

**AUSTRALIAN NUFFIELD
FARMING
SCHOLARS
ASSOCIATION**

**REPORT OF VISIT TO
THE UNITED KINGDOM**

**By
J.S. Fry**

(Western Australia 1987 Award)

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ACKNOWLEDGEMENTS: My sincere thanks to all those who assisted me to travel and study my various interests. They include:

- The Australian Nutfield Farming Scholars Assoc- tion — for my selection.
- Our sponsors — QANTAS, R. & I Bank, Citibank Bank, Masters Dairy and C.S.B.I.
- The UK Nutfield Farming Scholarship Trust for its network of contacts, its members wonderful hospitality and particularly its Director, Captain John Stewart for his planning and guidance.
- The MMB for their generous provision of a U for its hospitality and numerous con-

SUMMARY

1. **TOURISM:** Certainly a means of creating extra farm income provided the whole farming family support the idea of helping visitors to feel at home and welcome in surroundings as comfortable as their own home.
2. **ROUND BALE SILAGE:** Despite successfully storing unwrapped silage rolls in pits in Australia, English farmers believe the risk of dry matter loss and air leaks, makes storage of unwrapped rolls a risky economic proposition. Quality of all silage seen was very high.
3. **BULL PERFORMANCE TESTING:** Selecting 2 year old bulls off grass on the basis of whole of life performance is not the best way to purchase a top vealer sire. Muscling, because of its relationship to carcass yield, should be emphasised in tests.
4. **THE BELGIAN BLUE** as a breed, and bull beef as a system, have a lot to offer the Australian beef industry.

THE EUROPEAN COMMUNITY

increased 1% from 1975 to 1986 and we noted pro- duces generally were profitable about 1980 more but while some were profitable. Good news for us.

Milk production of 130 million tonnes exceeded demand by 14 million tonnes and contributed about 20% to world production surplus but that share is falling. There has been a 2.3% cut in quotas and for- wardly the world market for dairy products is all expanding so at least the trend is in the right direc- tion for Australian producers. With the introduction of the 1982 survey on milk over quota pro- duction is expected to drop 6% — equal to the total Australian production.

Trade in policy that will interest us as producers:

1. Direct support to the small and needy farmer rather than price support to all farmers.
2. Retirement of aged farmers and those wishing to leave the land will be encouraged financially.
3. Conversion strategies are being encouraged and farmers demonstrating more than a 20% drop in income from "extension" are supported to a maximum of 2400 per hectare in environmentally sensitive areas.
4. Council of Ministers now have constraints to pro- test budgetary objectives rather than to simply state political preferences.
5. The weak U.S. dollar has made European Com- munity export subsidies very much more expen-

OBJECTIVE: The objective of this report is to extract that which should be of interest to my fellow mixed farmers from my observations and experiences during a five month visit to the United Kingdom and parts of Europe.

BACKGROUND: I graduated at diploma level from Muresk in 1970 then spent two years in the Agricul- ture Department working as a technician gaining experience in those enterprises of M.C. TRY & SONS that were covered masterfully at Muresk. My interest in beef cattle developed and I accepted responsibility for the broader management in the home farm family partnership.

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Co-operative I realised the need to further develop management skills.

T. I noted in visiting bull performance testing round- offs and discussed to develop further.

Having provided substantial production incentives over many years the original objectives of the Treaty of Rome to increase output to provide a satisfactory living standard, stable markets and generally provide security for agriculture were realised some years ago. Consequent surplus production has produced prob- lems which contrast with their original objectives.

In the European Community 25% of farmers — those with the largest output — receive some 75% of total farm support. The bulk of the European Com- munity farm subsidies are received by farmers in the non-Mediterranean countries of the European Com- munity, those countries have national income which are well above the European Community average.

Production of cereals rose from 20 million tonnes in 1970 to 100 million tonnes in 1980, then to 132 million tonnes by the Community of 12 nations in 1986. This represents a 13 million tonnes surplus to domestic consumption. As a result we were told that a 10% price drop was likely and a compulsory "set- aside" would be introduced to take land out of pro- duction (subject of course to the French and English resolving their differences).

Prices are now no longer likely to rise for cereals, milk and beef.

Beef production is declining marginally with lower dairy cow numbers. Production 7.5 million tonnes in 1986 exceeded domestic use by 1.1% compared with 2.1% in the previous year. Consumption

NUFFIELD REPORT

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BACKGROUND: I graduated at diploma level from Muresk in 1970 then spent two years in the Agriculture Department working as a technician gaining experience in those enterprises of M.C. FRY & SONS that were covered insufficiently at Muresk. My interest in beef cattle developed and I accepted responsibility for the breeder management in the home farm family partnership.

Being involved in the objectives of this report is to highlight matters that should be of interest to my fellow mixed farmers. Following a five month visit to the United Kingdom and Europe farming partnerships of nine people with interests in orchard, dairy beef breeders, steer, marron and flood irrigation and also having a responsibility as a Director of a retail Co-operative, I realised the need to further develop my management skills.

This overall management objective together with an interest in yearling bull performance testing, round bale silage and the potential to develop tourist enterprise prompted my Nuffield application.

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- The MMB for their generous provision of a vehicle.
- The NFU for its hospitality and numerous contact.
- MLC, MAFF and ADAS for their various specialist advice and guidance.
- Michel Caffin who hosted us in France and provided many useful introductions.
- Mrs. Janet White who hosted us in Northumberland, provided me with many contacts and brought me down to earth on tourism.
- Mr. & Mrs. Gavin Wilkinson, who so admirably hosted myself and my family in London.
- My partners and Geoff Williams who willingly accepted my responsibilities at home, while I was away.

THE EUROPEAN COMMUNITY

Having provided substantial production incentives over many years, the original objectives of the Treaty of Rome to increase output, to provide a satisfactory living standard, stabilise markets and generally provide security for agriculture, were realised some years ago.

Consequent surplus production has produced problems which conflict with these original objectives.

In the European Community 25% of farmers — those with the largest output — receive some 75% of total farm support. The bulk of the European Community farm subsidies are received by farmers in the non-Mediterranean countries of the European Community; these countries have national incomes which are well above the European Community average.

Production of cereals rose from 50 million tonnes in 1970 to 100 million tonnes in 1980, then to 152 million tonnes by the Community of 12 nations in 1986. This represents a 13 million tonnes surplus to domestic consumption. As a result we were told that a 10% price drop was likely and a compulsory "set aside" would be introduced to take land out of production (subject of course to the French and English resolving their differences).

Prices are now no longer likely to rise for cereals, milk and beef.

Beef production is declining marginally with lower dairy cow numbers. Production 7.7.6 million tonnes in 1986 exceeded domestic use by 2.1% compared with 5.1% in the previous year. Consumption

increased 1% from 1985 to 1986 and we noted producers generally were pessimistic about producing more beef while lamb was so profitable. Good news for us.

Milk production of 120 million tonnes exceeded demand by 14 million tonnes and contributed about 50% to world production surpluses but that share is falling. There has been a 9.5% cut in quotas and fortunately the world market for dairy products is still expanding, so at least the trend is in the right direction for Australian producers. With the introduction of the 100% super-levy on milk over quotas, production is expected to drop 6% — equal to the total Australian production.

Trends in policy that will interest us as producers:

1. Direct support to the small and needy farmer rather than price support to all farmers.
2. Retirement of aged farmers and those wishing to leave the land will be encouraged financially.
3. Conservation strategies are being encouraged and farmers demonstrating more than a 20% drop in income from "extensification" are supported to a maximum of \$400 per hectare in environmentally sensitive areas.
4. Council of Ministers now have constraints to protect budgetary objectives rather than to simply satisfy political pressures.
5. The weak U.S. dollar has made European Community export subsidies very much more expens-

ive to maintain and economic pressure is immense.

6. Agriculture levies have declined from 15% to less than 4% as a source of revenue and the tax on goods and services has risen to the maximum of 1.4% in some Member States. Agriculture is already 73% of European Community expenditure and will decline.
7. Lobbyists from Australia and other countries are effectively pushing for removal of price support to all farmers, removal of export subsidies and encouragement for subsidies on to the European Community market rather than the world market.

As an Australian farmer, the European lesson is clearly that free market forces should not be disrupted by protection and that technology must be exposed to the market. Artificially improving margins only

encourages expenditure on inputs, particularly fixed costs and slows the natural movement of farmers from production provided by improved management and new technologies.

The annual domestic cost of agricultural protection to consumers and taxpayers, in order to benefit producers in the U.S., Japan and the European Community are as follows:

	Loss to Consumers and Taxpayers for every \$ transferred to producers
Japan	\$2.50
European Community	\$1.50
U.S.	\$1.38

DEVELOPING TOURISM AS A FARM ENTERPRISE

Throughout the U.K., Europe and Southern Ireland in particular, a large number of farmers (and others) have taken advantage of the huge volume of tourists moving through their respective countries and provided excellent bed and breakfast facilities for those wishing to stay "away from it all" and savour the tranquility or lifestyle of the rural people.

Most farm tourism developments have, in effect, put the women in the farming business to work. Some women than generate net incomes greater than their farming husbands and even greater cashflows than the farm business.

In the U.K. most of the custom for "on farm holidays" and "bed and breakfast" accommodation comes from the urban population, but a high proportion of overseas tourists clearly prefer to use farm accommodation in order to see the country.

One of the best examples of a co-ordinated, well managed scheme was that of Jane Buchanan's in Scotland. She serviced 65 clients, all farm housewives, by collecting bookings and allocating guests to her clients depending upon where the tourists wished to travel. She required a fee of \$180 from each of her clients as their co-ordinator, and for that fee she would advertise, set standards, allocate guests, inspect facilities and advise on upgrading, discuss the management of guests — making sure that all the people involved were co-operative, collect and distribute payments and generally plan tours.

Mrs. Buchanan was assisted initially by a Tourist Board grant which allowed a survey of potential clients, the purchase of a computer and set-up expenses. Of 300 potential clients, only 65 were accepted into the scheme following inspection. Generally her clients supplemented their farm incomes by \$9,000 per year, two thirds of which is after expenses. Most clients had to spend about \$10,000 on improvements such as toilets, showers, wash basins, home heating, linen, crockery, floor coverings, painting and general upgrading. Interest on their capital expenditure is included in the expenses mentioned. However most capital expenses were offset against income and not declared for depreciation.

Minimum standards accepted by the client group included:

1. Accommodation must be clean and well maintained.
2. Membership of local Tourist Board and display of classification and grading was recommended.
3. Bedrooms — minimum of 2 guest bedrooms and a maximum of 6.
 - furnishings complete.
 - privacy essential.
 - bed size adequate and acceptable for children.
 - washbasins provided with hot running water.
 - floor coverings throughout.
 - electrical and lighting must be adequate.
4. Baths — 1 for every 10 guests (or separate shower).
5. Toilets — separate, well ventilated and not open to storage and eating areas; 1 for every 7 guests.
6. Lounge and dining rooms to be separate and available during the day and evening; access not to be through the kitchen.
7. Kitchen must meet Health standards and be free of pets when food is being prepared.
8. Meals — preferably fresh home baked and cater to tastes. Evening meals — three course with tea and coffee, served between 6 p.m. and 8 p.m. or by arrangement. Matching crockery and cutlery, provide tablecloth, table mats, serviettes, etc.
9. Exterior — driveways and gardens to be well maintained.
10. General — give permission to walk around farm, crops, and animals.
11. Tariff — \$32 per person for evening meal, bed and breakfast.

- \$20 per child 12 years and under for same.
- \$11 per child 5 years and under for same.

Bed and breakfast tariffs vary from \$15 per adult single to \$32, with an evening meal adding between \$7 and \$11. Typically, 2 adults and 2 children pay \$60 — \$65 for Bed and Breakfast accommodation.

Statistics for Scottish Farmhouse Holidays:—

Guests country of origin:—

Scotland	9%
England)	55%
Wales)	
Nth. Ireland	6%
Eire	5%
U.S.A.	6%
Canada	2%
Australia	1%
Germany	3%
France	7%
Italy	4%
Rest of Europe	2%

Length of stay:—

1-3 nights	27%
4-7 nights	49%
8-13 nights	19%
14+	5%

Bookings with children 27%

Number of farms visited:—

1	58%
2	21%
3	11%
4	6%
5	2%
6	1%
7	1%

Only 10% of guests were repeat visits.

The average client accepts 285 bed — nights per year and with an average booking of 2.5 people she can expect 30% occupancy, probably averaging 50% during the holiday season.

Providers of self catering facilities have much higher overhead costs, generally cannot provide the friendly atmosphere of catered holidays so therefore cost as much and are not nearly as popular.

ROUND BALE SILAGE

Contrary to expectation, I found no round bale silage stored unwrapped in pits. It was all wrapped or bagged and stored above ground occasionally under cover. My observations included the following:—

1. Oxygen must be kept out and in the U.K., storing silage rolls in a sealed pit was unacceptable because of the risk of air leaks. This meant silage had to be wrapped or bagged. Both systems were popular particularly in the north of England and on smaller farms where the majority of silage was stored in round bales.
2. The extra expense of wrapping and bagging (\$3 — \$3.50 per 4 foot bale) was always justifiable to prevent dry matter and quality losses. Pre-stretching of the plastic wrap was allowing a 50% reduction in material cost from \$2.20 to \$1.10 per bale. However some of this saving was being used to put extra wraps on the bale.
3. The moisture level preferred in silage throughout England was 25% dry matter. It was considered that dry matter and digestibility was lost either side of 25%; if lower through effluent, and higher then 25%, through respiration during wilting. It was estimated 2 percentage points of digestibility

was lost per day of wilt. However the best silage I saw in England was 2 day wilted, leafy second cut, 30cm long, and tested 41% D.M., 18.5% protein, 71% digestible and 11.5 M.J./Kg of metabolisable energy. This was after being wrapped for 9 months.

4. Ammonia tested silage had the potential to lift digestibility about 15-20% and protein by 4% when using 84 litres per tonne of silage. The practice was not common and clearly could only be used with bags.
5. The percentage of ammonia as a proportion of total nitrogen in the silage was a popular guide to quality of fermentation and ranged from good at 5% to poor at 15%. It is a ratio of little value where balanced clover — rye grass dominate, as in Australia.
6. Silage was also being traded at about \$40 per tonne (25% D.M.) and this meant that baled silage had the advantage of sale at any time particularly as the price rose towards the end of a long winter. Some silage sold as high as \$56 per tonne which equalled winter barley in cost per unit of digestible D.M.

YEARLING BULL PERFORMANCE TESTING

This was to be my main area of interest as I was searching for support for the objectives of my Bull Test. These are:

1. To maximise the rate of improvement to growth and finishing ability to 400 days of age.
2. To provide low cost central testing facilities for 200 day old bull calves through to 400 days on grass, hay and grain.
3. Testing at the age at which the progeny of the bulls are to be sold.

4. Testing in the environment which their progeny are to be sold — to increase heritability.
5. Finishing the test bulls to slaughter condition at 15 months in order to allow, sale of culls at commercial profit and the use of selected sires immediately for mating, in order to reduce generation intervals.

I observed bull tests in the U.K. and France and spent some time talking to Professor Krausslich in Munich, who was a specialist in beef breeding.

The German argument was supportive of objective 1

and concentrated on as few characteristics as possible in order to make the most rapid progress.

However the French and English had a blend of characteristics including growth, muscling, frame size, function of legs and feet and conformation.

Prof. Krausslich fully supported selection of growth to 400 days for early and medium maturing breeds but suggested 500 days would be more appropriate for Simmentals, Charolais and other late maturing breeds. The Angus, he suggested, should be selected at an even younger age than 400 days.

He saw no value in selection for size and preferred to place minimum standards for structural soundness and conformation rather than score these characters in a selection index.

Generally all tests satisfied the objectives numbered 2, 3, 4 and 5. Test bulls were not gaining in weight anywhere near their potential and all tests were working with bulls under 400 days of age.

Because most of the bulls returned to their respective owners at the end of the test, the breeders would then concentrate on preparing them for sale, and so the emphasis was not necessarily on finishing the cull animals for slaughter by the end of test.

Rations varied but all seemed to avoid the very high energy rations presumably because of fertility and laminitis problems. Typically rations would consist of 50% hay (or silage in Dry Matter equivalent), 36% cereals (24% barley and 12% oats) with protein coming from 4% soya plus molasses, minerals and vitamins making up the balance. This ad-lib ration provided an average growth rate of 1.3Kg per day and finished all but the latest maturing bulls.

This was the ration used at the Limousin Central Testing station "De Lanaud" at Boisseuil near Limoges, and it was almost identical to our finishing ration but for the protein component which in our case is lupins and urea.

In most years 400 bulls are tested in 3 batches at Lanuad. They are weaned on farm at 210 days before delivery to the Testing Station. Having arrived they are allowed a further 30 days to settle in and adjust to the ration.

After that the test runs for a further 120 days followed by a period of preparation for service and sale. At the sales the top 5% of bulls on the weighted blend of characters already mentioned are sold for between \$9,000 and \$11,000. The next 45% generally average \$4,500 and the balance that can be sold for breeding usually return \$3,000 to \$3,500.

The French selection criteria was based on market demand. If the demand was for frame size and muscling the index would be given a weighting to allow for the emphasis. As a result the bulls sold with the highest index were the ones in demand but they were not necessarily the superior animals for any one character. As a result I believe the emphasis for the Limousin breed was too much towards large framed animals regardless of growth. Fortunately the breed was maintaining strong pressure on muscling; a breed characteristic that is indeed fashionable and valuable.

To demonstrate the emphasis the following table indicates the points given to the four principal characteristics mentioned. These are made up from 24

conformation aspects, judged subjectively by independent experts.

- Muscular development 70 points (breed average 44 in 1985)
- Skeletal development 50 points (breed average 31 in 1985)
- Functional capacity 50 points (breed average 32 in 1985)
- Breed characteristics 30 points (breed average 19 in 1985)

These points are then combined with the test growth performance to give an index shown as a % relative to the average of 100.

Final rating of a group of March 1986 drop bulls compared with their test growth.

Index	Test growth rate (in declining order)
*102.7	1.553 Kg/day
*107.3	1.477
119.2	1.432
111.4	1.424
106.7	1.379
106.8	1.356
112.4	1.326
100.8	1.318

*The top two bulls on test gain both suffered from having only average skeletal development thus verifying my argument.

The English selection was similar to the French but instead of applying subjective measurements to market trend characters, they placed economic values on a basket of characters including birth weight, calving difficulty, weight-for-age (200 and 400 days), fat thickness (ultrasonic) and muscling score to produce an index.

They disregarded the fashionable (and useless) height measurement or frame score and placed threshold values on locomotor function and jaw structure. Male and female fertility were also excluded from the index because it was difficult to relate testis size to conception rate, and appropriately, female fertility was considered in the cow maternal index.

Index scores are scaled to have a general range of 50 — 150 points with 100 as the mean. The selection differential (S.D.) of the index is set at 20 points. Below is a list of the number of points attributed to 1 S.D. of each measured character for the Limousin breed.

	Index points scored
Calving difficulty score	7
Birthweight	5
200-day weight	4
400-day weight	20
Daily feed intake	12
Fat thickness	9
Muscling score	4

ie. a 10% variation in 400 day weight has been given the same emphasis as a 50% variation in 200 day weight and muscling score.

Heritability of the character, genetic correlations between the characters, phenotypic correlations and economic values of the character are all taken into consideration in calculating the selection index.

Examples of the heritabilities and correlations used:

Heritabilities:

Fat thickness	0.10 (higher in British breeds)
Muscling score	0.30 (lower in British breeds)
Calving difficulty	0.05 (higher in British breeds)
Feed intake	0.50 (lower in British breeds)
Dressing %	0.40 (lower in British breeds)

Correlations:

Muscling score and Dressing %	0.30
Fat thickness and Dressing %	0.20

Predicted genetic responses for one phenotypic standard deviation of index selection.

Measured character

	Breed Groups			
	A	B	C	D
Calving difficulty score	-0.01	-0.02	-0.06	-0.06
Birthweight	0.16	0.13	0.09	0.08
200 day weight	0.30	0.29	0.22	0.21
400 day weight	0.28	0.26	0.33	0.30
Daily feed intake	0.11	0.10	0.08	0.05
Fat thickness	-0.26	-0.28	0.00	0.01
Muscling score	0.10	0.03	0.16	0.15

- Breed Groups: A Angus
 B Hereford and red breeds
 C Limousin and South Devon
 D Charolais and Simmental

This table indicates that the various selection indexes developed for the above breed groups would place different emphasis on the various characters, eg. the Angus would place very little emphasis (few points) on calving difficulty score compared with the European breeds.

Likewise the European breeds place little emphasis on 400 day weight. Use of the Beef Index would mean breeding cattle with more saleable meat at the cost of some increase in feed intake (but improved feed conversion efficiency) and with neutral or slightly beneficial effects on calving difficulty. With index designs for breeds such as Angus the main effect would be increased weight and reduced fatness but with an increase in feed consumption. In lean breeds, such as

BULL BEEF

In Australia we suffer from lack of carcase classification for bulls. Regardless of age and quality they virtually command one category and therefore one price. This is a great disincentive to run bull trials where cull bulls sold are sacrificed for prices well below their steer herdmates. Only when carcase weight reach 300Kg or more will a live bull earn for meat as much as his steer equivalent and this is usually because of the bulls higher dressing percentage — not the price/Kg dressed.

In Europe, bull beef is not only popular but in most countries, except for Eire and the U.K., it is preferred.

Percentage of total beef production in European Community in 1984:—

Limousin, there would be no change in fatness, and the index is designed to reduce calving difficulty.

An advantage of the index is that individual character records can be missing but it still allows an index to be calculated, although with less accuracy. Minimum group numbers of 6 are recommended.

Most of the test bull groups I visited were in the range of 6 to 15 in number and were all run on-farm sometimes as co-operatives with contributors paying an agistment fee for feeding, housing and management.

The large French Control Testing Station, Lanaud, charged \$900 per bull. In the U.K. feeding costs alone would amount to \$650 (for 300Kg of gain) and so the fees would be similar (in practice they are subsidised through advertisers' sponsorship).

My conclusion of the value of the index as a selection tool was that it suffered from too large an influence from backfat measurement. In other words, like the French where frame size had too large an influence, the weighting given to backfat more than offset the advantages an individual might have for growth and carcase yield. I believe fatness and frame size are too subject to fashion to be included in breeding objectives. Both characters are easily adjusted by crossbreeding. Too many breed societies are trying to breed stereotype cattle.

This observation leads me to comment on amalgamations of breeds. A comment made to me in England on the South Devon breed was that the Society is allowing up to 1/8th Limousin infusion. To me this was great news, here were two breeds with so many common characteristics prepared to share the excellent temperament and good milking character of the South Devon and the excellent muscling and carcase characteristics of the Limousin. The best these Societies could do is amalgamate completely.

Similarly early maturing red breeds could work together perhaps to take the susceptibility to cancer eye out of the Hereford, use the excellent temperament of the Devon and develop better polled cattle BUT most of all retain the early maturing characteristics.

	BULLS	STEERS
Belgium	29.5	5.1
Denmark	43.9	0.6
France	15.9	15.3
Greece	66.2	0.6
Eire	0.9	54.8
Italy	63.4	0.7
Luxembourg	27.4	15.8
Netherlands	13.0	0.4
U.K.	4.2	49.3
W. Germany	49.7	1.3

In the U.K. (since 1982) there is a definite swing to beef production from young bulls. This change is now occurring at an even faster rate since the banning of implants.

U.K.	STEERS	HEIFERS	BULLS
1982	60%	62%	8%
1983	59%	32%	9%
1984	57%	30%	13%
1985	56%	29%	15%

The percentage of young bulls at York selling centre is now 30% and they are receiving a premium for grade 1 and 2 bulls over steers (grade 1 by as much as 30 c/Kg L.wt.).

The arguments for bull beef are clear:—

1. Bull beef completely replaces the lost efficiency that implants provided for steers.
2. European consumers want lean meat (much leaner than Australian consumers are presently given).
3. Cost factor — one less job to do.
4. Conversion rates are superior.
5. Carcase weights are 10% higher than steers.
6. Carcase yields more lean meat.

	Bulls	Steers
18 month beef carcase weight	280Kg	250Kg
lean	69.0%	62.4%
fat	13.4%	19.6%
bone	17.6%	18.0%

A NEW BEEF BREED FOR AUSTRALIA?

Probably the most exciting part of my trip was examining the potential of the Belgian Blue for our beef production systems.

They are a truly remarkable breed where muscular development and carcase yield is concerned. Prior to travelling, the only news I had of them was: "difficult calving would more than offset any advantages in muscling".

I am pleased to report that this is far from fact.

Impact Of The Belgian Blue In The U.K..

Since their introduction in 1981 the "blues" have made a considerable impact in the dairy herds by increasing the value of the dairy calf because store buyers have recognised the improved carcase characteristics of the crossbred calf.

Semen sales have risen rapidly to 5%, equal to the Charolais in market share. Some place the potential at or better than the Limousin's 13%.

Dairy farmers have this last season seen Belgian Blue cross calves average about \$300 compared with Friesians at \$180. Store buyers, even at the higher purchase price, can still achieve greater profits from the increased conversion rate weight gain, higher proportion of lean and better price/Kg.

Calving problems have not been any more significant than Charolais. Many observers stated that cross bred calves out of Friesians calved with the same % of difficulty as all European breeds.

ie. 1% requiring veterinary assistance.

In Holland a group fo European breed bulls were used over Friesians with the following calving difficulties.

Breed	Birth Weight	Difficulty Calving
Friesian	38.9 kg	1.5%
Belgian Blue	43.7 kg	6.9%
Limousin	42.9 kg	6.8%
Blonde Aquitaine	41.7 kg	8.0%
Simmental	43.2 kg	12.4%
Charolais	44.2 kg	13.4%

The arguments against bull beef are generally subjective:—

1. Dark cutting beef — mainly from pre-slaughter stress as a result of bulls being more active particularly in poor weather.
2. Eating quality — probably due to "cold shortening" as a result of leaner carcasses.
3. Extra cost in paddock fencing and handling facilities.

Quiet handling and good management can largely overcome these problems.

In Australia, vealer bull production should be encouraged because they are sold at an ideal weight and age to avoid management problems.

Nutrition is at a peak so most carcasses would have more than adequate finish to avoid the problems of cold shortening. Feedlot finished weaner bulls should also classify at the highest level of carcase quality.

The "difficult calving" percentage needs interpretation but the relative results are interesting. Normally the Belgian Blue has a higher proportion of difficult calvings than the Limousin.

An independent study by Harper Adams Agricultural College compared Charolais x Friesian with Belgian Blue x Friesian bulls and heifers.

Their conclusions using Belgian Blue on Friesian were:

1. In a barley beef system, growth rate, carcase classification and carcase weight for bull progeny were the same as Charolais x Friesian, but had higher killing out % and higher value and therefore higher margins.
2. Heifer progeny in the same system grew faster to produce heavier carcasses of better conformation, higher killing out % and higher value to give higher margins than Charolais x Friesian. A 250 kg carcase at a food conversion of 5 : 1 from heifers while still maintaining average fatness is a most excellent performance.
3. Substantial increase in saleable boned out meat yield.
4. No major calving problems.

Boned out cutting yields comparing Friesian bulls with Belgian Blue x Friesian bulls.

Carcase Composition	Friesian	Belgian Blue x Friesian
Bone %	19.9	17.5
Fat trim %	8.3	4.9
Boned out meat %	70.8	77.2

Distribution	Friesian	Belgian Blue x Friesian
Buttocks	14.6	16.8
Hind quarter shins	2.6	2.6
Fillets	1.5	1.6
D. Rumps	3.1	3.6
Strip loins/sirloins	4.1	5.0
Hind quarter flanks	5.7	4.9
Chuck & shoulder	15.6	17.0

Carcase Composition	Friesian	Belgian Blue x Friesian
Neck & clods	6.4	6.7
Fore quarter shins	1.9	2.0
Briskets	3.3	3.8
Chines	3.1	3.3
Fore quarter flanks	3.8	3.8
Trimming	4.6	5.3
Other	0.5	0.8
	70.8	77.2

My conclusions on what the Belgian Blue could offer Australian beef producers are:

1. Superior feed conversion efficiency to any other breed.
2. Superior dressing % to all other breeds.
3. Superior carcass conformation to most other European breeds and all British breeds.
4. Superior growth rates in crossbred progeny to most other breeds.
5. Superior temperament to most other European breeds, particularly the Limousin, and equal to the better British breeds, like the Devon.
6. Leaner carcasses than all other breeds except perhaps the Charolais.
7. Higher mature weights than British breeds except the South Devon and equal to most European breeds.

COMMENTS IN CONCLUSION

1. **DAIRY:** It is time that Australia recognised that its Dairy industry is a food producing industry not just a fat and milk producer. Payment for milk solids should replace payment for milk fat and/or milk litres. A payment for protein at least equal to or higher than a fat payment should place the correct emphasis on milk as a food.

Observations of dairying in England brought home to me what should have been obvious. Dairy farms with a 1 — 2 month dry period from a seasonal calving certainly have a lower cost of production. In W.A., this could be achieved by providing negotiable monthly milk quotas instead of quotas that require year round production.

This negotiability in W.A., could allow south coastal dairymen to buy (or lease) April, May and perhaps June quota from irrigation areas and the reverse could take place in March, February and perhaps January.

Wherever or however the transfers take place doesn't really matter, provided the industry can best utilise the lower cost of production associated with particular areas in certain seasons at various times and allow for a drying off time to some farmers.

8. Frame size of less height than most European breeds but body-length as long as most.
9. Newborn calves have a greater will to live than Charolais and probably no greater mortality than any other breed.
10. Muscling unsurpassed by any other breed.

Some of the disadvantages include:

1. Higher birth weights than all British breeds and equal to Charolais and Simmental in calving difficulty.
2. Only suitable for mating to cows, not heifers.
3. Virtually no use in Australia as a pure breed because of the high % of caesarians required (30% of male calves and 15% of females).
4. Extremely lean and may not carry enough body fat to survive difficult times.
5. Smaller testicles than any other breed including the Limousin but semen quality is good.
6. May not walk as well as other breeds and together with "5" will possibly require a higher percentage of bulls in a paddock mating situation.
7. White colour of many bulls may produce skin cancer in some harsh environments.

2. **BEEF:** Clearly we must strive for lower cost through improved efficiency associated with bull beef production particularly if consumer pressure forces the banning of implants. Vealer production could certainly benefit provided quality incentives are in place.

There is a need for a large co-operative central nucleus breeding scheme for the popular beef breeds (or at least breed types), where the best females are selected and run together to produce the best possible bulls in order to supply the members with breeding material at cost with sales of surplus breeding material on to the market.

Alternatively the bull tests need to be expanded so that all potential breeding bulls can be rated in a common environment similar to where their progeny will be expected to perform.

3. **HORTICULTURE:** I feel the potential exists for vertical integration within the apple industry where growers product and market their final product and/or by-products. A juice producing co-operative should flourish under the current market growth conditions and encourage more of the second grade fruit off the fresh fruit markets, depressed currently from oversupply.