A summary of the problems facing agriculture in South Australia

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Introduction

Agriculture is an important part of the economy of South Australia, contributing \$939 million to the gross national product in 1979/80. Over the four-year period ending 1979/80, agriculture contributed a higher proportion of the combined value added from agriculture, mining and manufacturing than in any of the other States except Queensland. Agriculture also has a higher multiplier effect than some other major industries in South Australia, contributing approximately \$2.50 to the growth of the economy for every extra dollar of production, whereas, for example, only \$1.60 and \$1.95 have been estimated for an increase in coal production and petrochemical production respectively. To be able to maintain the value of agriculture to South Australia there is a need for agricultural research and extension to aid the continuing process of adjustment of agricultural production to changing economic conditions and market demands. The SA farming community is examining means of raising additional levies from growers for funding of research outside the existing Commonwealth-supported Rural Industry Research Funds.

Crops and Pastures

In the cereal-growing areas there has been a trend towards more intensive use of developed farming lands in South Australia. Currently some 22-25% of the land in the cereal-growing areas is cropped annually. It appears that the demand for wheat and coarse grains will increase in the medium term whereas that for livestock products will remain at current levels (1). It is expected in future that farmers will try to improve the profitability of their farms by increasing the area under crop at the expense of livestock enterprises. This is due to differentials between the present relative gross margins of these enterprises. In the Mid-North cereal/sheep zone of the State, for example, the gross margins are \$152/ha for cereal production and \$35/ha for sheep production. Farmers will also be looking for improved technology to help them increase the average yield of crops, reduce tillage costs and reduce weed, pest and disease incidence.

The shift in emphasis towards cereal production from livestock production has resulted in a number of problems in dryland farming systems in South Australia. Technology is becoming available to increase cereal production through the use of new varieties, new tillage techniques and closer rotations. However, the impact of these changes on the soil resource in terms of fertility, structure and stability is not altogether clear. At the same time field observations have shown that medic pasture leys have deteriorated owing to the recent appearance of new insect pests and changes in the management of pastures; e.g. lowered superphosphate applications, weed control and insect control and inadequate pasture seed reserves in the soil. It is necessary to detect and correct any deleterious effects these changes may have on our dryland farming systems to avoid permanent degradation of the basic resource.

The advantages to be gained from breeding cereal cultivars resistant to pests and diseases can be seen in the development of the new feed barley cultivar, Galleon, which is resistant to cereal cyst nematode (<u>Heterodera avenae</u>) and has a higher yield than any of the other varieties available. A resistant malting barley is now required otherwise, under the present pricing structure, there is a risk that the area planted to malting cultivars may fall below that required to fill existing export markets for malting barley.

In the high-rainfall areas of South Australia, cereal production has become an economic additional enterprise for sheep and cattle grazing properties. There is a need for cereal cultivars adapted to the South-east Region. Management strategies are required to incorporate grain production in a grazing system based on permanent pastures.

The role of the grain legumes in cropping rotations requires further investigation, particularly where continuous cropping is practised. A suitable grain legume is required for areas that have a rainfall below

450 mm. In South Australia emphasis has been placed on the breeding of new cultivars of field peas (<u>Pisum sativum</u>), which are used predominantly as a feed grain. Additional research is also required into the potential export markets for grain legumes for human consumption and the agronomy of other grain legume species.

The susceptibility of medic species to recently-introduced insect pests has necessitated a large programme for breeding new cultivars of annual medics and lucerne resistant to those insects. The pasture management techniques required for the re-establishment of medic pastures and lucerne stands in the presence of new insect pests needs additional investigation, particularly the re-establishment of lucerne stands in the non-wetting sands of the upper South-east of South Australia.

The recent spread of annual ryegrass (Lolium rigidum) toxicity has resulted in a requirement for a new short-term pasture management technique that farmers can adopt in already-infected pastures. A long term solution is also required which renders pastures safe for grazing livestock without the farmer having to be involved in expensive or labour-consuming methods of control.

In the high-rainfall pasture areas of South Australia the introduction of Trikkala, a low-oestrogen cultivar of <u>Trifolium subterraneum</u> subspecies <u>yannicum</u>, should reduce the problem of the high isoflavone content of pastures containing the cultivar Yarloop. Trikkala also has been shown to improve pasture production in the high-rainfall areas. Further advances may also be made by identifying clover species resistant to disease attack and adapted to the various soil types found in the high-rainfall areas.

The oilseed industry has the potential to increase production to satisfy the Australian demand for vegetable oils but there is a need to improve its competitiveness with the world market (1). In South Australia there is a need for more research on the varieties, agronomy and management of oilseed rape (Brassica napus and Brassica campestris) and sunflower (Helianthus annus) to improve the efficiency of production.

Horticulture

Horticultural industries in South Australia are being affected by the low demand and price for our horticultural products on the world market (1). There is at present a surplus of red wine grapes, apples, canning peaches and pears, and a potential for the oversupply of white wine grapes and general purpose grapes. There is, however, a continuing local demand for fresh citrus and for citrus juice. The present viability of the citrus industry is protected by a variable tariff on imported citrus juice. Consequently the major problem in the horticultural areas is one of continual adjustment and diversification into economic products and levels of production.

In South Australia there is an extensive irrigation area on the River Murray. There is a need to maintain the quantity and quality of water that can be obtained from the River Murray, both for irrigation and for urban communities, particularly Adelaide. Because of the urban and secondary industry demand for water, there is little potential for an increase in the area under irrigation and a need for research to be continued into improving the efficiency of water use on the areas already irrigated.

In the vegetable industry the major problems are associated with the necessity to match both quality of product and production levels to the requirements of the market. in South Australia the tomato industry is seeking improved marketing information and better varieties for both the local and interstate markets.

Variation in production from year to year because of seasonal differences often causes problems in the vegetable industries. This is particularly so in the potato industry where surpluses in a good year can be a serious problem.

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The apple, pear and cherry industries are at present suffering from tree losses caused by <u>Phytophthora</u> fungi. Rootstocks resistant to <u>Phytophthora</u> and improved varieties resistant to foliar and fruit diseases are required to reduce management costs and to improve the quality of fruit for the fresh fruit market.

There is frequently a need to adjust the area and type of horticultural crops grown on a property. Replanting an old orchard and vineyard land is often a problem because of poor soil structure and the presence of large populations of pests. There is a requirement for economic replant strategies with new rootstocks, varieties and management techniques that will ensure ease of reestablishment and a higher production.

Animal Industries

In South Australia the major problems in the animal industries are similar to those facing other States because of the heavy reliance on the world export markets. The dairy industry is at present providing good returns to farmers (1). Many South Australian milk farmers are geared to year-round production and thus have higher costs of production than those in other States. Consequently there is a need to reduce fodder costs and to increase production per cow through better feeding.

The present low returns from beef and sheep meat and the strong demand for live sheep for export are likely to continue. The long term outlook for wool on the world market is for the price to fall (1). Although there has been a trend to more intensive cropping and reduced cattle numbers there has not been an equivalent reduction in sheep numbers. There is a need to improve the efficiency of beef and sheep meat production from pasture to be able to maintain a competitive position with other meat-exporting countries.

The poultry and pig industries produce for the domestic market. Since feed costs make up approximately two-thirds of the total cost of intensive animal production, producers in these industries are seeking cheaper new feed crops such as triticale and legume grain.

Summary

In South Australia there is a movement towards more intensive cropping. This change in emphasis has led to a number of problems in soil and pasture management that need further investigation. The main problems in the horticultural industries are associated with surplus production in various commodities, resulting in the need for alternate crops and replanting strategies. The animal industries require improved feed sources such as pastures, forages and crops that will reduce costs and improve their competitive position on the world market.

References

1. Bureau of Agricultural Economics (1982). Situation Outlook, 1982. Australian Government Publishing Service: Canberra.