

A GOVERNMENT PLANT BREEDERS VIEWPOINT

G. W. Butler,
Head Office,
DSIR,
Wellington

Last year in an address to this Society as part of the Symposium on the Acceptable Crop Cultivar Scheme in New Zealand, Dr J. M. McEwan of Crop Research Division stated:-

“The relationship of the activities of this section of plant breeders with the activities of government-funded breeding is, however, a matter that requires some examination. My concept of the situation would be that government funded research makes available to farmers a steady improvement of performance based on the release of new cultivars of a wide range of crop and herbage plants. This activity is funded by the tax payer for the benefit of the farmer and ultimately of the country as a whole. It in no way precludes the activity of the private sector which by particular success in certain crops can operate profitably and also make a significant contribution to agriculture.”

Dr McEwan also pointed out that “government-funded breeding is in a position to work on a wide spectrum of crop plants including many that would not justify the attentions of private companies and also to engage in long-term and speculative work with a low probability of profitable results. This would include the study of plant breeding methods and the generation and testing of new genetic variability which would ultimately be of value to breeders in both the public and private sectors. Enough of these lines of research are likely to prove profitable to offset the losses on unproductive projects.”

I have quoted these extracts because the future working relationships of private sector and government agencies for plant development need to be seen today in terms of overall objectives, in order that marketing procedures can be discussed in appropriate perspective.

It is DSIR's view that government and private sector plant improvement programmes can and should be complementary and, if possible, avoid duplication of expensive equipment and resources. At the present stage, the private sector is principally concerned with the operation of testing sites in New Zealand at which, by virtue of their links with various commercial and government plant breeding organisations overseas they are able to screen and evaluate and in some cases multiply various overseas-bred lines for re-export overseas and for possible commercial use in New Zealand. The amount of actual plant breeding carried out in the private sector is at present very small and obviously if the private sector is to build up strength to develop its

own programmes, the extent of plant breeding must be increased.

DSIR can assist this build-up in two ways:-

1. By assisting in the training of plant breeders, by giving them on-the-job post-graduate experience for short periods working with DSIR plant breeders, as opportunity allows.
2. By arranging collaborative plant breeding programmes with specific firms for products tailored to a specific market. The extent to which this can be done by DSIR will depend upon overall commitments. Where the genetic material originates from DSIR in part or in whole, DSIR would retain ownership of the cultivar but the firm concerned would have exclusive marketing rights. Looking to the future, one might anticipate that DSIR might produce a cultivar which is a major new concept in breeding, which would then be “fine-tuned” by the private sector for further adaptation to different regions.

There are two other ways in which DSIR can assist plant improvement in the private sector:-

1. By allowing the use of facilities such as the Climate Laboratory at Plant Physiology Division or specialist plant breeding facilities.
2. By allowing access to private plant breeders to the gene banks at Grasslands, Crop Research and Plant Diseases Divisions for specific breeding purposes. We see these as national collections available by specific request, subject to seed scarcity, quarantine matters or restrictions because of Plant Variety Rights.

I will refer specifically to the marketing of DSIR-bred cultivars in the remainder of my remarks, and would say first that we regard the situation as being distinctly different for pasture species, amenity grasses and crop plants respectively. Government research departments are not in a position to act as entrepreneurs or salesmen of their own cultivars. However, where cultivars have been developed to increase agricultural or horticultural production within New Zealand, adequate promotion and marketing of the products are necessary.

With regard to pasture species, White (1977) pointed out at these meetings last year that because of rapid advances in plant breeding in many countries “there is now strong and increasing competition for our exports of herbage seeds. In comparison with locally-bred cultivars New Zealand herbage types tend to lack winter hardiness and drought tolerance and are more susceptible to some diseases (Lancashire, 1975). In addition they are used mainly for

conservation in Europe whereas they are used in New Zealand for grazing. On the other hand, most overseas herbage cultivars are inferior to locally-bred types under New Zealand conditions. For example, Rumball and Armstrong (1974) found that in 2,359 seasonal comparisons of ryegrasses, virtually all of them favoured the New Zealand cultivars."

For these reasons, DSIR believes that locally-bred pasture species cultivars will continue to dominate local markets and that the present arrangements for marketing seed of the relatively small number of DSIR pasture cultivars where the seed is freely available to members of the New Zealand Agricultural Merchants' Federation is the most efficient for DSIR, the seed industry and the farmer. If agencies are required for a special purpose cultivar with a more limited market, then the New Zealand Agricultural Merchants Federation, representing all the seed trade would be asked to nominate an agent.

For the export of seed of pasture cultivars bred by DSIR, the present system does not appear to be inefficient, bearing in mind that DSIR cultivars have been bred for local use and their suitability for most overseas environments must be a matter of chance. However, a penetrative marketing effort for DSIR cultivars in environments similar to New Zealand, such as South America, could be very rewarding. We can see possibilities for collaboration with private plant breeders specifically for breeding for overseas markets, and any such programmes would give the private company marketing rights as mentioned earlier.

Coming now to amenity grasses, the DSIR policy on marketing, would again depend on the size of the market. For the amenity browntop at present being developed by DSIR we would anticipate that it would have very wide application and that it should be generally available to the seed trade. On the other hand, amenity grasses such as chewing fescue with a more limited market would probably be assigned, in consultation with the New Zealand Agricultural Merchants Federation, to particular agents.

With crops it seems more likely that overseas-bred cultivars will compete strongly in the future with DSIR-bred cultivars, mainly because of the size of the overseas effort in many countries. For DSIR crop cultivars that are adapted solely to New Zealand conditions, as is the case with most cereals (McEwan, 1977), we would expect that they should stand up well to overseas competition and we are concerned in terms of marketing policies that these varieties might not get their fair share of the relatively small market if they are not promoted and marketed professionally, as vigorously as imported cultivars. We are therefore discussing with the New Zealand Agricultural Merchants Federation the type of structure which is best suited to decide marketing strategies for various crop cultivars and to allot agencies. We are planning that royalties would be collected on DSIR-bred varieties and that these funds should be used at least in part for promotional purposes.

In preparing this paper, I read an article in "Seed World" by Chase Cornelius, of Northrup, King and Company entitled "Utilising Marketing Techniques in the Seed Business". The seed business is stated to be "a marketeer's delight" because it "abounds with true

product innovation: not simply cosmetic model changes, or the tortured attempts to come up with the hundredth variation on the basic chocolate cake mix, but stunning changes in products" such as new hybrid varieties, exotic vegetables, salt-tolerant grasses, new geraniums from seed, etc. The article went on to describe the tactics required for successful seed marketing — tactics concerned with the positioning of products, the ways to cope with competition, the planning of marketing programmes and with capitalising on market shifts. These are all commercial skills which are by no means the fields of DSIR and in the proper application of our bred cultivars in local and overseas markets we look to those marketing skills in the private sector. It follows that as time goes on we can expect to see increasing links between the marketing experts and DSIR scientists in tailoring speciality seeds for particular markets.

REFERENCES

- Lancashire, J. A. 1975. Evaluation of New Zealand herbage cultivars overseas. *Proceedings New Zealand Grasslands Association* 37: 66-82.
- McEwan, J. M. 1977. Plant breeders' rights: the viewpoint of a Government-employed plant breeder. *Proceedings Agronomy Society of New Zealand* 7: 111-112.
- Rumball, W. and Armstrong, C. S. 1974. The performance of overseas ryegrass cultivars in New Zealand. *Proceedings New Zealand Grasslands Association* 36: 97-104.
- White, J. G. H. 1977. Plant Breeders' Rights and the Acceptable Cultivar Scheme — a Review. *Proceedings Agronomy Society of New Zealand* 7: 115-116.