Developing new crops

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New crops can have important benefits at the level of farm, region and State. At farm level they increase the possibilities for diversification of production and the introduction of rotations to reduce the risks of insect, disease and weed problems. At regional level they offer the possibility of development of local processing industries. At State level there are the benefits of additional revenue and employment opportunities.

The term "new crop" is used in the context of a crop new to a particular area or region. The scope of new crops research can therefore range from the extension or adaptation of an existing crop to a new area to the development of a completely new crop to meet a specific need of industry or the community. It also embraces the development of new uses for current crops. An approach to the problem of selecting potential new crops for a specific area has been outlined by Wood et al.(1). Basically the approach proposes that potential new crops be assessed and selected for research on the basis of their adaptation to the environmental conditions of an area, their likely profitability and their market prospects.

There are considerable difficulties in establishing a new agricultural crop in an area and these rapidly escalate as the degree of industrial processing involved increases. Even where the agronomic adaptation has been clearly demonstrated and the economic and market prospects appear promising there are still formidable problems before the crop can become commercial. The whole system of production, processing, marketing and consumption has to be developed for that particular product and there are often problems in reconciling the various facets of the system. Growers will only be prepared to produce a product if they have an assured market, especially if additional or specialist equipment needs to be purchased. Those involved in marketing, on the other hand, will only be prepared to undertake the necessary sales promotion program if they can be assured of a continuity of supply. The processor requires both assured markets and raw material supplies. The reconciliation of all these requirements requires close coordination and cooperation between the various groups involved.

New crops offer exciting prospects for increasing agricultural productivity and meeting the needs of industry and the community. However, careful planning is necessary to select those crops with real potential and to develop an integrated program of research and development. The agricultural research program needs to be multidisciplinary and will generally involve agronomists, plant breeders, entomologists and pathologists for the field program. In addition, chemists and other technologists may be needed to assess the industrial merit of the crop or of particular varieties of that crop. Processors and those involved in marketing should be consulted at the planning stage of research programs to ensure that their needs and those of consumers are taken into account.

The ultimate success of new crops will depend on their level of profitability, but care in the selection of potential new crops and in the planning of research and development programs will facilitate their success.

1. Wood, I.M., Angus, J.F., and Wilson, A.G.L. 1974. CSIRO (Aust.) Div. Land Use Res. Tech. Paper No. 35.