pest and Diseases

Very few insect problems have ever been encountered. Cedar grubs have been a problem when trees are grown near buildings where the bugs can hide during the day. They have, never been a problem in open fields. Aphids will only attack weak trees.

White ants can attack older plants but don't seem to do damage to vigorous trees.

Virus affected plants have occurred and when they do they should be removed or sprayed with "Roundup". Care must be taken not to get the drift on other plants. Mistletoe can be common - remove affected limbs.

Fertiliser Requirements

Tag is a very heavy feeder on soil phosphate so an annual top dress with 100kg of super per ha. is essential.

The seed supplied is from my tissue cultured block. It has been fully scarified to nursery standards. Stored in a dry place it would have an endless life.

Transplanting Configurations

Plants spaced 1 meter apart within the row is ideal. Dual rows close together are ideal for fenceline windbreaks eg. two rows 1 meter by 1 meter staggered. By doing this one row of alternate plants can be harvested maintaining a windbreak.

Harvesting

Once a year harvesting will always out yield more frequent harvesting. However, the protein quality will be higher with younger material.

If the trees are cut after December each year (at Orange) the regrowth will not flower the following year. If harvested from June to December it will flower the following winter and spring.

Never totally defoliate a limb or tree as recovery will be very slow or maybe kill that plant or limb. This is very important when harvesting during late autumn and winter. Always cut back to a shoot or small limb or new wood.

Make all cuts clean and angled to the ground, without any damage to the bark of the material of the cut area left behind.

Remember Tag with fresh growth will be 30% or more in protein but low in carbohydrate so sheep, cattle, goats and horses will require some other source of energy.

(This article was sent to Prue Kesby by Mr Barry Timmer of Orange. He was/is with the Department of Agriculture but this publication is not an official Dept of Ag pamphlet. After reading an article in The Land about Tagasaste Pru contacted him about purchasing some seed. He sold her a kilogram of seed for $40 and these instructions came with it. In a telephone conversation with him he assured Pru they are not easy plants to grow with regard to longevity. Tagasaste grown conventionally in pots and planted out apparently have much shorter lives than ones grown using the open root stock method as outlined here. Pru is currently following these instructions with her Year 11 class - so far so good.)

Pru Kesby
Montrose
Orange Grove Rd
GUNNEDAH NSW 2380
Ph (067) 431 705

Give fools their gold, and knaves their power;
Let fortune's bubbles rise and fall;
Who sows a field, or trains a flower,
Or plants a tree, is more than all.
Whittier, *A Song of Harvest*

The following Farm Safety Quiz is one Pru has used for a couple of years with students in Years 9 and 10. She puts out all the standard farm safety brochures and then sets the students to work answering the questionnaire. The level of interest in this task astounds her each year!

Farm Safety Quiz

from Pru Kesby
Montrose
Orange Grove Rd
GUNNEDAH NSW 2380
Ph (067) 431 705

NAME .....

1. Which sense do farmers risk losing more quickly than the general population?
2. When do most farm accidents occur?
3. Can fuels be stored in workshops? Explain.
4. What piece of equipment is most commonly involved in far accidents?
5. What does PPE stand for?
6. List *three* (3) items pesticide users should wear.
7. How can noise induced hearing loss be prevented?
8. List the *four* (4) ways pesticide poisoning can occur.
9. Finish the slogan, "Don't be vain,
10. Where should chainsaws be started?
11. When should safety goggles be worn?
12. What preventative measures should farmers take against the sun's rays?
13. How long does it take for a tractor to roll over?
14. In NSW how old should you be to drive a tractor without special provisions?
15. List *three* (3) occasions when helmets should be worn.
16. What is, "rollover protection"?
17. Why is asthma a problem for many farmers?
18. What is, "kickback"?
19. What does PTO stand for? Why are they dangerous?
20. How many people died due to grain suffocation in NSW in 1986.

GENE MANIPULATION

A REPORT FROM THE BBC LANDLINE PROGRAMME

Biotechnology can produce food that may contain medicine but will change its colour to let us know. We are on the threshold of and era where we no longer can be bound by the laws of nature.

ST ANDREW'S ON THE EAST COAST OF CANADA

At the Huntsman Research Station they are dedicated to only one thing - farming fish for food. They are using conventional methods to raise Sturgeon to supply Caviar. Transgenic Salmon have been created by genetic scientists and are probably some of the rarest fish in the word. Here a group of scientists have the magic key to make fish grow faster.

HOW DO THESE SUPERFISH COMPARE TO NORMAL SALMON?

To create these special salmon the eggs of normal salmon were injected with a gene from the flounder. This new gene makes the salmon produce so much more of its natural "growth hormone" that in the early stages it grows up to 6 times faster than its normal sibling. We can get fish to grow in one year what would normally take three years. The change in economics is pretty obvious to everyone. Effectively a farmer can double his output using the same amount of resources. The result for the summer is that there is more fish available at a lower cost per unit - so we get a good return for the farmer, a lower cost to the consumer but we still have a profitable situation. The transgenic salmon may well end up being farmed in conventional fish farms along the Canadian Coast.

However, for environmentalists that prospect is to be feared. Already three out of four so called "wild salmon" have turned out to be escapees from fish farms! If transgenics were to escape, the consequences on the natural populations could be irreversible. When the transgenic fish mate with the wild salmon the vigour of the wild population to withstand a range of environmental conditions is reduced - the health of the species is diminished.

What the producers say is that fish raised in conventional coastal farms will have to be sterilised so that should the fish escape they will be unable to reproduce. There may be ways of sterilising fish - but do we **really** want to **EAT** sterilised, transgenic fish?

In Britain there is confidence that these kinds of fish will be on sale in the near future. There are already food chains selling genetically modified fruits and vegetables. One of the first to go on sale is a genetically modified Tomato pureé.

BUT WHAT WAS WRONG WITH NORMAL TOMATOES?

"Well, as we all know they go squashy". The difference with the "new" tomato is the way it goes soft - this Tomato stays firmer for longer. The scientists have managed to identify and switch off the one gene, form 50 thousand, which 'tells' the Tomato to go soft, so the new genetically engineered Tomato doesn't do this so quickly. This means the new Tomatoes need less water in the field, not because they ripen more slowly, but because there is less wastage in the processing. The scientists claim it will reduce costs by 10% - making it cheaper

for consumers. Over the next 10 to 20 years we are going to see a great number of very small changes in fruits and vegetables that collectively will improve the quality and value of fruits and vegetables available.

The Tomato gene manipulators are also at work producing a Tomato that TASTES better. They think they have found a gene that improves the SWEETNESS of tomato. At present they are putting this gene in tomato stems.

Scientists are now claiming they can "breed" better quality bark into vegetables.

HOW WAS THAT QUALITY LOST?
Because quality has not kept up with yield we've had to grow for yield. The argument is that slowly people will become aware of better quality food because of genetic engineering.

PEOPLE ARE WORRIED ABOUT THIS!
Scientists claim that each gene has a specific effect and this effect can be separated from the effects of all other genes. If we're only changing one gene then we're only changing one protein in 50,000 so what can be wrong about that?

That's what is called Reductionist thinking. You think that every cause, every effect is isolated but that's not the case because ALL the genes are ALL working together in a very complicated network, so if you change one you are very likely to propagate effects all over the place.

YOU CAN'T ACTUALLY PROVE ITS SAFE CAN YOU?
Several Government committees oversee the risks of genetic foods. There is a concern that in the race for returns too few people are looking at the wider picture. What worries some is that Science and Commerce are going hand in hand. The only kind of research that funds can be obtained for is commercialised gene biotechnology. If you've got a product to see at the end - then you can get a grant.

So far, 13 manipulated products have been approved in Britain. Next on the line is **SOYA** . Sixty percent of SOYA consumed in British foods comes from the USA. This year there's something new - genetically engineered Soya developed by Monsanto, the people who make ROUNDUP. Until now, Roundup was too strong to use on Soya, but by introducing a gene found in a Soil Bacterium, Monsanto has produced a Soya plant resistant to the normally fatal effects of Round Up. So now farmers need not use anything else. Farmers can use 1 - 2 applications of Round Up and they have clear fields using 1/3 less herbicide to achieve this. To become part of the action Soya farmers sign a three year contract to use the new Soya and Round Up combination.

WORRIES
Some are worried by this aspect because it is now easy to spray with nothing but Round Up, and this may cause problems. So what its going to do is create more farmers dumping more Round Up on their Soybeans because the weeds are going to build up a Resistance to Round Up. Therefore we use more which costs more.

Consumers ought to be able to decide what we want to eat. If we want to eat Biogenetic crops then it should be **LABELLED** from a **food safety** and **ethical point** so people can make a choice.

HOW DO RETAILERS COPE WITH THIS LABELLING OF FOOD?
At present this new type of Soya occupies about 3% of the market. Can you keep it separate from the other parts of the crop? Monsanto argued that their Soya was no different from the old and therefore a new label was unnecessary. Others think it's not the label but **new information** that consumers need - a

place where they can call and get good information that means something.

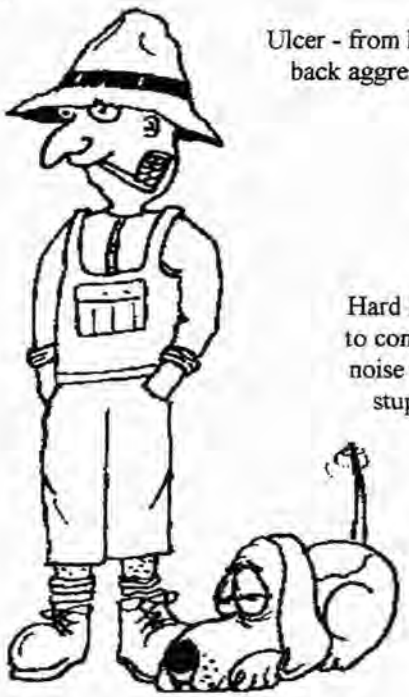
Segregation is not feasible say retailers. People will be eating genetically modified products whether they know it or not. The crux of the argument is that to feed a growing population yields must continue to increase. Industrial food production seemed to be the answer until we examined the cost to the environment. Biotechnology now claims it can provide the solutions but comes with many unanswered questions. So should consumers welcome the new gene food?

The following opinions illustrate opposing views on the subject.

"They should tell the Government we want no more releases of genetic food and no more marketing of transgenic food."

"Well I think rejection would be a great shame, it would be a disservice to future generations who need the actions of this generation to make sure that we're looking for new technologies ... That's how we have been able to survive on the planet so far."

PORTRAIT OF AN AGED AG. TEACHER



Bad eyesight - from deciphering student's notes.

Muscle damaged arms - from struggling with heavy objects.

Hair loss - from bad nerves owing to incorrect weather forcasts.

Ulcer - from holding back aggression

Voice gone - from shouting "Stop, **NOW!**"

Permanent wrinkles - from sun and U.V. rays.

Tacky clothes - from years of low pay.

Hard of hearing - due to constant machinery noise and kids asking stupid questions.

Poor posture - from bending over weeding and shovelling.

Weight loss - from repeatedly walking to and from the Ag. plot.

Weak knees - from constantly begging for more Ag. funds.

Waterlogged feet - from fixing burst water pipes.

Gnarled misshapen hands - from barb-wire and steer leading practice.

Land Management Programme

Information supplied by Greg Reid
Nimbin Central School
NIMBIN NSW 2480

"Instant Survey Mapping" is a programme which can take a scanned image of an aerial photograph and then overlay up to 22,000 transparent layers ie. A layer for water lines, one for paddocks, one for contours, one for soil types etc.

In addition, hundreds of data bases can be created - each including thousands of point references. For example, a data base for stock, individual references to orchard trees, a data base for crop yields, soil tests, wildlife sightings etc.

The programme provides for excellent farm planning in two ways:

- Firstly new fences or fields can be drawn in with areas and perimeters calculated automatically;
- Secondly the databases can be queried to match information eg. Highest yield for soil type, highest yield for phosphate applied etc. The programme largely replaces a farm diary as a series of easily updated maps with associated data bases. (Example can be found on Page 31 in BAAT No 3, Spring 1996).

The programme is available from:
AgData Australia
122 Russell Street
TOOWOOMBA QLD 4350
Phone 076 32 8488
Cost $965

If you can't get Land Care Sponsorship for the programme there is a video of the programme for $10 which would be a useful teaching resource.

SUCCESS

To laugh often and much, to win the respect of intelligent people and affection of children,
to earn the appreciation of honest critics and endure the betrayal of false friends;
to appreciate beauty, to find the best in others,
to leave the world a bit better, whether by a healthy child, a garden patch, or a redeemed social condition;
to know even one life has breathed easier, because you have lived, this is to have succeeded.

Ralph Waldo Emerson

YEAR 7 Agriculture Unit



Prepared by Jayne Hoffman, Alstonville High

VEGETABLE GROWING

RESEARCH AND PRESENTATION ACTIVITIES

- Using a variety of library and other resources you are to complete THREE (3) of the following activities and hand in for marking on .....
  Some class periods will be spent in the library, but you will also need to do some work at home.
- Work is to be completed on looseleaf paper or cardboard but NOT in your workbook. Marks will be awarded for both content and neat presentation.
- For one activity you complete, you will be required to present your findings to the class in a short talk.
- This is a chance to "Choose your own adventure"! Make sure you choose areas of interest to you (not your friends) and remember to use a lot of different resources to be sure of obtaining quality information.

ACTIVITIES

1. Australia today is a multicultural society and as a result of this we now have a much greater variety of foods, including vegetables, in our diet. You are to investigate a minimum of three (3) of the newer vegetables that have been introduced into Australia by migrants from countries such as Vietnam, Laos, Israel and Lebanon. Include:



   a) the name of the vegetable,
   b) the country of origin.
   c) a brief description of the vegetable including the part that is eaten.
   d) how the vegetable is normally used.
   e) A drawing/diagram of the vegetable.

2. Vegetables are an important part of our diet and should be eaten regularly.

   a) Find out the main nutrients contained in vegetables and what these nutrients are used in our body for. Organise this information into a table.
   b) Give examples of vegetables which supply especially large amounts of a particular nutrient eg. Spinach provides high levels of iron. Again, organise this information into a table.
   c) Name and briefly describe a disease that can occur in people if they do not eat adequate amounts of vegetables.

1. For one of the vegetables you are growing in your plot, investigate how the crop is grown in a commercial (large scale) situation.

   Include:
   a) soil preparation
   b) the varieties grown
   c) planting - method?
   d) Fertilising
   e) pest management
   f) harvesting - time?
      - method?



4. Recipes which use a variety of different vegetables are becoming increasingly popular as main meals. Many such recipes have been introduced from cultures which do not have meat as readily available as in Australia.

   Identify:



   a) Name and write out the recipe for a cold dish which uses at least three (3) different vegetables.
   b) Name and write out the recipes for a hot dish that uses at least three (3) different vegetables.
   c) the country from which the dish is traditional or popular.

5. Growing vegetables organically has become a popular trend and demand for organically grown vegetables is increasing. Write a report (approximately 1½ pages) on organic vegetable farming and include:



a) a definition for organic farming - what is it?

b) a description of how vegetable crops are grown using this method.

c) the advantages and disadvantages of this method of farming.

6. In a small vegetable garden situation it is often possible to practise companion planting. Find out:-



a) What is companion planting?

b) The benefits obtained by companion planting

c) a minimum of six plants suitable for use in companion planting and discuss their special features. Sketch a plan of a garden that is based on companion planting.

7. Design and prepare a poster which shows all the steps involved in growing and marketing a selected vegetable.

Royden Dairy Tours



David McKay has been conducting tours at his dairy farm, catering for children from Primary through to Year 12. Teachers have found the visits particularly useful to students in Years 10, 11 and 12 who are studying Agriculture or Geography. David has received a lot of positive feedback from teachers about the 'hands on' approach that he takes with students, and the learning benefits received. The Royden Dairy Farm is above average in size with 130 milkers on 800 acres of land. It is an attractive and interesting farm. The tour takes the form of a talk about dairy farming (with plenty of time for question and answer), viewing of the cows being milked, following through the process of the milk handling on the farm. Visual aids are used in conjunction with the lecture and tour time is around one and a half hours. David is able to make up a program to suit almost any curriculum that you may request. Detailed student notes are available . Situated in the Bathurst area.

- **A real dairy viewed in operation.**
- **Student notes & informative lectures provided**
- **Ideal *Case Study* - Geo. 7 Ag.**
- **Courses may be tailored to suit.**
- **A Friendly environment, free refreshments.**
- **price ranges. All ages. 5 yrs in tourism.**
- **Only 3 hours from Sydney by coach**

Contact David McKay for a booking and further information on (063) 32 4385 (office) or 019 455 570 (direct) .

GROWING VEGETABLES - YEAR 7

Use the words in the list below to complete the summary.

FRESH	HAND SMALL	SEEDS	SIZE
SPOIL	SPRAYING	RETAILERS	MARKETS
WATER	MACHINES	PESTICIDES	POULTRY MANURE
YIELD	FROZEN	CANNED	SEEDLINGS
CROP	LARGE	FERTILISERS	CROP ROTATION
TROWEL	ENEMIES	NITROGEN	RESISTANT
MOISTURE		INORGANIC	

Vegetables are usually grown on ..... farms near cities where they are close to the ..... Growing vegetable crops involves several processes including:-

1. Soil Preparation

The aim of preparing a seed bed is to make soil conditions suitable for planting ..... or .... eg. Rotary hoe are used to break up the soil. The type of seedbed prepared depends on the ..... being grown.

2. Seeding and Transplanting

The sowing depth of seeds depend on the ..... of the seed with ..... seed being planted deeper than ..... seed.

3. Fertilising

..... are used to add nutrients eg. ..... To the soil. Fertilisers may be organic eg. .... Or ..... eg. Q5.

4. Pest Management

Most vegetables have a number of pests which attack them from time to time. Pests can be controlled by ..... with chemicals called ..... or by introducing natural ..... of the pest. Pests and diseases can be reduced by growing different crops each year called .... and by growing vegetable varieties ..... to disease.

5. Irrigation

A lot of ..... is needed by plants for them to grow well and produce a high .....

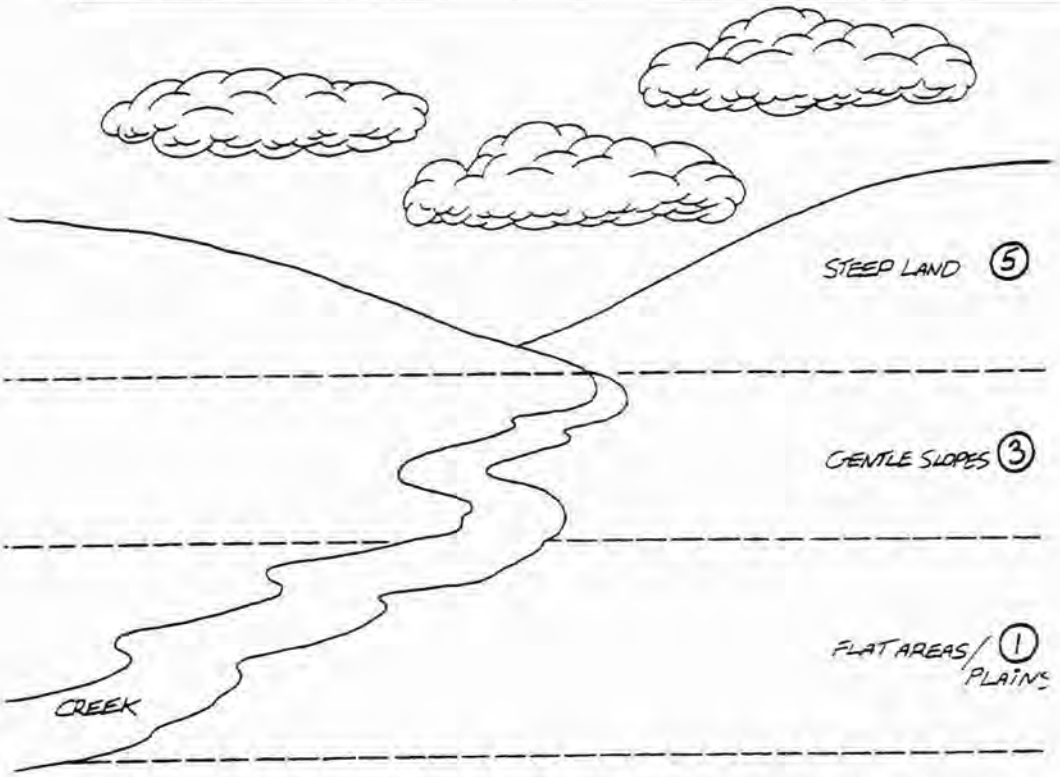
6. Harvesting

Vegetable crops may be harvested by ..... or with machine. The timing of harvesting is very important because vegetables will ..... if left too long.

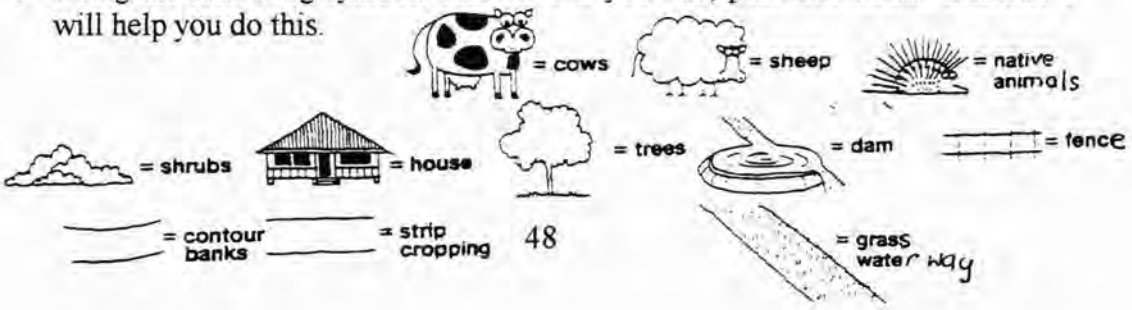
7. Marketing

Most vegetables are sold as "....." vegetables to the produce markets. Here they are sold to ..... who sell them to the public. Sometimes vegetables are processed and either ..... or .....

HOW WOULD YOU PLAN THIS FARM?



- Trace or sketch the outline of this landscape into your notebooks or onto a piece of paper.
- Using the following symbols and more if you like, plan this farm. Exercise 5 will help you do this.



NSW SCHOOLS WHICH DELIVERED THE RURAL INDUSTRIES COURSE IN 1996

SCHOOL NAME	TOWN	COURSE NO	NET CAND
Bathurst High School	Bathurst	32401	1
Blayney High School	Blayney	32402	1
Blayney High School	Blayney	32401	1
Bombala High School	Bombala	32401	1
Camden High School	Camden	32401	9
Chevalier College Bowral	Bowral	32402	7
Colo High School	North Richmond	32401	1
Farrer Agric HighCshool	Via Tamworth	32402	10
Glen Innes High School	Glen Innes	32401	2
James Sheahan Cath Orange	Orange	32402	4
McCarthy Catholic Snr HS	Emu Plains	32401	7
Orange High School	Orange	32402	2
The Canobolas Rural High	Orange	32402	4
Tullibigeal Central	Tullibigeal	32402	6
Woodenbong Central School	Woodenbong	32402	1
Yanco Agric High School	Yanco	32401	5
Total Number of Students			62

TEACHERS TRAINED TO DELIVER RURAL INDUSTRIES COURCES.

Peter Tait	Wingham High
Alan Cooper	Ungarie Central
Geoff Metcalf	Tullibigeal Central
Frank Leaver	Barellan Central
Lisa O'Brian	Yanco Ag High
Gary Barratt	Canobolas Rural Tech
Helen Kleinbergs	Molong Central
Trevor Thompson	Orange High
Sybil Adams	Trangie Central
Peter Jones	Colo High
Colin McQueen	Picton High
Helen Roberts	St Johns Park High
Damien Brookes	Yanco Ag High
Jamie Thomas	Farrer Ag High Tamworth
David Grady	Inverell High
Stewart Grimmett	Woodenbong Central
Colin Dudley	Scots School Bathurst
Patrick McCann	James Sheahan Cath High, Orange
David Gell	Blayney High
Neil Belling	Riverina School
Greg Crowley	Orange High
David Kent	Chevalier College
Wayne Warskitt	Farrer Ag High
Peter Green	Junee High
Jenni Wilkins	Board of Studies
Tracey George	Bathurst High
Terry Kirby	Bega High
Peter Robertson	Bombala High
Keith Larsson	Bonalbo Central
Peter Ryan	Camden high
Geoffrey O'Connor	Chevalier College
Kim Hopkins	Dubbo School of Distance Education
John Lee	Glen Innes High
Nicki Currey	Goodooga Central
Judy Lawson	Lockhart Central
Ian Taylor	McCarthy Cath Sen High, Emu Plains
Tony Turner	Muirfield High School North Rocks
Grant Taylor	Muswelbrook High
Elizabeth Ruis	Quakers Hill High
Chris Barbary	Richmond River High, Lismore
Bruce Manktelow	Scone High
Timo Gobius	St Francis de Sales Regional high, Leeton
Adrian Harrison	St Gregorys College, Campbeltown

John Dalglish	St Patricks College, Goulburn
Paul Robey	St Pauls College, Walla Walla
Rowan Chandler	Uralla Central
Tony Barnett	Walcha Central
Alan Mitchell	Warialda High
Peter Hood	Narribri high
Travers Powell	Tenterfield High
Kieran O'Keefe	Griffith High
Dale Chadwick	Gundagai high
John Surtees	Wingham High
Greg Matthews	Cessnock High
Wayne Whale	St Pauls College, Walla Walla
Scott Callaghan	Junee High
Graham Harris	Farrer Memorial, Tamworth
Robert Lynch	Trinity Catholic College, Lismore
David Saunders	Gloucester High
Michelle Riddell	Mungindi Central
Doug White	Manilla Central
Stephen Congdon	Scone High
Patricia Baker	Gunnedah High
Anne Young	Rutherford High
Robert Brent	Nepean High
Warren Eames	Umina High
John Hawkins	Colo High
Mark Hickson	Kempsey High
Tim Minehan	Young High
Karen Damic	Bathurst High
Peter Huish	Mudgee High
Peter Murdoch	Braidwood Central
David Henry	Karabar High (DEC)
Mick Melino	Woodlawn College, Lismore
Richard White	Balranald Central
Craig O'Brien	Moss Vale High
Dave McCarron	Bourke High
Marl Damm	Gilgandra High
Cliff George	Peak Hill Central
Tim Lukins	Condobolin High
Owen McLaughlin	Canowindra High
Geoff Spence	Erina High
Paul Owens	Port Macquarie High (DEC)
Anthony Provest	Port macquarie High (DEC)
Julie Robinson	Learning Material Production Centre,Strathfield
John Spencer	James Sheahan Cath High, Orange
Charles Anderson	Catholic High, Griffith
Tracey McKelvie	St Francid de Sales Regional High, Leeton
Gerard Delany	St Columbas College, Springwood
Philip Oliver	St Columbas College, Springwood
Francis Mackay	Caroline Chisholm Cath High, Penrith.



"Quick Sir! - - Ferdinand doesn't like the new Casual."

Cartoon by Ben Colefax - Kadina High, Goonellabah.

CONSTITUTION
NSW ASSOCIATION OF AGRICULTURE TEACHERS

1. **NAME -**
The name of the Association is the NSW Association of Agriculture Teachers (hereafter called the Association).

2. **OBJECTS -**
The object for which the Association is established are,
a) to encourage an interest and excellence in Agriculture.
b) to foster the teaching of Agriculture and associated activities.
c) to arrange and assist in arranging, meetings, conferences, and other activities in keeping with the objects of the Association.
d) to co-operate with other bodies, within NSW and elsewhere, which share an interest in Agriculture.
e) to publish a Journal and other such material as is consonant with the objects of the Association.

3. **MEMBERSHIP -**
a) Ordinary - The Association is open to anyone with an interest in Agriculture. Applications for membership shall be made in writing. All subscriptions shall become due and payable on the thirty-first day of December for the following biennium.

b) Affiliate - The Executive may arrange affiliate membership with other Associations which share object was similar to those of the Association, and which engage in activities that do not conflict with those of the Association. In arranging the Affiliate membership fee the Executive is to set the rate to cover the entire cost of all of the printed material for the current year and the postage involved. Affiliate members enjoy all the rights of ordinary members when they attend meetings of the Association.

c) Student - The Executive may accept student members at 50% of full fee.

d) Life -
I. Nomination by present financial members of the Association will be required on the nomination form enclosed in this BAAT.
II. Support materials must be provided together with referees, to enable a full resume to be developed and presented in BAAT.
III. A summary of the resume is to be posted prior to the AGM at the biennial conference.
IV. Voting will be decided on a 2/3 majority of the *Members* voting.
V. Successful members will become life members as of the date of the meeting, and be invited to receive their life membership at the following Biennial Conference.
VI. In all cases of membership ordinary, affiliate, and student, rejection of an application for membership must be considered by the Executive.

4. **CESSATION OF MEMBERSHIP -**

If a member does not pay the biennial subscription when it falls due, or does not pay within sixty days any other sum falling due to the Association, such membership shall thereupon cease and no rights of membership may be exercised until default in payment has been remedied.

5. **GENERAL MEETING -**

a) General meetings have the power to determine the policy of the Association.

b) The Association may, where possible, hold a general meeting once every two years.

c) Special general meetings may be called in term time by the President of the Association at the written request of any ten members.

d) The Quorum at a general meeting shall be Four (4) members and no business shall be transacted at any general meeting unless a quorum of members is present. Thirty minutes is to be allowed from the notified time of commencement of the meeting for a quorum to be present.

e) Section (c) does not preclude any general meeting passing a recommendation for the Executive's consideration either by vote or acclamation. Executive is bound to consider such motions but not accept them.

f) The constitution of the Association may be amended by a special resolution of half or more of the members of the Association who are present at a general meeting of which at least 21 days written notice has been given.

g) The Association membership subscription rates shall be determined by the Executive.

6. **BIENNIAL GENERAL MEETING -**

a) The biennial general meeting shall receive the Executive report of the activities of the Association for the previous term. on adoption, this report becomes the Biennial Report of the Association.

b) The biennial general meeting shall receive the Treasurer's audited statement for the previous financial term. On adoption, this report becomes the **Biennial Financial Report** of the Association.

The President
The Secretary
The Treasurer
The Publications Officer
Two Biennial Conference Organisers.

c) Returning Officer and Elections -

The Biennial General Meeting shall elect a returning officer for the conduct of the elections at the next ensuring Biennial General Meeting. Nominations of members for the various positions shall be called for in the notice convening the Biennial General Meeting. If no or insufficient nominations have been received for a position prior to the General meeting, nominations may be accepted from the floor of the meeting.

All nominations seconded whether prior to the meeting, or from the floor, must be seconded. Only financial members may nominate or second. Voting shall be by secret ballot and in person at the meeting.

Where there is a single position to be filled, votes shall be cast and counted with the preferential system; where there is more than one position to be filled, each member voting may cast as many votes as there are positions to be filled and votes shall be counted in accordance with the first-past-the-post system. In all cases the conduct of the elections shall be in the hand of the returning officer whose decisions shall be final.

7. **THE EXECUTIVE - shall consist of**

a) The three (3) elected officers of the Association, and

b) The Elected Editors (up to 2 in number) of the *..Bulletin of the NSW Association of Agriculture Teachers ... (BAAT).*

8. **THE ADVISORY COUNCIL AND BRANCHES OF THE ASSOCIATION -**

a) The Executive may call a meeting of an Advisory Council. The Advisory council shall be free to advise the Association about any matter connected with Agriculture, or the future development of the Association, but it has no power to make binding resolutions.

b) Two or more members of the Association may apply to the Executive for permission to form a Branch of the Association. If the Executive grants such permission it may do so on such terms as it sees fit and it may at any time in its absolute discretion vary those terms or suspend recognition until the next biennial meeting.

c) In exercising these posers the Executive still has regard to the interests of the Association at large, and of its members generally, and the need to both encourage and co-ordinate the activities of the Association, its members and all branches.

d) Although branches shall finance their own activities any may not commit the Association to any expenditure without prior specific approval of the Executive or the Treasurer. The Executive may make grants, either general or specific, to Branches to assist in their activities. Branches shall keep the executive fully informed of their plans, activities and financial position by regular communication, and in a report which the Branch should submit to the Biennial General Meeting.

9. **POWERS AND DUTIES OF THE EXECUTIVE**

a) The business of the Association shall be managed by the Executive which may authorise all payments on behalf of the Association, which are not prerogative of a general meeting, in conformity with the objects of the Association.

b) The Executive may require an officer of the Association to report to it about activities which he has conducted on behalf of the Association and may request him to cease these activities until the next general meeting, when any matter under dispute may be referred to the members.

c) The Executive shall cause minutes to be made,

- of all payment of officers of the Association,
- of the names of all members of the Executive present at all meetings of the Association and of the Executive, and,
- of all regular motions at all meetings of the Association and the Executive.

d) The Executive may invite members to assist in all or part of its deliberations. Such co-opted members may vote on formal motions.

e) The Executive shall have the power to fill any vacant office. Officers may be declared vacant if no nomination is accepted by the Biennial General meeting or if an officer resigns or fails to accept the President's invitation to be present at three successive meetings of which due notice has been given.

f) The Executive may empower an assistant treasurer to take some or all of the duties of the Treasurer if the Treasurer requests assistance or, if, owing to any cause, the Treasurer is unable to fulfil part or whole of his duties.

g) The Executive may nominate a past President to act in place of the President if, by any chance, the president is unable to fulfil his duties.

h) The Executive may request the Secretariat to implement decisions or it may grant discretionary powers to deal with certain matters.

10. FUNCTION OF THE SECRETARIAT -

The Secretariat may meet in the months between the meetings of the Executive to review,

- correspondence
- accounts
- progress of officers in fulfilling the motions of the Executive.
- to resolve matters delegated to it by the Executive, and in general, to provide for continuity of action.

11. THE PUBLICATIONS EDITOR/S -

The Publications Editor/s shall be responsible for the handling of all routine matters connected with the issue of publications which have been established by the Executive.

12 SUBCOMMITTEES -

a) It is the policy of the Association to foster active work of voluntary sub-committees and to see that this work receives authorised support and due notice in the publications of the Association.

b) The Executive may set up subcommittees to prepare business for the Executive meeting or to carry out worthwhile activities for the Association.

c) Convenors of such sub-committees must report all meetings of their committees to the next meeting of the Executive.

d) No proposals involving the expenditure of the moneys of the Association shall be effected without the approval of the Executive.

e) The name of the Association must not be used by a sub-committee for any public action except with the prior approval of the Executive.

f) The President, the Secretary and the Treasurer of the Association have the right, ex officio, to attend any sub-committee meeting, and the Executive may nominate one of its members to attend meetings.

13 DUTIES OF OFFICE BEARERS -

a) The President -

1. Shall represent and stand for the Association during his/her term of office.
2. Shall provide over public and general meetings of the Association, the meetings of the Executive, and of the Advisory Council.

3. Shall be in charge of the business of the Association, and the other officers of the Association shall provide him with material necessary to direct the course of meetings and to represent the Association.

b) **The Secretary -**

The Secretary shall be responsible for,

1. Receiving, filing and preserving all correspondence of the Association.
2. Notifying the President of its contents in time for general meetings and Executive and Secretariat meetings as authorised by the President.
3. Sending out notices and agenda for general meetings and Executive and Secretariat meetings as authorised by the President.
4. Acknowledging or answering all correspondence as required by the Executive.
5. Gathering and preparing materials for reports including the Executive's report of the activities of the Association.

c) **The Treasurer**

The Treasurer shall be responsible for,

1. The receipt and expenditure of all monies of the Association and maintaining the balance of the same.
2. The financial records of the Association.
3. Preparing a balance sheet for audit prior to the Biennial General Meeting.
4. Maintaining a list of financial members.
5. Notifying personnel, responsibility for mailing, re, new members.
6. Preparing budget estimates for income and expenditure at about October of each Biennium.
7. Supervising the financial arrangements for all publications and the issue of complimentary copies of Journals and other publications.

14. THE EDITOR/S

The Editor/s shall be responsible as part of the Executive for maintaining the standard of the Association's Journal in accordance with the objects of the Association and in consultation with the Executive.

FEEDING THE WORLD

- There will be 8 - 10 billion people to feed by the year 2035. Organic farming on its own, given the current yields, will not be able to support the world's population without unprecedented global famine.
- The risk of damage to wildlife from the high technology, safer chemicals used today is far less than the risk of havitat loss associated with organic farming which would have to be on ever-increasing areas to feed the world population. The world currently crops 1,500 million ha. of land.

Dennis Avery, Director, Centre for Global Food Studies, Hudson Institute, Indiana, USA in his recently published book, "Ssaving the Planet with Pesticides and Plastic" sates:

"The threat of severe hunger no longer stalks perhaps two-thirds of the world's population on at least a periodic basis, affecting perhaps 5 - 7% of the world in any one year. Axis, with three quarters of the world's population has raised per capita food intake by about one-third since 1960, in a region that experts thought would suffer mass starvation".

NSW ASSOCIATION of AGRICULTURE TEACHERS' BIENNIAL CONFERENCE - BERRY - 27 TO 30 JANUARY 1997

REGISTRATION FORM

NAME : _____

ADDRESS : School : _____

Telephone : _____ Fax : _____

Home : _____

Telephone : _____

COSTING : and selections -

PARTICIPANTS :

1. CONFERENCE Registration Fee (Per participant inclusive) $175.00

2. ACCOMMODATION at Berry Sport and Recreation Centre - Includes meals and shared rooms. Teachers. $135.00

NON-PARTICIPANTS : (Spouses, etc)

3. ACCOMMODATION at Berry Sport and Recreation Centre $135.00

4. MEALS only @ $8.00 per meal $_____

5. CONFERENCE DINNER - @ $25.00 per person (**no children**) at Coolangatta Winery. Guest Dinner speaker. Bus available. $_____

6. CONFERENCE BUS TOUR - Number requiring seats _____
   Non-conference participants - spouses, etc. who have not paid the Registration Fee ($150) pay **$15** to cover the bus journey, entry fees and meals on the trip. Ostrich Farm, Protea Farm, Emus, Bradman Museum, Alpacas, Mushrooms, Trout Farm.

   Evening Barbecue with Taste of the South Coast. **$10** adults. $_____

   TOTAL $_____

7. ARRIVAL TIME - anticipated time of arrival at Berry -
   Note : Sessions start at 4:30pm on Monday, 27 January _____

8. Topic prepared to present, "How I do it" session - 5 to 15 minutes. It only has to be something simple, that works, that is different, that students enjoy, that you like.

_____

_____

Please return Registration forms with minimum deposit of $50.00 per person to Mr Phil Armour, Yass High School, Locked Bag No. 1, YASS, 2582 by 28 October, 1996. (Fax 062 263 174)

SONG OF THE AG. SCIENCE TEACHER

No matter the traumas and trials of the work,
There's always variety with hoe and pitch fork.
Ag. Science is great - with nature in yoke
And the job satisfaction's considerable.

But the paddocks are dry - the feed's nearly done;
Year 9's potatoes fry in the sun.
El Nino played havock on our little 'run'
We'll soon be "ruined" like Hanrahan.

The descent with the pump, on the slide, was a breeze,
Till the obstacle stump hurled it off with great ease.
All hands held on as they sank to their knees
And watched it submerge in the river

Year 11 has won again at the Show.
They're tickled pink and so is the sow,
But she's off to the meatworks - what a row!
We need the funds for the tractor.

The tube slow-leaks. The tyre-pump broke.
The jack seems to have disapeared up in smoke.
Our wheel brace we lent to a H.S.I.E. bloke
But you can't trust anyone these days.

The rooster is out and the hens have stopped laying.
Mushrooms have blight and the bracken needs spraying.
The students are eager to catch cattle straying -
There's never a moment to ponder.

There's a cow in the ditch and its started to rain.
The tractor is bogged somewhere down the lane.
The strong rope's mislaid and - we can't find the chain.
Life wasn't meant to be easy!

The rest of the staff are inside counting heads
While I'm with Year 10 shearing sheep in the shed.
Who would change places? to my job I am wed
When birds sing above and its pleasant.

Agricola
November 1996