Pastures for prosperity

Statement of issues related to tropical pastures

The following is derived from syndicated group discussion of theme topics, and from further discussion amongst the 78 persons who participated in the Action Workshop on the final day of the Conference.

The issues identified were considered to warrant attention, but the order of presentation does not indicate priorities.

Pasture issues

1. Inadequacy of pasture technologies to provide real support for commercial-scale decisions on the management of native pastures.

   Improved support is needed in such areas as:
   - monitoring the condition of extensive vegetation mosaics;
   - positive management for predictable outcomes in terms of botanical composition, livestock responses and economics;
   - predicting management impacts on aquifers, stream flow and sedimentation;
   - providing appropriate management for domestic, native and feral animals; and
   - integrating management systems at the enterprise level.
2. Irrationality concerning the future for utilisation of new or genetically enhanced pasture species:
   - conflicts in perceptions of the boundaries between weediness and weed invasion. Resolution is required for:
     — definition of environmental weeds;
     — definition of geographical areas which warrant protection; and
     — whether colonisation, regeneration and weediness can be differential characteristics of a species?
   - lack of data on the direct and indirect benefits to industry and the wider economy; and the external costs on the environment and biodiversity of the impacts of pasture plants — past and future.
   - need for effective application of pasture expertise in Commonwealth and State Government processes for resource protection, and community education on the issues.
3. Lack of unity between production and conservation perspectives in all sectors of pasture-based industries, their professional support systems and the wider community.

   Attention should be directed at:
   - collaborative research between production and conservation interests to document impacts and develop solutions;
   - the formal education system and knowledge communication generally; and
   - direct negotiations between production and conservation interests.
4. Ecological consequences of increasing the digestibility of native pasture.

   Two particular strategies, viz. legume augmentation and manipulation of rumen physiology, will have distinct effects and warrant separate consideration.
5. Specific attributes in sown pasture plants that are deserving of expanded R, D and E effort. Examples include:
   - abundant seed production and ease/reliability of establishment to reduce costs of establishment;
   - leguminous fodder trees;
   - regenerative ability;
   - nutritive value;
   - adaptations to niche environments such as clay soils, under 500 mm annual rainfall;
   - resilience under grazing pressure;
   - growth with trees;
   - erosion protection and reclamation; and
   - durable disease resistances and pest tolerances.

(The Workshop noted the linkages between several desired attributes and potential weediness).

6. Inability of pastures alone to achieve the full range of product qualities required by current and emerging markets.
7. The reduction of funding by governments and industry sources for research, development and extension related to sown tropical pastures.

   (The workshop agreed that this issue required authentication and focus before there should be further action.)
8. Probable inefficiency in pasture R&D for the tropical dairy industry associated with geographic dispersion, diverse environments and relatively small size of tropical dairy production areas.
9. Sub-optimal efficiency of approaches to new plant and cultivar evaluation.

   In particular, it was considered that:
   - evaluative methodologies could be developed to emphasise speed and economy;
   - methodologies should have more power to extrapolate performance prediction to diverse environments and to define roles in production systems;
   - management requirements of cultivars should be resolved earlier in the evaluation process; and
   - data on feeding values *vis-a-vis* product quality should be generated earlier.
10. Unexpected undesirable outcomes in native pastures from inadequate consideration of the impact of component technologies in long-term systems contexts.
11. Woody and herbaceous weed invasion of pastures and the need to distinguish between invasions promoted by prior mismanagement of native pastures and those due to aggressive weediness of invading species.
12. Deficiencies in the marketing of tropical pasture seeds.

    These included:
    - recurrent problems in matching seed supply with demand, indicating better coordination needs in the seed production–pasture seed purchaser chain;
    - need for quality assurance for domestic and export markets;
    - enhanced technical support for seed sales in the context of the animal production enterprise; and
    - strengthening technical support for seed production.

Beef-specific issues

1. How to produce beef to quality specification in variable environments, and how the market can be organised to optimise returns to producers given that the product quality of their output must vary.
2. Lack of good field indicators and of objective measures for beef cattle performance and for gauging dietary needs in support of both short-term dietary management and long-term genetic improvement of livestock.
3. Distinctions (positive and negative) between pasture-finished and lot-finished beef:
   - price differentials exist for meats of equivalent qualities;
   - the uncertainty of prices paid for slaughter cattle militates against expenditure on improved feeding systems;
   - meat quality ex pasture systems is unreliable at the consumer's plate; and
   - novel qualities need market generation and promotion.
4. Strategies for pasture R&D and commercial pasture development should be generated in anticipation of increased live cattle trade.
5. Fragmentation and inadequate representation of the beef industry in matters pertaining to policies impacting on the industry.
6. The cost inefficiency of Australian meat processing.
7. Lack of practical technology for commercial multiple-sire breeding systems to enable selection of sires on objective progeny performance criteria.
8. Inadequate interaction between meat processors–producers–researchers in the cycle of identifying market needs → undertaking R&D programs → reviewing impact of new technology.

Dairy-specific issues

1. High unit costs of production for the tropical dairy industry are impediments to sustained market access and to competitiveness in expanding markets.

Three second-order issues were seen to be involved, viz.:

- inadequate techniques for evaluating the profitability of management options and for isolating the economic impact of components of production systems;
- suboptimal economies of scale in feed and labour costs; and
- high unit cost production technology.

In relation to this issue, the following emphases were identified:

- defining the limitations of pasture as the nutritional base for cows with very high genetic potential;
- a continuing need for high producing legumes tolerant of high grazing pressures;
- increased effort to enhance digestible organic matter in forage species and in the aggregate diet from integrated feeding systems; and
- focus on efficiency of forage utilisation in terms of the end product.

2. Undesirable environmental impacts of the tropical dairy industry.

The case is for pro-activity in research to identify impacts and to develop solutions where necessary. This should extend to obtaining community awareness of the factual situation.

General issues

1. Suboptimal interaction between plant and animal perspectives, whether the interaction is between researchers, or extension operatives and consultants, or producers.
2. The breadth of integrated professional skills required to support the multiple economic, ecological and social objectives of land use.
3. Low rates of technology adoption.

   Action could be directed at:
   - improving the technological base in areas such as better guidelines for practical management and earlier, more robust knowledge of species ecology;
   - analysing causes of low and high adoption rates;
   - greater involvement of industry practitioners in R, D and E strategies and operations;
   - facilitating the role of women in technology adoption; and
   - practical utilisation of the information super highway.
4. Sustainability cannot be achieved on some properties either by adoption of current technology or by foreseeable technological advance, due to suboptimal property sizes.

   Adjustments in property sizes in such cases are an essential first step towards sustainability.

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