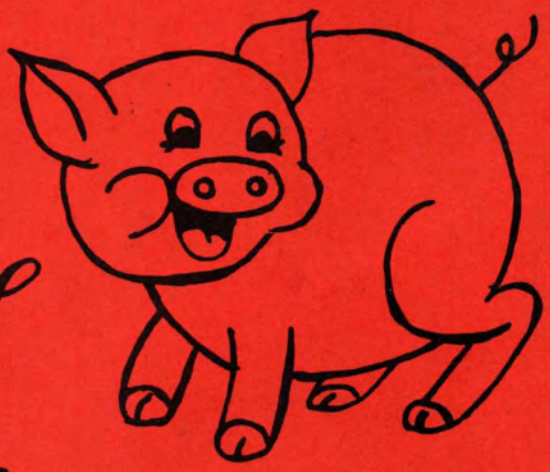
Bulletin of the N.S.W. Association of Agriculture Teachers





B.A.A.T.





BAAT III 1988



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Volume III 1988



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PRESIDENTS REPORT

By the time that this BAAT reaches respective members, the school year will be winding down.

Best wishes to all for the comming break, and I hope to see a big role up at the Biennial Conference at Tocal in January.

The past few months have been very busy organising the conference. At this time I feel that the format is shaping up to be successful, and along the lines requested at the last conference at Camden. It was felt that teaching often kept us away from the cutting edge, particularly in the area of practical skills, and quite a few members suggested a ***Skills Based Hands on Approach.***

In this light we have enlisted the help of many talented people, and taken care to ensure that these people can impart their practical skills with the wide variety of conference applicants we are expecting. Tocal Ag college has also been very helpful in the formulation of the present Conference program that appears on page 4. of this edition.

As shown in the program there is a large variety of practical areas covered, and with options in each time slot most people should be able to attend their choice of activity. There will also be extensive support material available FREE to conference participants, including material that could easily be duplicated for use in the classroom.

PLEASE .. mark January 22nd in your Diary and make an effort to attend a practical conference that will be of great benefit to your teaching. To enable Nigel Cox to keep the books in order, could you please send replies and money in as soon as possible.

IVAN GANT.

EDITORS REPORT

I would like to thank everyone that has helped me over the past couple of years in the production of this Bulletin. I have enjoyed the challenge, met lots of people and hope that I have produced material that is of use in the classroom.

The Ag teachers in the Sydney Region, spurred on by Angie Rutherford have been particularly active, as well as Glen Innes, Singleton and Merriwa Schools.

The 3 Unit Agriculture Excursion (organized By Angie Rutherford) is one of the integrated types of activities that we will need to look at if we are going to be effective teachers in the coming years. Further if Rural Industry is to attract high calibre people, we at the cutting edge will have encourage and develop a more business like approach to our subject. More than ever, we will need to refine our practical skills (dont miss the Conference at Tocal in January .89) and project a professional approach to the local community and Australia generally.

Not to be one-sided, the educational institutions will also have to pull their weight. If High School Agriculture is a challenging subject and we attract able students into the senior years, then the Universities must acknowledge the value of this effort by placing equal emphasis on Agriculture as they do on Physics and Chemistry in their entry requirements.

It is obvious from the material that has come across my desk that there are a number of professional and ingenious Ag teachers in NSW, often feeling the day to day pressures and the isolation of teaching in the more remote areas. I hope that renewed interest has been generated in our associations bulletin, and that this interest will grow over the next biennium.

Best Wishes for 1989.....

IAN FOREMAN

NSW ASSOCIATION OF AGRICULTURE TEACHERS BIENNIAL CONFERENCE



HANDS ON AGRICULTURE



TOCAL 22ND - 25TH JANUARY 1989

In order to assist with the planning of this conference we would greatly appreciate it if you could complete the following registration form and post it with a cheque for registration ASAP. Dont forget to apply at Regional Office for funding, as there is a strong rumour that everyone will be approved.

A. INFORMATION

	YES	NO
1. Are You applying for Regional Funding		
2. Will You attend regardless of funding		
3. Are you arriving for the Sunday Night Meal		
4. Will you need accomodation for family or friends		

4. Are you attending part time, if so explain, _____

_____

B. EXPENSES - please note the reduced registration cost for members of the NSW Association of Agriculture teachers. The meals and accomodation fee includes the cost of all meals, and attendance at all workshops etc. (also includes the conference Dinner) Prices for part time attendance will be provided upon application to the treasurer. All non-refunded expenses are tax deductible.

1. Registration Fee - $50.00 ($30.00 for members) 2. Meals & Accomodation - $135.00

NAME _____

SCHOOL _____

HOME PHONE (____) _____ SIGNED _____

I enclose a cheque (made to N.S.W.A.A.T) for my registration, and I understand that this fee will be refunded if my attendance depends on Regional funding and if this is not obtained.

SEND TO : NIGEL COX (Prior to the end of Term 4) OR IVAN GANT
SINGLETON HIGH SCHOOL YALLAMBEE
SINGLETON 2330 IDAVILLE ROAD
MERRIWA 2329



1989 TOCAL AG TEACHERS

BIENNIAL CONFERENCE PROGRAM



SUNDAY 22/1/89

REGISTRATION	4.00 – 5.00 pm
DINNERT	5.30 – 6.00 pm
WELCOME	Cameron Archer – College Principal A look at External Studies – Warwick Moore General Briefing – The Organizing Committee

MONDAY 23/1/89

LATE REGISTRATION BEFORE 9.00AM

TIME	EVENT	OPTION 1	OPTION 2	OPTION 3
9.00 am 10.30 am	*MORNING ACTIVITY PART A*	*SHEEP* • Handling – yardwork – catch & throw • Crutch & Shear • Weight Estimation/weigh • Breed Identification	*CATTLE* • Handling – yardwork – mustering • Branding, Marking, Vaccination, Tagging Drenching techniques	*BEES* • Hive Inspection • Smoker Strategies • Re-Queening • Frame & Box Construction • Preparation
M.TEA				
11.00 am 12.30 pm	*MORNING ACTIVITY PART B*	*SHEEP* • Judging • Classification • Future Potential • Selection/culling	*CATTLE* • Condition Scoring • Livestock Description & Selling • Cattle Judging	*BEES* • Frame Removal • Bee Management • Bee Diseases • Queen Identification • (Bring Protective gear)
LUNCH				
1.15 pm M.TEA	*AFTERNOON ACTIVITY PART A*	*SHEEP* • Handling – yardwork – catch & throw • Crutch & Shear • Weight Estimation/weigh • Breed Identification	*CATTLE* • Handling – yardwork – mustering • Branding, Marking, Vaccination, Tagging Drenching techniques	*BEES* • Hive Inspection • Smoker Strategies • Re-Queening • Frame & Box Construction • Preparation
     5.00 pm	*AFTERNOON ACTIVITY PART B*	*SHEEP* • Judging • Classification • Future Potential • Selection/culling	*CATTLE* • Condition Scoring • Livestock Description & Selling • Cattle Judging	*BEES* • Frame Removal • Bee Management • Bee Diseases • Queen Identification • (Bring Protective gear)
TEA	TEA – 5.30 PM	• BBQ – Dining Room		
7.30 pm	*EVENING SESSION*	*OFFICIAL ADDRESS* • Biennial Meeting of NSW Association of Ag teachers		

TUESDAY 24/1/89

TIME	EVENT	OPTION 1	OPTION 2	OPTION 3
9.00 am 10.30 am	*MORNING ACTIVITY PART A*	*POULTRY* • Visit Steggles – Hatchery – Processing Factory – Ration Formulation – Sexing Chickens	*FENCING* • Fence Construction • Repair & Maintenance • Designing systems to suit various applications	*AG CHEMICALS* • Spraying • Sprayer calibration • Effective Spraying • Safe Chemical Handling
M.TEA				
11.00 am 12.30 pm	*MORNING ACTIVITY PART B*	*POULTRY* • Completion of the tour	*FENCING* • Fence Construction • Repair & Maintenance • Designing systems to suit various applications	*TRACTOR SAFETY* • 3PT Linkage • Wheeled Implements • Working on slopes • Student safety
LUNCH				
1.15 pm   <

THE AGRICULTURE TEACHERS ASSOCIATION OF NSW
DRAFT CONSTITUTION

To be presented at the Annual General Meeting held in January, 1989.

1. NAME -

1a. The name of the Association is the Agriculture Teachers Association of New South Wales (hereinafter called the Association).

2. OBJECTS - the objects for which the Association is established are,

2a. to encourage an interest and excellence in Agriculture

2b. to foster the teaching of Agriculture and Associated activities.

2c. to arrange and assist in arranging, meetings, conferences, and other activities in keeping with the objects of the Association.

2d. to co-operate with other bodies, within NSW and elsewhere, which share an interest in Agriculture.

2e. to publish a Journal and other such material as is consonant with the objects of the Association.

3. MEMBERSHIP -

3a. **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 become payable on the thirtyfirst day of December in every biennium.

3b. **Affiliate** - The Executive may arrange affiliate membership with other Associations, which share objects 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.

3c. **Student** - The Executive may accept as student members, students whose earnings are less than $2000/year.

3d. **Life** -

d1. Nomination by present financial members of the Association will be required on the nomination form enclosed in this BAAT.

d2. Support materials must be provided, together with referees, to enable a full resume to be developed and presented in BAAT.

d3. A summary of the resume is to be posted prior to the AGM at the biennial conference.

d4. Voting will be decided on a 2/3 majority of the ***Members*** voting.

d5. 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.

d6. In all cases of membership, ordinary, affiliate, and student, any rejection of an application for membership must be considered by the Executive.

4. CESSATION OF MEMBERSHIP -

4a. 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 my be exercised until default in payment has been remedied.

5. GENERAL MEETING -

5a. General meetings have the power to determine the policy of the Association.

5b. The Association may, where possible, hold a general meeting once every two years.

5c. Special general meetings may be called in term time by the President of the Association at the written request of any **ten** members.

5d. 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 the commencement of the meeting for a quorum to be present.

5e. 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 to accept them.

5f. 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.

5g. The Association membership subscription rates shall be determined by the Executive.

6. BIENNIAL GENERAL MEETING -

6a. The biennial general meeting shall receive the Executives report of the activities of the Association for the previous term. On adoption, this report becomes the **Biennial Report** of the Association.

6b. 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.

6c The Biennial General meeting shall elect the Auditor for the next term.

6d. The Biennial General Meeting shall elect the following honorary officers of the Association,

* The President
* The Secretary
* The Treasurer
* The Publications Officer
* Two Biennial Conference Organizers

6e. **Returning Officer & Elections -**

The Biennial General Meeting shall elect a returning officer for the conduct of the elections at the next ensuing 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, 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

7a. The 3 elected officers of the Association, and

7b. 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

8a. 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.

8b. Ten or 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.

In exercising these powers the Executive shall have 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.

Although branches shall finance their own activities and 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 full 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

9a. The business of the Association shall be managed by the Executive which may authorize all payments on behalf of the Association, which are not prerogative of a general meeting, in conformity with the objects of the Association.

9b. 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.

9c. 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.

9d. The Executive may invite members to assist in all or part of its deliberations. Such co-opted members may vote on formal motions.

9e. The Executive shall have the power to fill any vacant office. Offices may be declared vacant if no nomination is accepted by the Biennial General meeting or if an officer resigns or fails to accept the Presidents invitation to be present at three successive meetings of which due notice has been given.

9f. 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.

9g. 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.

9h. 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 -

10a. 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 -

12a. It is the policy of the Association to foster active work of voluntary sub-committees and to see that this work receives authorized support and due notice in the publications of the Association.

12b. The Executive may set up sub-committees to prepare business for the Executive meeting or to carry out worthwhile activities for the Association.

12c. Convenors of such sub-committees must report all meetings of their committees to the next meeting of the Executive.

12d. No proposals involving the expenditure of the moneys of the Association shall be effected without the approval of the Executive.

12e. 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.

12f. 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

13a. **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.

13b. **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 authorized by the President.

3. sending out notices and agenda for general meetings and Executive and

Secretariat meetings as authorized 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.

13c. **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 responsible for mailing re: new members.

6. pre paring 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** - shall be responsible as part of the Executive for, maintaining the standard of the Associations Journal in accordance with the objects of the Association and in consultation with the Executive.

THE SCIENTIFIC BASIS OF MODERN AGRICULTURE



A REVIEW BY IAN FOREMAN



A few weeks ago a **Rare** Book crossed my desk... A new Senior Agriculture text. The Book is edited by K.O. Campbell & J.W. Bowyer, and available from the Oxford University Press. (RRP $47.50)

The book is quite substantial and runs to 479 pages, with excellent line drawings. There are several colour plates that are efficiently used to illustrate aspects of soil profiles and plant nutrition.

After scanning a few randomly selected pages into the computer, I analyzed the readability of the text. The text is pitched at a 3rd Year University level with a Flesch Grade Level of 39. The average length of sentences was around 18 words.

The book is a unique survey which reflects the contemporary state of the rural sciences. Among the subjects covered are microclimate, soils, crop and pasture production, genetic improvement, plant and animal protection, the animal sciences, agricultural microbiology, and the economics of agricultural production and marketing.

The latter section of the book which deals with the economics of agricultural production systems is presented in a very readable format with worked examples of gross margins and parametric budgets. This section stresses the importance of economic efficiency and examines ways in which the technologically advanced farmer may maximise efficiency.

I would definitely recommend this text as a reference book in the school library for senior Agriculture. Although not written in strict systems terminology the authors go to great lengths to stress the complex interactions which exist in modern day agriculture and further they illustrate these interactions with modern **Australian**...examples

GOSSIP & NEWS



1. A NEW NAME -

There was considerable debate at the National conference re the name of our association. It was felt that the previous name of *.National Association of the Teachers of Agriculture.* excluded or turned away a number of people that were involved with Agricultural education but not teachers.

Several members expressed the need to find a new name for the Association that would attract a wider cross section of people involved in Agricultural Education. After considerable debate, and the assistance of some of the better wines the Western State had to offer, some unusual names were suggested,

NURD - National Undergraduate of Rural Developers

FART - Federal Association of Rural Teachers.

And some others that cant be printed.... However all good things must come to an end and sober (but somewhat the worse for wear) participants voted on some 15 new names for the Association.

It was decided that our National body should have the following title,

NAAE - National Association of Agricultural Educators.

2. NEW NATIONAL EXECUTIVE -

I hope that the article in the last BAAT on the National Conference was of benefit in raising the morale of Ag teachers around the state. The was a lot of positive feeling generated at the conference, and this is what Agricultural education needs at this time.

The following is a list of the executive that was elected at the National conference in Perth. It was felt that have all of the executive in one state could reduce the communication problems that have existed with our association at the National level.

Please endeavour to support these people as they are genuinely concerned about improving the standard and community recognition of Agriculture as a subject, but more than that they are excellent teachers that are concerned about the students they teach.

President: Greg White
Balaklava High School
Gwy Terrace
Balaklava SA 5461

Secretary: Cath Evans
Northfield High School
Hamstead Road
Northfield SA 5085.

Treasurer: Lyn Jefferies
Murray Bridge High
Lohman Street
Murray Bridge SA 5253

Publicity Officer:

Roxley Hall
Northfield High School
Hamstead Road
Northfield SA 5085.

3. EXECUTIVE MEMBER VANISHED ??

Has anyone out there seen our illustrious secretary of late ??

Bob Derrick began the Biennium as our secretary, and teaching in the outback city of Coolah Central. Earlier this year I was informed that Bob had a move and could no longer be reached at Coolah.

Despite considerable effort we have not been able to track him down...

Does anyone have any news ????

4. COMPUTER NEWS -

With the high cost of Agricultural software, and the difficulty of obtaining up-to-date information on the production costs of plant and animal enterprises I decided to takle the problem and produce some spreadsheets that could be used with the senior students.

Gross margins and Parametric Budgets are pretty boring when using second hand data from the text book or adding endless figures with the calculator.

I contacted several farmers in the Macquarie Valley to find out what types of costs were involved in several plant and animal enterproses. I then approached several chemical compamies, to obtain recent figure on the cost of the inputs used by these farmers.

Next I designed a spreadsheet that would integrate all of this information and enable the students to experiment with the model. Year 11 have appreciated this effort and the exercise integrated lot of the the work in the course.

They were able to vary the price of any of the inputs, allow for variations in world grain prices, and see the effect on the Gross margin/ha.
Further they were able to generate numerous graphs to illustrate the benefit of parametric budgeting and see the integrative effect of Yield + Price variations on the profitability of the enterprise.

I have included a couple of examples at the end of this edition to give you some idea of the scope and potential of these spreadsheets. At present I have spreadsheets for,

Wheat, Oats, Barley, Cotton, Navy beans, Faber beans, Chick peas, Peas, Sunflowers, Lupins, Safflower, sorghum, soyabeans, Lucurne, maize, mung beans, and separate spreadsheets for irrigated versions of most of the above.

Feedlot steers, Cows/calves, Several sheep spreadsheets, angoras, Merino, Wool, Wethers, 2nd cross sheep, Beef and cashmere goats.

At present these spreadsheets are in MS-DOS Microsoft Excel Format as I have found this to be one of the more powerful spreadsheets and the students find the mouse driven drop down menus easy to use. The graph generating capabilities are also enormous.

I can convert these quite easily to formats of the the other DOS spreadsheet formats such as,

Lotus 1-2-3, Supercalc 3 & 4, PC - calc, and many others.

If you are interested you can contact me via Morisset High School for more details.

IAN FOREMAN

LIFE MEMBERSHIP NOMINATION

NORM (BILL) THOMAS



It is extremely difficult to select more interesting or most applicable points in a thumbnail sketch of a man whose whole life has been moulded by his love for, dedication to, and interest in Agriculture. Norm.s career as a teacher of Agriculture in schools and for a short while at Armidale CAE, gave him the opportunity to impart to others his great belief that Agriculture was the .**ultimate subject**..

Norm (Bill) Thomas appears to have been destined .agriculturally. from the beginning. The son of a Dairyman/milk vendor his secondary schooling was as a .scholarship. pupil at Hurlstone Ag High School, Glenfield, Sydney. Scholarship boys provided vacation labour for the extensive farming pursuits of Hurlstone - working with the field staff. With only three weeks per year at home these boys received a wealth of .**hands on**. experience at Hurlstone Ag School

A scholarship to Armidale Teachers College saw Norm choose to train as a teacher of Agriculture but with a certain quirk of whimsy by the Dept. of Education it was some time before he stood before a class

of Ag students. His first appointment was at Griffith Primary, then a small school at Brookong and a Primary appointment at Dorrigo !

With the death of his father Norm left teaching for some years to assist in the family business as a Dairyman, milk vendor and expanding into the field of Rural contractor. This practical interest has been maintained.

His return to teaching saw him teaching Agriculture & Science (& Maths) at Bombala Central. At the same time Norm commenced study as an external student at UNE for a Degree. His subsequent transfer to Armidale High School gave him many challenges.

His love of Agriculture as a subject was intense and he held a .vision of splendid. that if taught with perspective, a student gained a wide understanding of history, geography, economics, maths, botany, zoology, and other sciences.

Norms enthusiasm and interest in his chosen field seems to have been an inspiration to his pupils, as many have taken up the challenge of Ag. teaching - including three members of his family. (a quick think and at least 10 other names came to mind from a group of student over four years)

The late JA Sutherland in his capacity as lecturer at Armidale CAE for teacher of Agriculture, invited Norm as guest lecturer (part time) a position that he valued and enjoyed. He was also involved in HSC marking when it was done at Armidale CAE under the direction of Alan Sutherland before it moved to Sydney.

Although not directly involved in the School Certificate and HSC Syllabus and Examination Committees Norms .Quite Insistence. and encouragement stimulated contributions of his colleagues. He also had a powerful influence through inputs to discussion on draft syllabi and policy documents.

A strong believer that the positions of Inspector & Consultant should have Agricultural expertise, Norm campaigned vigorously along these fronts.

Always aware of the academic isolation of Ag teachers, Norm has been a staunch supporter of the Agriculture teachers Association, and its Biennial Conferences, as those of us who have attended will know.

The need for full recognition of Agriculture as a Faculty separate from science, was another of his commitments. This hard work resulted in an Agriculture Faculty being established at Armidale High School. Norm was a special master in charge of Agriculture, Spec. Ed, and Art from 1981. The increase in the number of periods of Agriculture saw the submission in 1984 for a separate Faculty.

Norm was instrumental in setting up a parent advisory/interest group at Armidale High, whose role was one of liaison between the Department and Agricultural Studies at the school. This group was available to lobby for any needs and to provide expertise where necessary.

Now days school excursions are many and varied, but in the mid 1960's only sporting exchanges were held. Norm instigated an Agriculture exchange with Murwillumbah High School - a totally different Ag experience for the pupils of each school - pupils being billeted with Ag students.

In his retirement Norm maintains an active interest in Agricultural Education, through the .Thomas Dynasty. and involvement with professional groups. He has held the office of President in the past, and is now the Treasurer of the local branch of the Australian Institute of Ag Scientists & one of its staunchest supporters. Norm is also a member of the Society of Animal Production.

As he has always done he marries the theoretical with the practical. As a result colleagues continue to refer inter-state and over-seas visitors to Norm for counsel, as for many years past.

Above all, a professional, he met challenges head on and had high standards in respect of his own work. Norm was always to help less experienced practitioners but expected them to perform.

NATIONAL AGRIBUSINESS CONFERENCE

Canberra, August 1988

A review of the major papers presented at the conference where Agricultural Educators and Employers had the opportunity to exchange ideas.

The changing face of Agribusiness

Peter Chandler from Chisholm Institute opened this session by expressing a degree of hostility towards those who take the responsibility for the development of children, claiming little collaboration between business and the management of educational programs. He also acknowledged that industry leaders are often not capable of guiding personal or professional development.

This talk was followed by an address from the Hon. John Kerin Minister for Primary Industry and Energy. After a brief review of the contribution of Agriculture to the Economy (a $6 Billion contribution to export income in 87-88) Mr Kerin recognized the role of increased training in improving management and marketing in agriculture. He also referred briefly, to the Dawkins report, pointing out that the framework allows responsiveness and encourage co-operation between specialist agricultural institutions and marketing schools.

Dr Charles French is the Westfarmers Professor of Agribusiness at Curtin University. As the next speaker he presented a North American view of agriculture as an integrated, holistic amalgam of farms, production technology, marketing and politics. He emphasized the complexity, but necessity, of viewing agricultural dilemmas globally. An important message for this country was his review of the way in which US farmers have successfully established coalitions to advance their support, especially for economic protection, within their own country.

Agribusiness Education

Prof. Tim Wallace is from the University of California. He presented the conference with a resume of Agricultural education in North America from the establishment of the Land Grant Universities by Abraham Lincoln in the 1880's He emphasized the need for courses to have a large element of learning by doing in the curriculum as a way of promoting the development of leadership in Agriculture. He said this can be achieved by increasing the degree of freedom in learning, by improving integration between education and agribusiness, with extension courses for managers. He also presented the view that solutions to problems depend on getting people to think in a different manner.

Prof. Bruce Ross is Principal of Lincoln College in New Zealand. He related his experiences of outstanding success in high level appointments later on, for graduates from the farm management ad valuation courses at Lincoln. He bases the reasons for this success on a spirit of elitism amongst the highly selected students, on the curriculum being based on a farm case studies and a problem solving approach and on an encouragement of the pursuit of excellence. The course emphasizes the application of theory to real-world situations.

Questions raised following this session focused on the need for same work experience to precede post graduate study; for improved communication skills and holistic course programs; and for breaking the barriers which insulate students from the real world. Employers suggested that there should be less emphasis placed on measurements such as the HSC examination results by institutions in their selection procedures for students and more emphasis on an individuals vision.

The AGRI-MASS Survey

A large amount of the conference time was spent analyzing and debating the results of a North American Survey, replicated in Australia. The surveys were conducted by the Texas and Curtin Universities. The survey asked business and industry leaders to rank 74 attributes which they considered important to success in Agribusiness firm management. Interactions between the nature of the Agribusiness

activity, locality and ranking were analyzed and are reported in detail in the Australian and American papers.

In general the results of both surveys were similar. Interpersonal and communication skill were rated highest in the six categories. Business and Economic skills were rated third, and technical skills fourth. The computer, quantitative and management information group was rated fifth and previous work experience was rated last of the six major groups. There was debate about the significance of this information for course designers, much of which was also addressed by the authors in their papers. There was a good degree of support, however, for the arguments that many of the desired skills can be achieved concomitantly in courses which emphasize experiential learning and the development of improving learning styles.

Future Priorities in Education

Bill Schroder is Elders IXL fellow in Agribusiness at Chisholm Institute. He spoke about structural change in Agricultural education. He suggested that we have too many specialist institutions in this area in Australia and again reviewed the land grant university model from North America. He proposed streamlining the system by adopting franchising arrangements, distance education technology, TAFE/Uni links and easier articulation between courses and institutions. He emphasized the need for diversity in the way courses are structured.

Conclusions

While the conference achieved its goal in establishing dialogue at the education/business interface, I was disappointed by the opportunity lost by senior staff of the specialist agricultural institutions to discuss ways in which they could co-operate to improve their effectiveness. It was, as far as I am aware, the first time so many agriculture institutions have been represented at the same location. I think that the ramifications of the Dawkins white paper and the concerns about ownership of potential students were the factors inhibiting a lively dialogue between the institutions representatives.

The results of the AGRI-MASS survey have implications for secondary education in NSW. The Agriculture Syllabi in NSW embody the initiative discussed at the conference as being those which facilitate the development of skills seen as valuable by the corporate sector. While the provision exists for the teaching of business and economic skills, ranked third in importance in the survey, many teachers do not have expertise in these areas. There is a need for resources here, and a group of Agriculture teachers is developing a booklet to support the teaching of socio-economic concepts in the HSC Agriculture course. In the future, further support for the study of Agribusiness may become available for the 7-10 course.

Bruce Ramsay 19/8/88

RUMINANT & MONOGASTRIC CROSSWORD ANSWERS

BAAT VOL II 1988

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   V
   I  POULTRY  DYING
GASTRIC I O   O   A
   A   Z Q P  GOATS
   M CAECUM   S  S
 M I   R O  L H  S
LION  FOUR DIGESTION
 C  C U   O G E  M
PROTEIN RUMEN P PIGS
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 BULL I T SUN  R A L
 E  U   I U  BLOAT I
 S  L   C M    T I V
  ABOMASUM   C O OVA
    S   L B  A Z N
 TRUE  RUMINATION  D
A U   C M B  T A   E
C N   L   LULL  CROP
HONEYCOMB E  E   A T
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1988 NATIONAL STEER SHOW DUBBO

18 - 20 AUGUST



This was the first year that I had considered taking a steer to Dubbo to compete in the National Steer show. For a number of years prior to 1988 we had competed in our local shows, with varying degrees of success.

I doubt if I would have ever considered competing in Dubbo if it had not been if it had not been for an offer made by a local Murray Grey breeder. This breeder had competed in the pen section for a number of years, however he had not entered any stock in the led classes. Having watched our students competing in local shows, and seeing the enthusiasm that working with animals generated in them, he was prompted to offer the school a steer if we would prepare it and take it to Dubbo.

We accepted this offer with some degree of trepidation and concern that we may not be competitive. However this concern was soon dissipated as our students involved themselves in this project. In the long run we ended up in about the middle of our class: this pleased the donor of our steer and satisfied our students.
I would strongly recommend this competition to anyone who is interested in raising and showing steers as part of their Agriculture curriculum. The way in which the organizing committee has geared this competition to being an educational exercise, aimed at the students makes this a much better proposition in my opinion, than taking a steer to the Royal Easter show.

Results Class 1 - Liveweight under 360kg. To suit the local butcher and light supermarket trade. Approximate hot carcass weight under 180kg with 4-6 mm fat cover.

There were 22 school entries in this class.

1st - Gloucester High - Devon/Hereford cross. This steer was also the Liveweight champion School steer and second in the open class.

2nd - Scotts School Bathurst - Hereford, also 4th in the open class.

3rd - Scotts School Bathurst - Hereford.

4th - Cowra High School - Angus

5th - Gilgandra High School - Murray Grey/Santa Gertrudis - Hereford cross.

Results Class 2 - Liveweight under 360 - 400 kg. To suit the local butcher and heavy supermarket trade. Approximate hot carcass weight under 180-230 kg with 5-8 mm fat cover.

There were 18 school entries in this class.

1st - Kings School Paramatta - Hereford also first in open class 2.

2nd - Gloucester High - Simmental/ Charolais cross also 4th in open class 2.

3rd - Cowra High School - Poll hereford also 5th in open class 2.

4th - Gloucester High - Angus

5th - Narromine High School - Murray Grey.

Results Class 3 - Liveweight 400-470 kg. To suit catering and some export trade. Approximate hot carcass weight under 230-270 kg with 6-10 mm fat cover.

There were 20 school entries in this class.

1st - Merriwa Central School - Charolais/Hereford cross also Champion Heavy weight steer, and Grand champion school steer.

2nd - Gloucester High - Limousin/fresian cross also 5th in open class 3.

3rd - Wagga Wagga High School - Murray Grey/Charolais

4th - Scotts School Bathurst - Hereford.

5th - Merriwa Central School - Simmental/Hereford cross

Results Class 4 - Liveweight 470 kg and over. To suit export trade. Approximate hot carcass weight under 270 kg an over with 8-11 mm fat cover.

There were 8 school entries in this class.

1st - Scotts School Bathurst - Hereford. also 5th in open class 3

2nd - Kings School Paramatta - Angus/ charolais cross

3rd - Kings School Paramatta - Angus/ simmental cross

4th - Kings School Paramatta - Droughtmaster

5th - Kings School Paramatta - Simford/ Hereford cross.

Each class had a variety of cross bred as well as straight bred animals in it. This gave spectators a great opportunity to compare various breeds and crosses.
The best representation must go to Jim Henderson and Gloucester High, with their line up of 14 steers, while Ivan Gant and Merriwa central with the champion school steer would have been the most successful.

1988 saw a number of new schools entering the National steer show. I am sure that everyone who was involved gained from their involvement, and most will compete again next year.

If you are considering entering the 1989 competition and would like to know a little more, I am sure that anyone involved in 1988 would be able to help you, or contact Greg Marwick, Livestock Officer with the Department of Agriculture Dubbo.

John Lee
Glen Innes High

FINANCING YOUR FARM



BOOK REVIEW



The Australian Bankers Association in conjunction with the Marcus Oldham college has just produced a practical guide to farm financial planning and management.

The book is loose leaf produced, on heavy paper making it ideal for copying tables and charts for use in class. Contents of the book include chapters headed,

* Why Borrow Money
* How the Finance system works
* How to determine you borrowing needs
* Sources of Farm finance
* Preparing a case for a loan
* The bank interview
* Controlling farm finance
* Managing a farm financial crisis
* Improving financial performance
* A glossary of terms.

The material in the book is aimed at farmers and students. One important aspect of the book is the practical or hand on nature of the contents. Charts, tables and budgets are up to date and easy to follow. This makes this book a useful publication for agriculture teachers or as a school agriculture resource.

Enquiries about this book should be directed towards the Australian Bankers Association, 42nd floor, 55 collins street, Melbourne, 3000.
Telephone 008-033652 (Toll free)

Ivan Gant
Merriwa Central

3 UNIT AGRICULTURE EXCURSION



During the last few days of the mid-year break a group of approx 45 teachers and students from Galston High School, Notholme Grammar, Pennent Hills High School, John Paul II at Blacktown, Camden High School, Colo High School, Saint Pauls at Penrith, Kings School and Pymble Ladies College combined to spend time doing some field study related to the 3 unit electives .Trees on Farms., .Reproduction in Farm animals., and .Soil Management.

Accommodation was arranged at Newhaven Park, Bathurst which is managed for the Agricultural Technologists of Australia by Gary and Gloria Summers/. I thank Gary and Gloria for the excellent way in which they took care of us and recommend Newhaven Park as an excellent resource for excursions.

The most exciting aspect of these two days for me was the interaction which occurred between the students. They seemed to gain confidence from discovering that others were have similar *.hassles.* with their projects and were often just as confused in attempting to come to terms with the complexities with Agriculture generally. (Maybe through our interaction with our students we can encourage them also to be more *.at home.* with the confusion and complexity.)

I encourage others to think in terms of integrated activities where possible, as the opportunity to share with others certainly breaks down the sense of isolation many students and teachers feel at times. We certainly plan to organize this one again for next year..... (and don.t forget the Biennial conference at Tocal next year, which is another fantastic way to share ideas and gain support from others.

THE SESSIONS

Animal Reproduction

The activities for this elective involved visits to Murray Grey, Santa Gertrudis, and Angora Goat studs as well as a Dairy farm, to hear of the use of technology in breeding programs. It was very useful to find out how farmers utilized advances in technology and we experienced farmers enthusiastically using the latest techniques as well as those who wouldn.t touch such techniques with a *.ten foot pole.* (not even AI)

Soil Management

We were well catered for in this area by Chris Marshall from the Soil Conservation Office in Bathurst. Chris is wonderfully enthusiastic about his work as well as having a knack for imparting his ideas and information to groups of students. This opportunity to explore the work of the soil conservation in the field was extremely valuable.

Trees on Farms

To cover this elective we visited .Osborne., a property managed by Elizabeth Harvey who was a wonderful example of what commitment to making an impact can achieve. Elizabeth demonstrated her energy as she steamed up hills and through windbreaks, with us much younger folk in tow. From prepared maps and observation of the farm we were able to gain a sense of what is meant by a .Farm Tree Plan.

To complete the trees on farms program we were treated to a step by step walk through the propagating of seeds collected from the local eucalypts.

Many thanks also to John Middleton for running a session after dinner on carrying out a 3 unit project. Again this seemed to give the students some confidence hearing such an outline from someone other than their own teacher.

Wearily and with somewhat damaged eardrums from the musical accompaniment generously supplied at various intervals our convoy disbanded and headed home wishing that much of our time spent working together could be this much fun.

Angie Rutherford.

ANIMAL DEMAND & PASTURE SUPPLY



In response to Industry demand, and in order to illustrate the practical application of computer modelling I have developed a simulation that graphs the energy demand of a ewe, and the likely pasture supply of energy over a 12 month period. The user has the option of specifying various physiological states of the flock, and management strategies such as lambing times etc.

The following notes explain the rationale and theory behind the approach that I took in the development of this model. Much of the theory is well known, however it is worth summarizing the main points in order to focus attention on the **major** factors influencing this system. This has enabled me to establish a framework, that can be revised and expanded as more of the interactions between the various processes are quantified.

There is much evidence for a ..Feed Gap.. or a shortfall in the supply of pasture to much of Australia.s sheep population.

* Pregnancy toxemia
* Poor reproductive efficiency
* Weaner ill thrift
* Generally low wool yields

SUPPLY OF NUTRIENTS

In theory the supply of pasture nutrients will be a function of the,

a. Amount & characteristics of the forage
b. Nature of the digestive process
c. Nutritional value of the forage
d. Feed intake

The amount and nature of the pasture will vary quite considerably. However if we accept the view that in practice, the Energy value of the feed will be the major factor affecting animal productivity, then we have a focal point to begin work on the model.

ENERGY

I have made the assumption that the pasture will pass through three major stages of growth, and that we can determine, or use average Nett Energy values for the pasture at these stages. IE

1. Low Fibre Stage - when leafy and young (1960 kcal/kg)
2. Medium Fibre Stage - Tillering (1750 kcal/kg)
3. High Fibre Stage - Post Flowering (1340 kcal/kg)

Allowances have been made for the differing utilization efficiencies for maintenance, and production by allowing the sheep to eat more of the pasture to meet the energy demand for production processes such as body weight gain and lactation.

Alexander & Williams (1975) found that protein is rarely a limiting factor, and further when pastures are considered, the Amino acid composition is relatively constant, and independent of plant species, stage of maturity, or soil fertility. It is important to remember that in conditions of low light, or high soil N, considerable N may be lost from the rumen as ammonia.

Despite the large changes in the quality and quantity of available pasture, many researchers have noted that the calorific value fluctuates through a narrow range. (4-4.9 kcal/kg). The higher energy values reflecting a higher protein content in the pasture. The observed forage NE (Nett energy) values do vary considerably, and this is due largely to a variation in the energy losses within the animal.

It is significant that only in low fibre pasture does the NE exceed 50% of the gross energy of the pasture, and further for production processes the energy value of the pasture will be determined, by the extent to which the pasture is consumed as well as the NE of the forage. Thus, in terms of production, the level of feed intake is of primary importance.

Significant practically, is the fact that

clovers have slightly lower energy values, but are generally consumed in greater quantities, thereby producing slightly higher levels of production.

PROTEIN

The amount of crude protein (CP) available from the forage, has not been built in at this stage, although it is well accepted that the Digestible Crude Protein (DCP) levels obtained by sheep from forages will vary in the following way,

1. Low Fibre Stage - when leafy and young (138 g/kg)
2. Medium Fibre Stage - Tillering (100 g/kg)
3. High Fibre Stage - Post Flowering (75 g/kg)

As a consequence the proportion of DCP per unit of forage should decrease as the fibre content increases in the model.

FEED INTAKE

Ultimately, the ability of the pasture to meet the animals energy demand, will depend upon the intake of the grazing animal. Although other factors such as physiological state and the environmental factors influence the animals energy demand, these in turn are reflected in the amount of forage that the animal consumes.

In summary, three situations may be envisaged with respect to forage intake and the resistance of organic matter to removal from, the rumen. First the resistance may be too low to limit intake. Second, the resistance may be sufficient to limit intake, the basis of the limitation being a restricted accessibility of the cell wall constituents to the digestive enzymes. Third, the resistance may again limit intake, but the primary limitation is an impaired microbial metabolism due to the deficiency of an essential nutrient or the presence of a deleterious substance.

The first situation is found with the best quality low fibre forages only. The second applies to a wide range of forages, including most of the 20 forages which were researched to present the data in Table 1. In these cases the essential nutrient status is adequate, but the accessibility of the fibre constituents is limiting. The third situation is observed with many o the mature forages, where intake is limited by a deficiency of Nitrogen, often accompanied by a mineral deficiency.

It is noteworthy that even when intake is limited by the resistance of the forage to removal from the rumen, an enhanced energy demand, due for example to lactation or growth, but not pregnancy, can be accompanied by up to a 50% increase in intake.

Palatability, although touted as a major factor, is of little significance when the animals have become used to the feed. There is no evidence that exceptionally high levels of intake of forage is associated with high palatability, the converse is not true, and depressed intake has been demonstrated many times with some strains of phalaris. In most cases, this will not be a significant problem in simulations.

In summary, I have based Energy supplied on the basis of the collective data presented in Table 1. I have taken the likely Dry matter intakes and allowed for the changes in the fibre content of the pasture over the seasons. I have then converted the DM intake to a NE value, based on average figures. It is also possible to enter NE values for the pastures under consideration and allow for different management packages that would alter the availability of low fibre pastures, not present in the normal dry land situation.

ANIMAL DEMAND

This side of the equation will obviously be affected by,

a. The Physiological state of the animal
b. The efficiencies for which energy is used for maintenance and production.
c. Environmental factors
d. Management and stress

Table 1 presents average data that has been prepared from the research of 20 different pasture species, these have been related to the metabolic body weight of the sheep, IE.(Kg Live $^{0.75}$), and the feed intakes for pregnant sheep are expressed relative to body weight at the start of pregnancy.

Physiological State	Maintenance	Production	Total	Likely Maximum Intake
	[g/kg$^{0.75}$. Day]			[g/kg$^{0.75}$. Day]
Low Fibre Grass				
Adult Sheep - no gain	37	0	37	75
Adult Sheep - 100g/day gain	37	31	68	75
Ewe 125d pregnant - 1 foetus	46	5	51	75
Ewe 125d pregnant - 2 foetuses	52	9	61	75
Ewe Lactating - 1kg milk/day	39	60	99	110
Lamb (20kg) - 150 g/day gain	2	36	88	110
Lamb (20kg) - 300 g/day gain	52	68	119	110
Lamb (35kg) - 150 g/day gain	51	42	93	110
Medium Fibre Grass				
Adult Sheep - no gain	42	0	42	65
Adult Sheep - 100g/day gain	42	37	79	65
Ewe 125d pregnant - 1 foetus	51	6	57	65
Ewe 125d pregnant - 2 foetuses	59	10	69	65
Ewe Lactating - 1kg milk/day	43	72	115	95
Lamb (20kg) - 150 g/day gain	58	43	101	95
Lamb (20kg) - 300 g/day gain	58	81	139	95
Lamb (35kg) - 150 g/day gain	57	50	107	95
High Fibre Grass				
Adult Sheep - no gain	54	0	54	50
Adult Sheep - 100g/day gain	54	56	110	50
Ewe 125d pregnant - 1 foetus	66	9	75	50
Ewe 125d pregnant - 2 foetuses	76	16	92	50
Lactating - 1kg milk/day	56	109	165	50
Lamb (20kg) - 150 g/day gain	75	65	140	50
Lamb (20kg) - 300 g/day gain	75	123	198	50
Lamb (35kg) - 150 g/day gain	74	76	150	50

In the development of this model I have allowed for a variety of physiological states of an adult ewe, and have researched the NE demanded by the ewe in each of these situations. As shown in the graphical representation of the model, physiological states such as lactation have a dramatic effect on the energy demand of the ewe. Even more dramatic than the effect of twins. It is surprising to see just how much energy is required to produce the milk for one lamb, let alone two. Factors that can be changed in the initial set up of the model include.

* Maintenance
* Body weight Gain
* Pregnancy
* Lactation
* Production of wool above maintenance

Allowances have been also made for the fact that intake will increase with lactation and growth. It is also possible to alter the initial weight of the ewe and see the effect on animal demand. In a similar fashion the amount of wool produced above maintenance and the av quantity of milk produced allowed for.

Obviously allowances must be made for changes in environmental factors such as temperature and wind speed, which can have quite significant effects on energy requirements. For example an adult sheep with 5mm of wool has a critical temperature of 25^{oc}. This means that maintenance energy requirements will increase when the temperature drops below this level. It would not be difficult to allow for this once the appropriate equations were developed.

For the purposes of this model it is assumed that the environmental factors will not extend beyond the thermoneutral limits of the animal.

Management is another important factor that should not be overlooked, for it has been demonstrated that internal parasites have been associated with a depressed intake. Physic stress has also led to decreased intake, and pregnancy toxemia has been observed in ewes moved to unfamiliar surroundings to facilitate lambing.

This model has been used in practice and found to realistically model the energy demands of a ewe in a practical manner. There are obvious improvements to be made, however it does enable the user to identify more precisely the times of the year when animal demand will be in excess of the available pasture. It also has the advantage of quantifying this demand in energy terms. This could enable the producer to draft ewes into heavy, medium and light groups and feed according to demand, in order to make more efficient use of feed resources.

THE MODEL IN ACTION

The graph on page 23 illustrates how the simulation model works by graphing the data from a run of the simulation over 12 months with the following assumptions.

* A mature ewe of 40kg body weight

* A zero body weight gain

* A wool growth rate of 5g/day above that normally produced at maintenance.

* Ewes Mated in March

* An average of 1kg of milk/day

All of the above variable can be vaied in the model and the effects on the nergy demand of the ewe viewed instantly on the screen. On the pasture supply side the following assumptions were made, taking into account that ewes will be able to eat less of a high fibre grass, and that metabolic factors such as lactation (but not pregnancy) will increase the dry matter intake over and above that of a non-pregnant ewe at maintenance.

* Unimproved pastures will be used and that the quality of the pasture will vary with temperature and moisture availability.

* Pasture quality will be at its highest in the summer months with a Nett Energy value of 1960 kcal/kg dm.

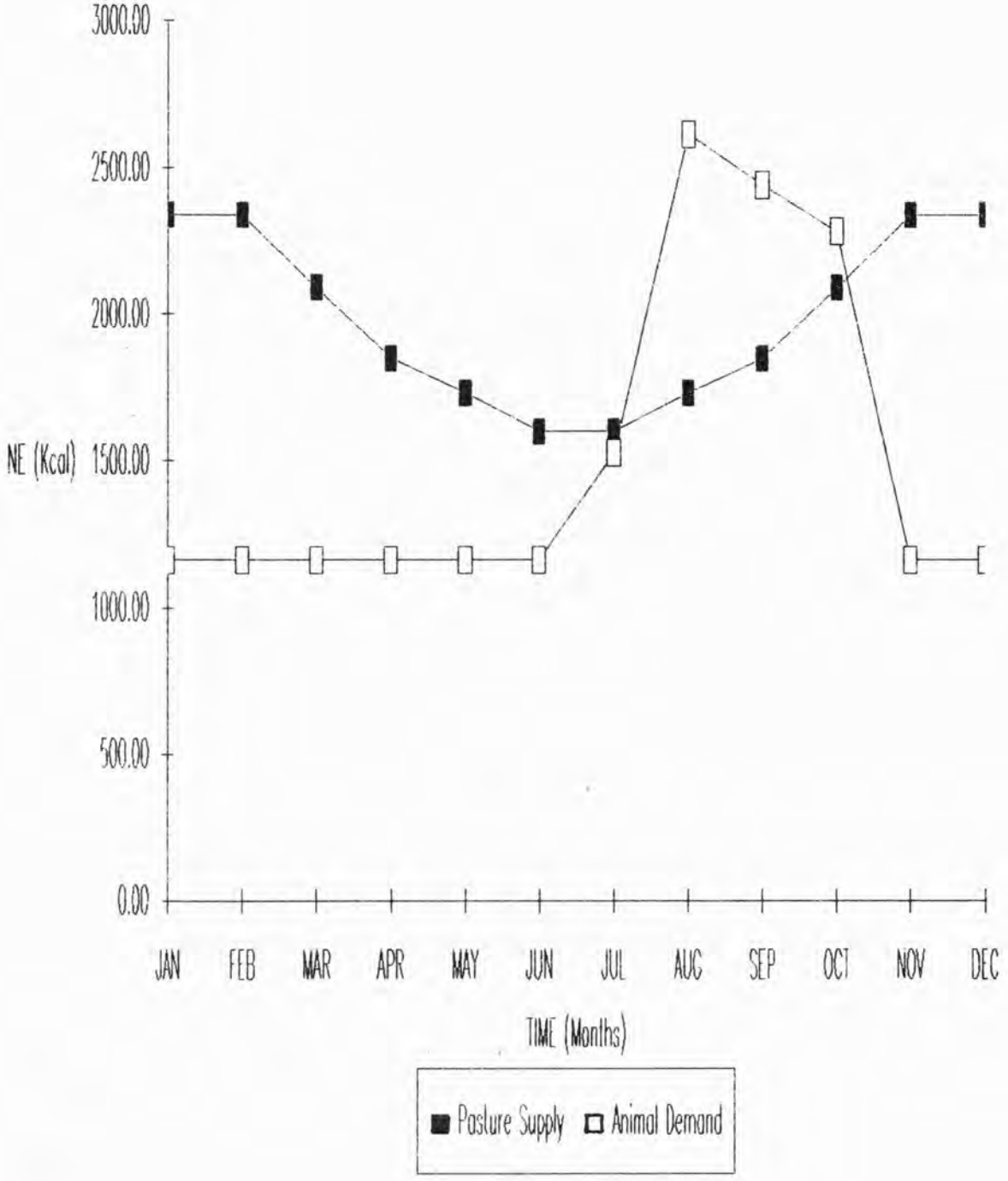
* Pasture quality will decline into the winter months and will have its lowest value in June/July of 1340 kcal/kg dm.

In practice the Nett Energy values for the pastures will be determined largely from published data, (unfortunately most of which comes from England). Some subjective assessment may be needed here, however the value of using NE values is that the quantity and type of supplementary feed can easily be calculated to meet the feed deficit.

I hope that this model is of use and would greatly appreciate some feed-back in the refinement of it.

IAN FOREMAN..

PASTURE SUPPLY vs ANIMAL DEMAND



GROSS MARGIN FOR – BARLEY (DRYLAND)

UNIT : 100.00 HECTARES
YIELD : 1.80 TONNES/HA
PRICE : $ 90.00 PER TONNE (ON FARM)

INCOME:

YIELD :180 TONNE @ $90/TONNE (ON FARM)		$ 16200
TOTAL INCOME		$ 16200

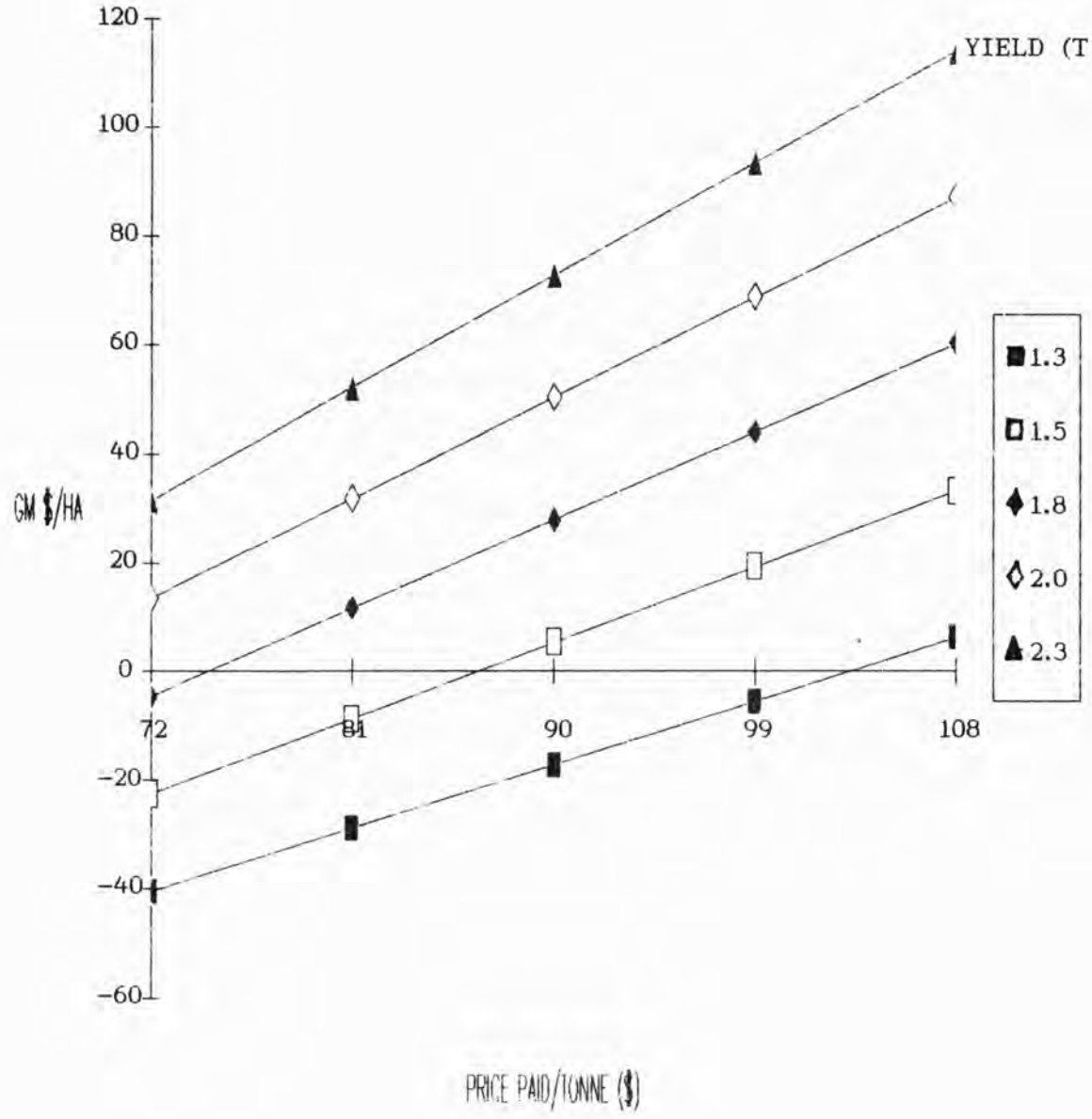
VARIABLE COSTS :

SEED	45.00KG/HA @ $ 295/TONNE = 4.50 T.		$ 1328
FERTILIZER - STARTER 12	50.00KG/HA @ $ 437/TONNE = 5.00 T.		$ 2185
FERTILIZER - UREA	100.00KG/HA @ $ 319/TONNE = 10.00 T.		$ 3190
TOTAL FERTILIZER COST =			$ 5375
BROMINIL	2.1L/HA @ $ 9.80/L ON 33 % AREA = 69.3 L.		$ 679
GLEAN	20g/HA @ $ 0.92/g ON 33 % AREA = 660 g		$ 607
2,4-D AMINE	1.8L/HA @ $ 4.40/L ON 50 % AREA = 90 L.		$ 396
TOTAL CHEMICAL COST =			$ 1682
SPRAY APPLICATION	@ $ 5.50/HA SPRAYED = 116.00 HECTARES		$ 638
CARTAGE	@ $ 0.00/TONNE		$ 0
HARVESTING	0.17 HR/HA @ $ 200/HR = 17.00 HRS		$ 3400
TOTAL CONTRACT COST =			$ 4038
PLOUGH	1 TIME @ 5.80 HA/HR @ $ 17.92/HR =17 HRS		$ 309
SCARIFY	1 TIME @ 5.80 HA/HR @ $ 17.92/HR =17 HRS		$ 309
WIDELINE	1 TIME @ 9.80 HA/HR @ $ 17.92/HR =10 HRS		$ 183
SOWING	1 TIME @ 9.20 HA/HR @ $ 17.92/HR =11 HRS		$ 195
FUEL and R & M (50%) =			$ 498
TOTAL VARIABLE COSTS			$ 13418
TOTAL GROSS MARGIN			$ 2782
GROSS MARGIN PER HA			$ 27.82

PREPARED BY : IAN FOREMAN

BARLEY PARAMETRIC BUDGET FOR 1988

This Budget has been developed for conditions that apply in the Central West of NSW. It assumes an on price value for Barley of $90.00/t, with an average yield of 1.8t/ha. The graph below shows the effect of a 10 & 20% increase and decrease in the price received for the barley, and extrapolates these effects on a 10 & 20% increase and decrease in the yield assumed in the model.



PREPARED BY : IAN FOREMAN

WHEAT GROSS MARGIN 1988

UNIT : 100.00 HECTARES
YIELD : 1.80 TONNES/HA
PRICE : $ 135.00 PER TONNE (G.M.P.)
COSTS : $ 48.00 PER TONNE

INCOME: HARVEST 180.00 TONNES

1ST PYTS @ $ 73.50/TONNE (90% GMP - costs)		$	13230
2ND PTYS @ $ 13.5/TONNE (10% GMP)		$	2430
PREMIUMS @ $ 0.00/TONNE (33% PH,33% NH1)		$	0
LATE PYTS @ $ 7.00/TONNE		$	1260
TOTAL $ 94.00/TONNE	A. TOTAL INCOME	$	16920

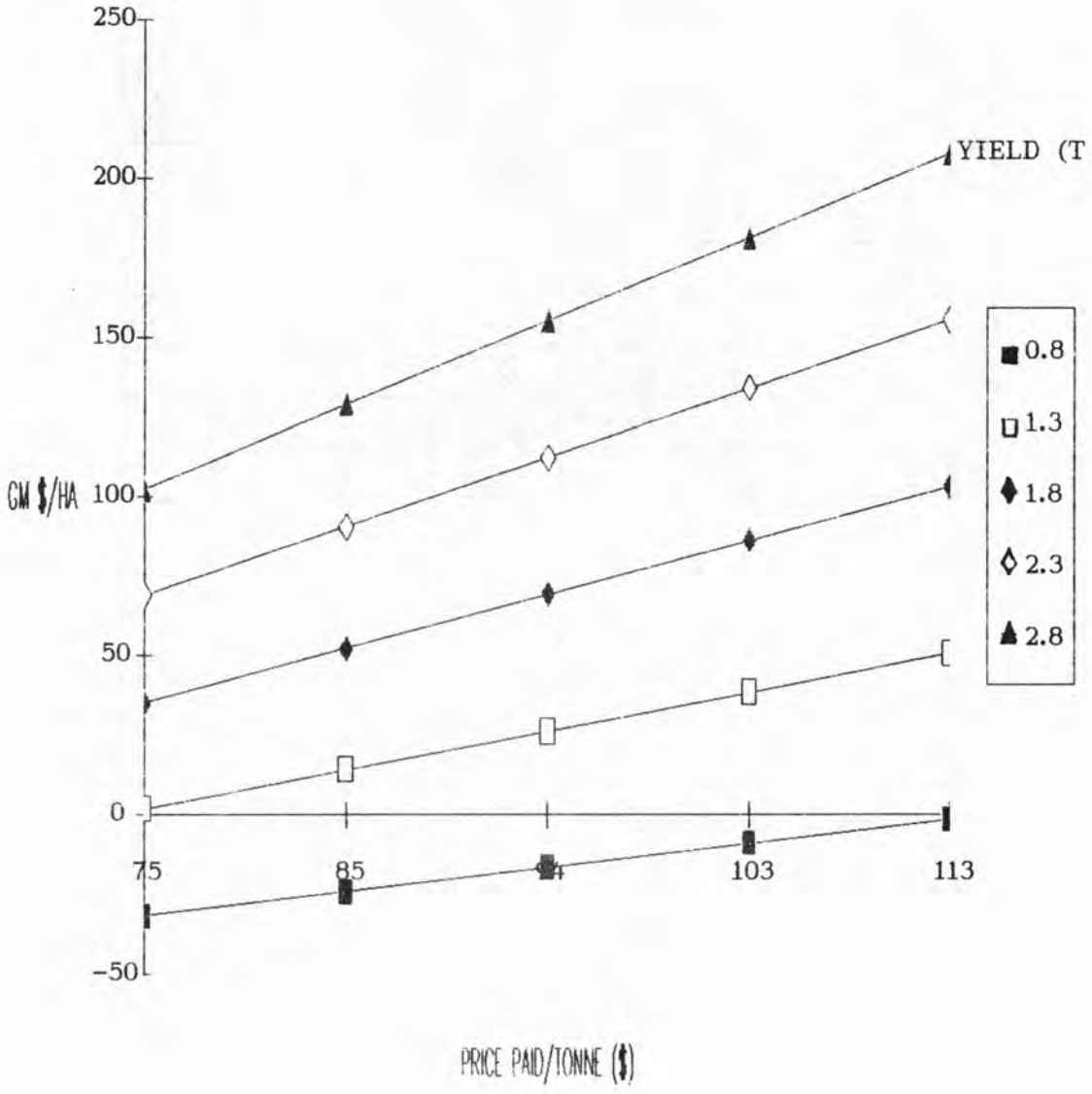
VARIABLE COSTS :

SEED 35.00 KG/HA @ $ 360/TONNE = 3.50 T.		$	1260
FERTILIZER - STARTER 12 33.00 KG/HA @ $ 409/TONNE = 3.30 T.		$	1350
FERTILIZER - UREA 0.00 KG/HA @ $ 336/TONNE = 0.00 T.		$	0
TOTAL FERTILIZER COST =		$	1350
AVADEX BW 2.1 L/HA @ $ 8.60/L ON 33.33 % AREA = 70L.		$	602
TREFLAN 0.7 L/HA @ $ 6.85/L ON 33.33 % AREA = 23.33L.		$	160
2,4-D AMINE 1.8 L/HA @ $ 3.95/L ON 50.00 % AREA = 90L.		$	356
TOTAL CHEMICAL COST =		$	1117
SPRAY APPLICATION @ $ 5.00/HA SPRAYED = 116.66 HECTARES		$	583
CARTAGE @ $ 8.00/TONNE		$	1440
HARVESTING 0.17 HR/HA @ $ 168/HR = 17.00 HRS		$	2856
TOTAL CONTRACT COST =		$	4879
PLOUGH 1 TIME @ 3.80 HA/HR @ $ 17.92/HR = 26.32HRS			
SCARIFY 1 TIME @ 5.80 HA/HR @ $ 17.92/HR = 17.24HRS		$	309
WIDELINE 1 TIME @ 9.80 HA/HR @ $ 17.92/HR = 10.20HRS		$	183
SOWING 1 TIME @ 9.20 HA/HR @ $ 17.92/HR = 10.87HRS		$	195
HARROW 1 TIME @ 7.50 HA/HR @ $ 17.92/HR = 13.33HRS		$	239
FUEL and R & M (50%) =		$	699
	TOTAL VARIABLE COSTS	$	10003
	TOTAL GROSS MARGIN	$	6917
	GROSS MARGIN PER HA	$	69.17

PREPARED BY : IAN FOREMAN

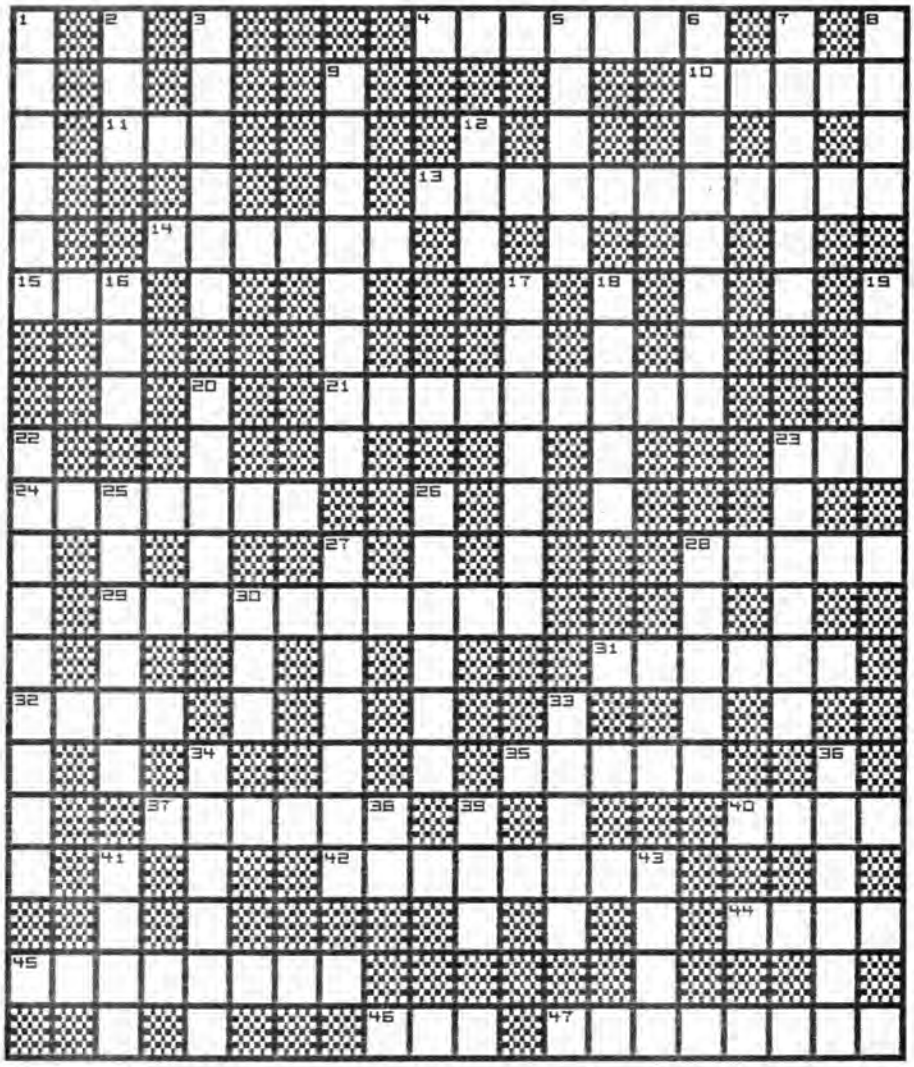
WHEAT PARAMETRIC BUDGET FOR 1988

This Budget has been developed for conditions that apply in the Central West of NSW. It assumes an on price value for Wheat of $135.00/t, with an average yield of 1.8t/ha. The graph below shows the effect of a 10 & 20% increase and decrease in the price received for the barley, and extrapolates these effects on a 10 & 20% increase and decrease in the yield assumed in the model.



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SHEEP ON FARMS CROSSWORD



ACROSS CLUES

4. A mojor problem roundworm in sheep, mainly in summer.
10. Pumps the blood round the body
11. Place on the ear to identify sheep in a flock
13. An injection to build resistance to diseases, eg Tetanus.
14. A young sheep between weaning ans 12mnth of age.
15. An entire male 12mnths plus
21. Removal of the wool around the tail and the back of the legs
23. The eyes enable the sheep to do this.
24. The process of giving birth to young in sheep.
28. Sheep breed that shares its last name with an aussie cricketer
29. This process removes the testes
31. The process of trimming hooves in sheep, mainly in wet areas.
32. This covers the top of a woolshed
35. A sheep breed with the same surname as an aussie cricketer.
37. The breed of sheep that produces the finest wool
40. A sheep flock with a pedigree bloodline.
42. A Border Leicester/Corriedale Hybrid formed in Tamworth 1965
44. The number of legs a sheep has.
45. The removal of skin from around the tail to reduce flystrike.
46. A common external parasite.
47. A 3/4 Merino and 1/4 Lincon breed of sheep, dual purpose breed.

DOWN CLUES

1. The aussie cricket captain has his surname in this breed.
2. Lambs are sold when they reach this condition.
3. Sheep from 12 to 18 mnths old
5. "____ Leg" is a sheep disease that is vaccinated against.
6. The removal of the wool each year
7. The joining of rams and ewes
8. Male sheep castrated when mature
9. A hardy Australian breed with the word "Back" in its name.
12. A entire male sheep.
16. An abbreviation for marks
17. The removal of lambs tails.
18. Two lambs born to one ewe
19. An external parasite that causes the sheep to scratch.
20. These are made from the best fine wools Australia has to offer.
22. Infection of wet parts of the body with maggots.
23. A term used to describe the merinos with coarse wool
25. The unit of measure used for wool diameter.
26. A ewe that has not had a lamb
27. When young lambs are yarded and have several things done to them
28. The month of the year when it is common for sheep to be mated
30. The number of tits a ewe has
33. The country that imports a lot of Australias fine wool
34. A catsrated male sheep
36. The month when most lams are born
38. A proposition
39. A female sheep 12mnths plus
41. A sheep removed from the flock
43. You must do this to the sheep before you can eat it.

SHEEP ON FARMS CROSSWORD ANSWERS

BAAT VOL III 1988

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B F H     BARBERS M S
O A O  C     L  HEART
R TAG  O  R A  E T A
D   G  M VACCINATING
E  WEANER M K  R N
RAM T  B   D T I G L
  K    A   O W N   I
  S S  CRUTCHING   C
F   U  K   K N   SEE
LAMBING  M I S   T
Y I T  M A N   MARKS
S CASTRATING   A O
T R  W R D   PARING
ROOF O K E  J  C G
I N W  I N MARSH  A
K  MERINO E P   STUD
E C T  GROWMARK   G
  U H     E N I FOUR
MULSEING       L   S
  L R   KED POLWARTH
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