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## Progress report : 1996 / Cattle Industry Compensation Act Research Advisory Committee.

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**CATTLE INDUSTRY COMPENSATION ACT  
RESEARCH ADVISORY COMMITTEE  
PROGRESS REPORT  
1996**

**RESEARCH ADVISORY COMMITTEE**

**Mr J. Allen (Chairperson)**

**Mr J. Hetherington**

**Mr M. Norton**

**Dr B. Mackintosh (Technical Adviser)**

**Mr W. Standing (Secretary)**



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## **INTRODUCTION**

The Cattle Industry Compensation Fund was established under the Cattle Industry Compensation Act 1965. Monies received on cattle sales by the Commissioner for State Taxation are paid into the Fund and matched by State Government appropriation.

Funds are held to compensate producers for losses incurred in disease eradication programs, to promote and encourage scientific research for improvement of cattle health and promotion and for purposes that, in the opinion of the Minister, will promote and encourage the cattle industry.

An Advisory Committee, established by the Hon. Minister for Primary Industry makes recommendations for funding on a project basis. The Advisory Committee published progress reports in 1984 and 1989. This report covers the period 1990 to 1995.

## **ADVISORY COMMITTEE MEMBERSHIP 1990-1995**

### **Ex-officio members**

Agriculture Western Australia

Chairperson  
Mr J.M. Allen                      June 1991 on  
Secretary  
Mr W.R. Standing

University of Western Australia

Scientific Adviser  
Dr J.B. (Bruce) Mackintosh

### **Ministerial appointments**

Pastoralists and Graziers Association

Mr J.P. (Paddy) Dempster      December 1989 to December 1992  
Mr J. (Joe) Hetherington      December 1992 on

Western Australian Farmers Federation

Mr M.N. (Mike) Norton      December 1989 to December 1995

## PROJECT FUNDING 1990-1995

### Projects supported by the Cattle Industry Compensation Fund Research Advisory Committee from 1990/91 to 1995/96

	1990/91 \$	1991/92 \$	1992/93 \$	1993/94 \$	1994/95 \$	1995/96
Pastures for cattle in higher rainfall areas (Agriculture Western Australia)	7,000	7,000				
Response to selection in two cattle breeds (Agriculture Western Australia)	14,050	14,750	7,650			
Primary Product Promotions	1,500	2,000	2,500	2,500		
Investigations into the cause of Bovine Spinal Myelinopathy (Murdoch University)	2,000	2,000				
Evaluation of dual energy X-ray technology for the diagnosis status in cattle (Agriculture Western Australia)			2,000			
Research Report Mr John Lawson	1,500					
Management systems for Kimberley weaners in the South-West (Agriculture Western Australia)	3,340					
Estimating the carcass composition of cattle from live animal measurements (Agriculture Western Australia)	8,500	9,290	10,220	11,240		
Prediction of beef quality - the effects of age, environment and breed types on the properties of collagen in beef cattle (Agriculture Western Australia)	17,374					
Post-graduate research training Mr B.H. Panizza (University of Western Australia)	7,997					
Prediction of beef tenderness from muscle enzyme systems (Agriculture Western Australia)			6,000			
Measurement of backfat thickness in beef cattle to improve marketing efficiency (Agriculture Western Australia)			6,000			
Meat Industry Promotion Committee	1,000	1,000	1,000	1,000	1,000	1,000
Reducing dark cutting meat (Agriculture Western Australia)				4,200	6,900	4,900
Attend Beef Improvement Association Biennial National Conference (Agriculture Western Australia)				1,650		

**Table continued ...**

	1990/91 \$	1991/92 \$	1992/93 \$	1993/94 \$	1994/95 \$	1995/96
Beef farm evaluation in Southern Agricultural Region (Agriculture Western Australia)				2,800	1,000	
Botulism vaccination in Southern Pastoral Regions (Agriculture Western Australia)				2,000		
Assessment of meat quality of Kimberley cattle raised under a range of production systems (Agriculture Western Australia)				6,880	6,880	
Development and demonstration of production systems to produce table quality beef year round from irrigated leucaena (Agriculture Western Australia)				1,820	2,800	
Sponsorship of an invited speaker to the Biennial Conference of the Australian Society of Animal Production				2,150		
Productivity booster field days and workshops for the Kimberley pastoral industry (Agriculture Western Australia)				6,370	4,190	3,950
Improvement of a serological test for the detection of liver fluke (Agriculture Western Australia)					6,500	8,900
Focus farms for profitable beef production (Agriculture Western Australia)					12,275	7,400
Development of systems for spring calving on tagasaste (Agriculture Western Australia)					8,200	6,700
Mineral status of cattle grazing tagasaste (University of Western Australia)						7,899
Extension of the Hide Improvement Program (Agriculture Western Australia)						7,000
Meeting expenses				1,000	1,000	1,000
<b>Total</b>	<b>64,621</b>	<b>36,040</b>	<b>35,370</b>	<b>43,610</b>	<b>50,745</b>	<b>48,749</b>



## **BOOSTING PRODUCTIVITY IN THE KIMBERLEY PASTORAL INDUSTRY**

This project is designed to improve the flow of information to station managers through field days and workshops:

- by involving industry leaders in planning appropriate program topics;
- by importing experts from time to time;
- by using Department personnel to present topics;
- by documenting the information presented for later reference.

The project is a cooperative venture between the Kimberley Beef Industry Development Team (KBIDT) under the Chairmanship of Jay Simms, and Agriculture Western Australia staff at Derby and Kununurra.

The KBIDT develops a list of topics for field days which is sent to each of the four Land Conservation District Committees to select topics relevant to their area and management system.

The field days or workshops are then planned in liaison with Department advisers and key industry members to ensure that they are relevant, and credibility is established by using experts in the field and up-to-date information.

There is a strong emphasis on professionalism in the presentations, with hands-on experience where possible. The information is preserved in the form of Farmnotes.

The impact of the project will be assessed from a comparison of the performance of participating stations with those not taking part in the production booster field days.

Topics that have been completed, or planned for this financial year include:

- dehorning of cattle to reduce bruising in cattle during transport;
- buying better bulls;
- objective culling and spaying of breeding stock;
- supplementing weaners;
- bull evaluation.

This year a three-day field program is planned to provide information on efficient and productive station management, to help Kimberley managers cash in on the lucrative live export market.

CICF funding for the project has been the catalyst for productivity booster field days and workshops which are bringing benefits to the whole Kimberley cattle industry.

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## MEAT QUALITY OF KIMBERLEY CATTLE

This is another project initiated by the Kimberley Beef Industry Development Team. It was intended to survey the quality of beef slaughtered in Broome and Kununurra, and to relate this to different production systems used in the Kimberley area.

The experiment involved measurements of quality including shear force and taste panel assessment of tenderness and taste, in carcasses covering the full range available in age, sex, weight and fat cover. The aim was to include animals from a number of different properties with different environmental conditions, management systems and breed types, and to try to identify those components of production which lead to carcasses meeting the quality requirements of the higher-priced markets.

Unfortunately technical difficulties at the Broome abattoir in 1993 and its subsequent closure in 1994 severely restricted the number of animals which could be surveyed, and limited the post-slaughter procedures which could be imposed. Nevertheless 137 animals were sampled. Although there were no differences of any importance between different stations, young animals raised on irrigated Leucaena produced meat of quality equal to that of young animals raised in the South-West of Western Australia.

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## **QUALITY BEEF YEAR ROUND FROM IRRIGATED LEUCAENA**

Following the successful development of Leucaena as an irrigated crop for finishing beef from the Kimberley pastoral region, this program was intended to develop and evaluate a system for allowing consistent turnoff of table quality beef all year round.

A 'leader/follower' system was investigated, using maize, hay or a combination of these as supplements for the followers. The follower group is used to maintain a consistent stocking rate on leucaena by moving up the heaviest animals from each group as the top animals in each leader group are shifted to the finishing paddock, to replace those selected each fortnight for slaughter by the cooperating farmers.

The finishing group were stocked at 4/ha on 4.5 m row spacings and rotated around the four paddocks on a weekly basis. This system worked well and the projected turnoff was maintained over the 11 months of the trial. All the animals turned off were 370-420 kg liveweight, 0-teeth, had a fat score of 5-12 at the P8 site, and were well suited to the local market.

After slaughter the carcasses were electrically stimulated, chilled and sent to cooperating butchers who aged and then sold the meat. At this point samples of striploin and topside were frozen and sent to Perth for meat quality evaluation, together with samples from carcasses supplied to these butchers from the South-West. The butchers were asked to assess the quality of each lot of beef they received and to obtain consumer response to the locally finished and southern beef.

The shear force assessments showed that the leucaena-fed beef was as tender as southern beef and acceptable as table quality.

More than 1000 consumers participated in blind taste tests of the beef from the two sources. While there was little difference in flavour or juiciness, a majority of consumers found the leucaena-fed beef more tender and consequently preferred it to the southern beef.

With these results now accepted by butchers, the future of leucaena-finished beef from the Kimberley seems assured.

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## **SPONSORSHIP OF THE ROYAL SHOW MEAT HALL**

Each year the meat industry is promoted at the Royal Show, as specialist retail butchers demonstrate methods of preparing beef, port, veal and capretto.

A competition for the best sausage produced in the State, tastings of beef, pork and lamb, displays of manufactured smallgoods, and cooking demonstrations were all appreciated by the 40-45,000 people who visited the pavilion.

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## PREDICTING BEEF TENDERNESS FROM ENZYME SYSTEMS

Undoubtedly the most important component of the eating quality of meat is tenderness. While a number of techniques for improving tenderness have been developed, there is still a lot of variation which cannot be accounted for.

Meat from *Bos indicus* cattle is often considered to be less tender than meat from *Bos taurus*, and young Brahman cattle from pastoral areas fattened in feedlots have been almost unsaleable. Recent research in the USA suggests that differences in the enzyme systems in muscle which bring about the post-mortem tenderising of beef with ageing, may be responsible.

This project set out to compare the enzyme systems in Brahman and British breed cattle in Western Australia, and if possible to relate any differences to differences in tenderness between the breeds.

The effect of ageing was less in the British breeds than in the Brahmans, but there was no relationship between enzyme activity and tenderness, and therefore no explanation for breed difference in tenderness. Furthermore post-slaughter ageing was much more important than was breed type in determining tenderness.

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## FOCUS FARMS FOR PROFITABLE BEEF PRODUCTION

In order to demonstrate and extend profitable beef management practices, including improved grazing management techniques, five focus farms have been chosen in the South-West. Four were chosen as typical district properties but with lower than average gross margins/ha, and one as a recognised industry leader to establish benchmarks for the project. The Beef Farm program for assessing physical and financial performance is used to monitor the effect on profitability of changes to management practices, brought about by the critical evaluation and recommendations of local beef discussion group members.

Pasture monitoring of three paddocks on each property is used to demonstrate the potential for improved pasture utilisation from better management, and monitoring of cattle performance is carried out to demonstrate improved herd performance.

Extension of the improved practices has been assured by active involvement of beef discussion group members in the decisions to change management.

Although difficulties in assessing pasture production on one property with steep country has delayed the results for that farm, assessment of the present status of the others has resulted in many management changes being implemented or planned for individual properties in 1995. These include:

- sub-division to increase pasture utilisation;
- soil-testing to improve fertiliser practices;
- inclusion of pasture topping in reseeding programs to control weeds and improve;
- pasture establishment in Autumn;
- controlled grazing to reduce hay feeding in winter;
- a more flexible approaches to fodder conservation to improve quality of conserved feed;
- altering calving dates to suit pasture availability;
- culling empty cows to reduce summer feeding costs;
- use of Serving Capacity Tests to select better bulls;
- improved heifer replacement selection by using Weight Ratios to the cull least productive cows.

Benefits of the project include the interaction with local veterinarians involved in pregnancy testing and bull soundness examinations, spreading results through field days, and rural press features.

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## THE GENETIC BASIS OF GROWTH IN HEREFORD AND MULTIBREED CATTLE

New techniques in molecular biology allow the direct identification of genes which determine genetic traits in animals. If these genes have a large effect on production, or are associated with other genes which do, then selecting for them becomes a means of rapidly improving livestock for that character.

Furthermore the response to selection can be more rapid in breeds with greater genetic variation, and this may be true for multibreed animals.

In this project the multibreed and Hereford cattle from the Wokalup herds were compared for the extent of variation in the gene which controls growth hormone, a hormone known to influence growth rate, milk production and body composition, and to search for an association between different forms of this gene and growth pre-weaning.

Although the variability in the growth hormone gene was greater in the multibreed than Hereford cattle, there was no difference between them in their rate of response to selection and so these differences may have little significance for cattle breeding. However an association between these genes and pre-weaning growth, possibly through improved milk production, suggests that these genes may provide a marker for animals with genetically superior growth traits.

The completion of this project has assisted the researchers to obtain joint funding from the Australian and Indonesian Governments for a project to develop simple, effective genetic markers for identifying superior breeding stock in cattle.

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## **BEEF IMPROVEMENT ASSOCIATION BIENNIAL CONFERENCE**

Southern Beef Extension Coordinator Ross Fenwick was helped by the Fund to attend the BREEDPLAN Expo and Beef Improvement Association Conference in Armidale NSW last year.

More than 150 cattle breeders, consultants and extension officers attended the Expo to hear of new national and international developments in BREEDPLAN, details of the program for the Cooperative Research Centre for Meat Quality, and to discuss the incorporation of BREEDPLAN into extension programs.

The Third Biennial Beef Improvement Association conference was attended by 250 beef producers and extension officers 'In Search of an Optimum'.

A secondary theme was improving efficiency, and this has stimulated the establishment of a small feed efficiency trial at Vasse using yearling bulls from the herd of a Western Australian producer who attended the Conference.

This 'seed money' enabled the funding of further support which allowed another three Agriculture Western Australian Extension Officers - John Lucey, Bevan Kingdon and Brad McCormick - to attend the Conference.

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## **BEEF FARM EVALUATION IN THE SOUTHERN AGRICULTURAL REGION**

Beef Farm is a joint project in the South-West of the Western Australian Branch of the Beef Improvement Association and Agriculture Western Australia. It is funded by the Meat Research Corporation and coordinated by Ross Fenwick. Support from the CICF has been used to extend the program into the Southern Agricultural Regions through BIA discussion groups.

Participating beef farmers complete questionnaires in which they outline their management procedures and outcomes. The results are collated to allow comparisons which determine both the most profitable management options and those which have the greatest effect on profitability. These results are presented and discussed with other group members, local advisers and economists.

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## **EVALUATION OF DUAL ENERGY X-RAY TECHNOLOGY FOR THE DIAGNOSIS OF PHOSPHORUS IN CATTLE**

Phosphorus deficiency is common in cattle in the northern areas of Australia and the cost of supplementing breeding cattle in the north of Western Australia alone is about \$6 million a year. This cost could be markedly reduced by improving the accuracy of diagnosing a deficiency and thus predicting when supplementation will have economic benefits.

The major store of phosphorus is in bone and this reserve is depleted when the intake of phosphorus is less than required. This probably decreases the bone mineral density (BMD) which is therefore used as an indicator of phosphorus status. Measurement of BMD by Dual Energy X-Ray Absorption is a new technology used in humans to monitor osteoporosis because it is non-invasive.

Officers of the Cattle Industries Branch of Agriculture Western Australia, in collaboration with members of the Department of Medicine at QEII Medical Centre have applied this technology to phosphorus deficiency in cattle. Tails from cattle turned off stations in the Kimberley and Pilbara were collected from abattoirs and analysed for BMD as well as phosphorus content by chemical methods.

There was a close relationship between BMD and the phosphorus content of tail bones which suggests that the technique could be valuable in monitoring phosphorus deficiency.

This project has now been taken up by the Meat Research Council in a national, collaborative research program, to conduct a survey of BMD levels in breeding cattle across the north of Australia. Information on age, sex, breed, carcass weight and stage of lactation will allow productive relationships to be developed, and compared between supplemented and unsupplemented herds.

This is another case where initial funding by the CICF has assisted in the capture of national funds for a major research program.

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## SPONSORSHIP OF THE ASAP BIENNIAL CONFERENCE

The Australian Society of Animal Production (ASAP) brings together farmers and scientists throughout Australia who share an interest in improving animal production.

In 1994 the Society's biennial conference was based in Perth with segments at Kojonup and Busselton.

With funds provided by the CICF, the Society was able to bring in Professor Keith Entwistle from the University of New England. Keith is undoubtedly one of the best known cattle researchers in Australia, particularly as coordinator of the Meat Research Corporation's north-Australia program. Although specialising in male and female reproduction in cattle, he has maintained wide interests in all aspects of cattle production, particularly the practical problems of the industry.

At the Conference he delivered a special lecture on the topic 'Whither the beef industry and its research and educational components' in which he considered the present state of beef research and its future directions, and the need for increased support for tertiary education. He also took part in the Busselton segment of the program where his participation was particularly appreciated by producers.

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## REDUCING DARK CUTTING MEAT

Dark-cutting beef is a major problem in Australia, estimated to cost the industry around \$30 million each year. In Western Australia it has been particularly associated with feed-lotting and occasionally feeding of silage, but it is possible that transport conditions may also be involved.

The problem occurs when the pH (an inverse measure of acidity) is high in muscle and this is largely controlled by the amount of glycogen in the tissues at slaughter. High levels of glycogen lead to increased lactic acid and therefore low pH, which prevents muscle darkening, improves the taste and reduces the likelihood of microbial spoilage.

Nutrition alone has little effect on the glycogen level at slaughter but if glycogen metabolism is switched on regularly, during exercise for example, the need for replenishing glycogen increases dramatically. In most species physical exercise will increase the level of glycogen in muscle and this can be more important than improved nutrition in cattle, while the combined effect is greater still. Of course developing a physical training regime for cattle presents a major challenge but according to the group of scientists involved it is worth investigating.

Recent work at Murdoch University sponsored by the Meat Research Corporation has resulted in the development of a rapid technique for determining muscle pH after slaughter. This not only allows on-the-spot determination of meat quality, particularly as it is influenced by pH, but as a research tool the technique enables the study of factors which affect pH.

In the study funded by the CICF, two aims were attempted:

- To study the effect of transport and other pre-slaughter procedures on glycogen content of muscle in finished steers.
- To test the effects of exercise and nutrition on glycogen content of muscle in sheep.

To perform the first study, groups of cattle from two Esperance properties were sampled on farm and at the abattoir after different times of transport. Other groups from Vasse and Mt Barker Research Stations were submitted to different periods of lairage and different diets, and housed individually or in groups.

From these comparisons a number of effects could be inferred. Transportation stress was evident in the 'fast white' muscle group which produce low quality cuts such as silverside. However in the 'fast red' muscles which produce high quality cuts such as fillet, porterhouse and topside steak, there was no effect of transport, or time spent in lairage.

Other lessons learned from this study were the dangers of mixing unfamiliar animals which produced severe depletion of glycogen, and the poor glycogen status of steers grazing pasture compared to those from feedlots.

In the second study both regular exercise and improved nutrition increased the content of residual glycogen. The significance of these results is that glycogen metabolism in ruminants can be manipulated to improve meat quality. This has been recognised by the Meat Research Corporation which has agreed to provide funding to continue this project.

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## **A SIMPLE TEST FOR DETECTING LIVER FLUKE IN CATTLE**

The introduction of liver fluke infection in Western Australia is a serious threat to the cattle industry as it could cause enormous losses. Because the fluke can spread rapidly through snails, early detection and eradication is very important.

The standard blood test for liver fluke was developed in NSW but veterinary pathologists from the Agriculture Western Australia have modified the test in an attempt to improve the accuracy of detection by reducing the number of false positions.

However the modified test also produced a higher number of false negatives. Further analysis will be carried out to see whether this may be reduced by setting a different cut-off point.

The large number of blood samples collected in this study, both positive and negative for liver fluke, will now be used to develop a simple and cheap field test that can be read by the naked eye.

This would allow the rapid and cheap testing of single animals or herds by regional laboratories or in the field, to assure freedom of liver fluke infection in Western Australia.

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## DETECTION OF BOTULISM IN CATTLE

Botulism has been thought to be a cause of death in cattle in north-western Australia since 1982. However diagnosis is difficult and is often made on clinical findings, a history of carcass chewing, and exclusion of other causes of death.

Scientists from Agriculture Western Australia however, have now developed an enzyme assay for detecting the toxins which cause this disease. It is less sensitive than the common mouse toxicity tests but avoids the necessity for subjecting test animals to diagnostic procedures.

The test was first evaluated on blood samples from about 300 adult beef and dairy cattle in areas with no history or evidence of botulism in animals or water birds. Less than two per cent of these animals tested positive and although no follow up study was possible, these are presumed false positives. It was also tested on blood samples from 41 herds that included herds vaccinated against botulism, herds and confirmed botulism cases, and herds from areas where the disease is considered to be endemic. The test was successful in detecting antibodies to toxins in samples from vaccinated cattle and both convalescent and clinically normal animals from unvaccinated herds with outbreaks of botulism. It was also found in unvaccinated animals from herds in which there had been no diagnosed cases in areas where botulism was considered endemic.

This supports veterinary advice recommending botulism vaccination in the Kimberley region where most of these herds exist. In the north-west where outbreaks of botulism are reported sporadically, the number of positive animals responding to the test in unvaccinated cattle was considerably lower than in the Kimberley.

There are two useful outcomes from this work. Where the test has indicated significant endemic exposure to cattle to toxins, this result may be useful for veterinarians in advising graziers on botulism vaccination. Secondly, by showing significant differences in test results between sick and healthy animals after botulism outbreaks in areas where the disease is not considered endemic, it is an important aid to diagnosis.

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## ESTIMATING CARCASE COMPOSITION FROM MEASUREMENTS ON LIVE CATTLE

In beef the desirable level of fat varies widely between markets, and so too does the fat content of live animals of different breeds and types. Therefore to produce cattle for a specific market the right types must be carefully selected by estimating carcase composition from live animal measurements.

There is a general relationship between liveweight and fat content within breed types defined by breed, age and sex, but this can be refined by using ultrasonic measurements of fat thickness.

In this program a number of different breed groups are being evaluated for the relationship between carcase fat content and live animal measurements, across a range of growth patterns achieved through a range of feeding treatments.

For each breed type, animals from individual feeding treatments were slaughtered in groups of six to eight at monthly intervals. Several indicators of carcase fat content were compared when measured directly and by ultrasonic methods.

Results have been obtained so far for Hereford x Simmental and Angus groups, while results for pure Brahmans and crosses or late maturing Limousin and Blonde d'Aquitaine with early maturing Angus and Herefords will be included in the future.

Individually most of the live animal measurements were poorly related to carcase composition. However a combination of liveweight, age, sex and breed type account for 53 per cent of the variation in carcase fat thickness for Hereford x Simmentals and 68 per cent for Angus cattle.

Adding a calculated 'maturity index' which recognises the variation of an individual animal from the average for its type, improves these relationships to the extent of being able to estimate fat thickness within 3 mm of the actual.

These results demonstrate that a reasonable estimate of composition can be made from simple measurements or factors which can easily be known about an animal. Furthermore they allow calculation of additional liveweight required to produce a carcase with a specified increase in fat thickness.

By predicting the maturity type of individual animals, producers have the capacity to choose from both within and between breeds, the particular types of animal suited to target markets. In the long term they can select the types of animals most suited to particular markets.

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## **'SIROMIN' FOR WEANERS ON SUMMER GRAZING**

'Siromin' is a mineral mix developed by CSIRO scientists, especially for animals grazing pastures in Western Australia.

When supplied to weaners grazing summer and autumn pastures, it should lead to increased liveweight by increasing the animals' feed intake. Two studies were carried out to verify this hypothesis; in the first heifers grazing pasture in the Esperance Region and supplemented with the Siromin mineral mix were heavier and leaner than unsupplemented heifers, and this effect carried out into late winter. However this response did not come about through increased voluntary feed intake.

In the second study heifers were fed 'summer' and 'autumn' diets indoors and had higher feed intakes on the 'autumn' diet when supplemented with Siromin.

Although the results for feed intake were inconsistent and so gave only limited support to the original proposition, the improved weight gain and change to leaner carcasses suggests an important role for Siromin in cattle production.

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## **RESEARCH ADVISORY COMMITTEE REVIEW**

In 1992 the Cattle Industry Compensation Fund (CICF) Research Advisory Committee initiated a review of the Fund and the role of the Committee in funding research, development and extension.

The Committee received a risk assessment report from Agriculture Western Australia, Veterinary Services Branch and submissions from individuals and organisations involved in research, development and promotion in support of the cattle industry.

Recommendations were developed for Ministerial endorsement to define the role of the Committee for the period 1993-1997.

The recommendations were based on the following findings:

- Resources in the fund will be reduced due to the heavy demand for compensation in the final stages of the Brucellosis and Tuberculosis Campaign.
- The forecast level of resources in the Fund is dependent upon national funding arrangements for the Brucellosis and Tuberculosis Eradication Campaign after the expiry of the Commonwealth-State agreement and cost sharing in 1997.
- There is an ongoing need for special purpose funds for:
  1. disease surveillance and risk assessment;
  2. pilot projects and preliminary studies ahead of submissions to the Meat Research Corporation and the Dairy Research and Development Corporation;
  3. research of specific relevance to Western Australia;
  4. technology transfer - manuals/group activities;
  5. conferences/study tours/visiting experts.

### **Recommendations**

1. The Committee recommend continued project funding from the Cattle Industry Compensation Fund.
2. We recommend average annual project expenditure of around \$50,000 for the period 1993/94-1996/97 inclusive.
3. We recommend a review of the level of CICF special projects funding immediately after the decision on the future of the Commonwealth-State cost sharing for BTEC (1996).
4. We recommend the adoption of the following guidelines for CICF, special projects funding:
  - Funds to be allocated to priority projects based on an annual round of submissions from cattle industry research, extension and promotion organisations.
  - Essential criteria are that projects are of potential benefit to the cattle industry and that CICF is not substituting for national levy funds.
  - Priority is to be given to disease surveillance and risk assessment work and to preliminary studies ahead of submissions to the Meat Research Corporation and the Dairy Research and Development Corporation.

5. We recommend that the Research Advisory Committee structure be unchanged with representation from Agriculture Western Australia, Western Australian Farmers' Federation and Pastoralists' and Graziers' Association and an ex officio technical expert.
6. We recommend that the Research Advisory Committee improve the level of feedback from the Cattle Industry Compensation Fund to the Beef and Dairy Liaison committees and to Western Australian cattle producers.

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