Grains Research and
Development Corporation
Professor Emeritus J V Lovett
MANAGING DIRECTOR
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Increasing value-adding to Australia's raw materials

Thank you for affording the Grains Research and Development Corporation (GRDC) the opportunity to make a submission to your inquiry.

The GRDC is aware of the importance of value-adding within the Australian grains industry and addresses this potential through its four Investment Objectives.

I look forward to learning of the recommendations of the standing committee. If further information is required in respect to any of the issues raised in the GRDC's submission I shall be happy to respond.

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BACKGROUND

The Grains R&D Corporation (GRDC) is a statutory corporation funded by a levy on graingrowers, which is matched by the Commonwealth Government. There are, at present, 25 leviable crops spanning temperate and tropical cereals, oilseeds and pulses. The GRDC has a mandate to plan, develop and oversee its R&D investment in the $6 billion industry which embraces these crops. Its charter is to invest the funding contributions of grain producers and government in grains industry research. This is achieved through:

- agreement by grain producers to levy their output in order to provide funds for research into industry issues, and

- agreement by the Commonwealth Government to match half of the research expenditure up to a maximum of 0.5 per cent of the gross value of production (GYP), provided the Commonwealth contribution does not exceed grower levies.

GRDC VALUE ADDING POLICIES

Domestic and international grain markets are highly competitive. It would be unrealistic to expect to develop the industry's competitiveness and ensure its long term viability in more than a few areas without considering each of the industry's component sectors. Opportunities for investment may be identified at any stage from on-farm production through to the end user. Maximising the benefits from the Corporation's investment in research requires examination of investment possibilities at all stages in this chain from supply to retail - all adding value by making the grain products the industry sells more attractive to its customers. By modifying an existing product, or creating a new one, it is possible to better satisfy consumer demand. Consumers should be willing to pay for this in terms of a higher price.

There are many ways to potentially add value to grain products. At its simplest level, this may involve a change in management practices, such as the improved handling of grains to avoid contamination. It may

involve additional processing to improve the value of a product to the final consumer, or better marketing to achieve a more timely delivery of product, or better packaging. At its most complex level it may need to embody new technology and result in a new product previously unavailable to consumers. In all cases, the additional value adding will involve additional costs (even if it is just more time and effort) and these additional costs must be recovered if the venture is to be profitable.

INVESTMENT IN VALUE-ADDING TO RAW MATERIALS BY THE GRDC

Wheat processing research

By world standards Australia is a relatively small producer of grain. For example, the major cereal crops, wheat and barley, account for around 3 percent and 2 percent, respectively, of annual world production. The Australian grains industry is, however, a major exporter. Around 80 percent of its wheat crop are sold on international markets.

Australian wheat has gained an excellent reputation in many overseas markets. The cleanliness, dryness and white grain colour of Australian wheat is especially valued by customers. However, these basic physical aspects of wheat quality are not the only criteria important to end-users.

Flour milling is the primary processing step for over 80 percent of wheat. Millers, for economic operation, require high yields of bright flour of low ash content. Therefore, the milling performance of wheat varieties / grades is vitally important. The processing quality of Australian wheat flour is also very important to bakers of the various bread types and to noodle manufacturers. Factors influencing milling and processing quality are:

protein content (mostly a seasonal and farm management issue); grain hardness (related to the wheat variety); milling extraction (related to the wheat variety), and dough properties (related to the wheat variety).

In the next 5 years these quality parameters will become of greater importance in the international competition for wheat sales. Already, most major markets demand wheat of greater than 10 percent protein. To remain competitive, food companies will, increasingly, source their inputs on a global scale. In particular, they will be keen to source commercial parcels of wheat which exhibit the quality characteristics required to produce flours to satisfy the very precise needs of their customers.

For Australia to compete, it will require a knowledge of optimum grain quality parameters for end-products and a detailed understanding of the processing technologies used for converting the grain. For example, an area where GRDC resources have been targeted is in the noodle wheat market. Determining the specific quality requirements of each of the various types of noodles, for example dry, wet, instant and fresh (long-life), will enable varieties to be produced which are most suited to particular noodle products.

Processing research in other areas of the GRDC portfolio

The GRDC has four Investment Objectives (IO) which address priorities of the grains industry and Government. These are summarised, below, and the value-adding components highlighted.

IO1: **Meeting Quality Requirements**

The programs within this objective are key elements to adding value to Australia's grain harvest. The GRDC's investment in IO1 in 1999-2000 is budgeted at $29 million or approximately 28 per cent of its annual expenditure budget, with a focus on:

- improving measurements of quality that are used to define and/or predict the processing characteristics of wheat for different end uses;
- tailoring wheat and barley varieties to the increasingly precise needs of discriminating buyers with a research focus on instant noodles for the Asian market and malting barley for Japanese brewers;
- defining the quality parameters for pulses and oilseeds, and
- grain storage, treatment and harvest strategies to meet market demand and safety requirements.

IO2: Increasing Productivity

The theme of this Investment Objective is increasing the production of Australian grains. Technologies and intellectual property developed by research programs within IO2 may be applied to other research areas, including those in IO1. The GRDC's investment in IO2 in 1999-2000 is budgeted at $27 million or approximately 26 per cent of its annual expenditure budget, with a focus on:

providing new sources of genes for quality, disease resistance or other traits to plant breeders through genetic engineering;
delivering high yielding, profitable grain varieties that are well adapted to a range of soil types, environments and farming systems, and
cost-effective disease, weeds and pest management programs.

IO3: Protecting and Enhancing the Environment

The theme of this Investment Objective is maintaining and increasing the value of Australia's natural resources. The GRDC's investment in IO3 in 1999-2000 is budgeted at $24 million or approximately 23 per cent of its annual expenditure budget, with a focus on:

- farming systems which utilise water more efficiently in order to reduce dryland salinisation and soil acidification;
- higher performance pasture cultivars to reduce groundwater recharge, and
- improving the chemical and biological fertility of soil by building organic matter.

IO4: Delivering Outcomes

This Investment Objective was designed to improve the extension of research results with a view to improving the skills base of farmers, scientists and others in the grains industry. The GRDC's investment in IO4 in 1999-2000 is budgeted at $4.6 million or approximately 4 percent of its annual expenditure budget, with a focus on:

- packaging information from the outputs of GRDC initiated research, while assuring its target -audience, and
- developing delivery networks in a way that best satisfies the needs of the GRDC's target audiences.

QUALITY ASSURANCE

The GRDC is acutely aware that the standing of the Australian grains industry is inextricably linked with its reputation as a supplier of quality grains. Hence, the emphasis placed on Meeting Quality Requirements, in IO1.

To further a culture of industry commitment to quality the GRDC is supporting the Grains Council of Australia in its endeavours to facilitate the development of an on-farm quality assurance program that will complement programs already in use downstream. Linking primary production with end user is fundamental

to the GRDC's view of the Australian agri-food industry in which quality and food safety are of paramount importance.