

THE MANDATORY ACCEPTED CULTIVAR LIST FOR AGRICULTURAL SEEDS IN NEW ZEALAND AND ITS RELATIONSHIP TO PLANT BREEDING AND AGRICULTURAL PROGRESS

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To analyse the desirability or otherwise of an "acceptable" cultivar as opposed to the quite distinct concept of a "recommended" list it is necessary to understand and to review some of the philosophies behind New Zealand's present system.

There are two main factors in favour of having an "acceptable" list:-

- (1) To ensure that a farmer (or grower) is not sold an inferior type
- (2) To prevent the ingress into this country of rogue varieties which may become weeds or place at risk some of our present economically important cultivars through unwanted invasions or crossings.

These two factors are agronomically important, but for administrative convenience only, a third reason is for Reserve Bank and Customs purposes. Namely, to simplify the criteria for the issue of import licences in the interests of conserving overseas exchange and the fostering of domestic seed production.

These are all important considerations and with the limited resources available in New Zealand to control these aspects, superficially our present "acceptable list" concept appears attractive. However the medium and longer term wider interests of the country suggest that a different approach would be a wiser policy to implement.

If it is accepted that freedom of choice is a fundamental tenet of our western democratic consumer-oriented society, to work on the premise that any segment of that society (in this case the New Zealand farmer) shall not have freedom must be based on very sound and strong reasons. These reasons can only be that the farmer is incapable of ensuring his own well being by his own reasoned purchasing decisions or alternatively, that a possibility arising from his decision may be prejudicial to the wider interests of others at large.

Let us therefore examine these points in turn.

The Farmers Best Interests...

Farming like any business, is based on the profit motive, risk taking, sound judgement based on training and experience and the rewards or penalties flowing therefrom.

In this country today there are more farmers than ever with a tertiary agricultural education background and this proportion is increasing steadily. The farm advisory services of the Ministry of Agriculture and Fisheries, farm improvement clubs and advice through broadcasting and the printed media is on a

wider scale than ever in the past.

Commercial seed companies here are sufficient in number and in the main well staffed to ensure a high degree of competition coupled with good sound advice.

In 1977 therefore, this nation's farmers are better placed than ever before to make sound yet diverse buying decisions in a multi choice varied cultivar environment. If we look at the United States of America with the world's largest and most developed agri-business climate, we see no Federal or State "acceptable" lists but highly sought after status by seed companies on "recommended" lists.

It was commented to me recently by a highly placed U.S.D.A. officer that recommended lists had such high status, that for agricultural seeds in some species (lucerne was one), not gaining listing was to meet certain commercial demise.

In Britain I was told recently by a divisional head of the National Institute of Agricultural Botany at Cambridge, that the United Kingdom was dragged reluctantly into the E.E.C. national listing scheme as part of the overall E.E.C. accession package. Britain had a most successfully operating recommended listing scheme prior to joining the E.E.C. convention and this still operates. It is highly prized by seed producers and farmers alike. The acceptable "national" list which now overlays the former recommended lists, has as its criteria the usual distinctiveness, uniformity, stability, historic origin, novelty and agronomic merit as its criteria. This latter point however I am assured, is most liberally interpreted by the N.I.A.B. The national list is thus seen very much as an integral part of the administration of plant breeders rights under U.P.O.V. as ratified under the so called Paris convention. Herein lies the inherent divergence of basic philosophy between the free enterprising, essentially very practical Americans and the more rigid structured approach of the Europeans.

From the New Zealand seed user's viewpoint, it is necessary to believe that skilled farmers with all the advisory sources at their disposal are in a better position to judge what is best on their farm in particular circumstances, than any number of judging panels working in isolated trial locations, often hundreds of miles from his farm. Desirable cultivar characteristics are nearly always a compromise between all the possible "mixes" or permutations of good and bad features.

A recent example of this is the case of Nui

perennial ryegrass. This new Grasslands bred cultivar has outstanding features. One of its original blood lines was taken, I understand, from the property of Mr Trevor Ellett at Mangere near Auckland airport. Part of this farm is on very light volcanic soil which dries out badly in the summer. Very old permanent pasture on this property, through natural selection, developed over about 80 years a very drought tolerant ecotype.

This ecotype is a component in Nui which was bred at Palmerston North to suit widely diverse New Zealand requirements. More recently, a privately funded seed company research programme has independently developed (and is continuing to do so) a different cultivar from original material off the same farm based on a different set of criteria. Comparative trial results in a restricted area of the Auckland Province, appear to indicate higher dry matter yields for the Auckland developed line than Nui.

All this can mean, is that in one geographically restricted area only, comparative yield trials between Nui which is a high performer over a wide area of the country and developed at Palmerston North, is not as well adapted to conditions further north as the other newcomer. Ellett, as it is named, certainly at present does not rate superior to Nui anywhere other than where it was bred and trialled, that is Auckland. Elsewhere it has yet to be adequately tested.

Under a centralised testing system for acceptable cultivar listing, such regional and perhaps quite localised requirements or performance features might be totally missed. At present, acceptable listing requirements need a candidate cultivar to show superiority over presently listed types. By what judgement is the comparative site chosen, criteria selected – and why superior? Why not just equal merit? Surely it is not the intention of the State to create a monopoly. At present it is a case of 'first up best dressed'! This is the very antithesis of government policy which is to create competition, nurture private initiative, improve productivity and get this wonderful nation of ours back on the road to growth.

Somewhere, somehow we seem to have lost our national sense of purpose and direction. Our growth rate in G.N.P. per capita places us at 86th, or absolute bottom of all developed or semi-developed countries! In the last 15 short years, we have slipped from 4th place to 17th in G.N.P. per head.

A national list drastically slows down the availability to farmers of new or even just experimental cultivars. It may also tend to inhibit private funding of plant breeding. Surely the investment in this activity is a high risk involvement for anybody and with capital today costing 18% to 20% pre-tax per annum (if a normal equity/debt ratio is assumed), any increasing of the risk through the deterrent of possible non listing, is a daunting prospect indeed for any investor. Company leaders spending money on research have as a prime discipline, very severe investment performance standards to meet every financial year. The costs of breeding are high. The time frame until pay off is long. However, the costs of maintaining customer goodwill and developing a good reputation are much greater.

In today's enlightened responsive and responsible environment, no company is going to knowingly promote bad or even just indifferent seeds. In this respect it is worth noting the now considerable numbers of high calibre scientific and technical staffs employed by the larger companies in New Zealand.

At present, as the regulations stand, there is nothing to prevent a domestically developed cultivar from being marketed widely in this country. There is no "recommended" list and farmers are hardly aware of the existing "acceptable" list. It must therefore be assumed that it is imported types that are not wanted or are at least held in most suspicion. But why?

Around the world, hundreds of plant breeding stations both public and private, are producing tens of thousands (including horticultural species) of new cultivars every year. It is physically impossible for governments in this or any other country to adequately screen this deluge of material over a range of sites. Plant breeders rights of one sort or another are now operative in all significant countries involved in plant breeding.

Coincidentally with this legislation, the outputs from most private and many public breeding organisations from around the world are now licensed for sale in this country by New Zealand firms. No longer can breeders in New Zealand expect to be able to use freely available, unprotected overseas material. In future it will not be forthcoming, therefore it is likely that local developments will slow down. If imported cultivars are to continue to be subject to the present unwieldy slow moving and commercially uncertain system, the farmers of New Zealand will increasingly be missing the opportunities presented by the diverse multibillion dollar international research effort.

If there is to be an acceptable list, who should be on the judging panel? At present we have a situation where there is a possible conflict of interest, or a situation which is sometimes called "acting as both judge and jury". With our D.S.I.R. plant breeding perhaps involved in a competitive situation with private enterprise, it does create potential problems in this way. Justice must not only be done, it must always appear to be done.

Vegetable seeds are not at present involved and frankly it would be virtually impossible to do so. My own company lists over 3,000 cultivars and the speed and quantity of change each year is great. If it is a case of caveat emptor for the market vegetable grower, is he any less gullible or vulnerable than his agricultural brethren. No he is not, but he knows the vital nature of diversity and development in his seed supply. The market grower knows that seed is just about the most critical but at the same time one of the least of his production input costs. His market is volatile, demanding, diverse and fast changing. Many of my company's vegetable cultivars are sold to only one grower who has selected it personally from his own or the vendors screening trials. Often a cultivar is sold to him on the basis that it is for sale to him and him alone and it is confidential. He has found with that particular cultivar, a market slot he can fill to give him a profitable, competitive edge. Whilst agricultural production is rarely as dynamic or fluid as horticulture, many of the same factors are at work. The market vegetable grower thus is able to highlight

a similar but less obvious environment in which the farmer operates.

Nowhere else in this country's commerce is the consumer so figuratively wrapped in cotton wool as is the present case with agricultural seeds. (I will refer shortly to the protection aspects for phytosanitary and agronomic safety factors).

Hybrid maize is currently subject to the list. There are three national companies marketing or about to market this species. They each represent a very large highly reputable American principal, each of whom is spending millions of dollars each year on research. The business is highly competitive. Hundreds of hybrids from each company are potentially available with considerable numbers of new types available for local screening each season. The high cost of local seed production for the relatively very small volumes involved, ensures a very objective local screening approach with the stringent discarding of marginally useful hybrids together with even limited use of specialist variants. What possible purpose does an official acceptable list have in this situation? A widely publicised recommended list yes, but the present system? Whilst the maize situation is very clear cut, other crops are really no different.

Let us look for a moment at wheat where we may be following the same stony path Americans and Europeans have already trod. Here, with this crop there are many fingers in the pie. Through the power of advertising (the hidden persuader) the American consumer has come to believe that "bigger is better"... that white is clean... that good packaging equates with quality.

Those of us who have been fortunate to travel widely including the U.S.A., will have realised how bad (that is, tasteless) is American bread. It is well packaged, is very light and fluffy with high bulk, has excellent shelf life qualities but tastes awful, something akin to eating cotton wool. Surely the final arbiter of whether bread is good or bad, is how it tastes.

The extraordinarily powerful American baking industry, has persuaded the U.S. housewife to like what she gets. Their industry is geared to highly automated procedures that eliminate or substantially reduce the need for individual attention and skills on the part of baking plant operators. Mass distribution through supermarkets requires long shelf life. To meet these features requires high protein wheat flour of very consistent quality standards with a so called high baking score. The bakers buy the wheat and therefore working on the premise that the customer is always right, the plant breeders have met this requirement. The bread buyer has a much less desirable end product and the wheat growing farmer must accept lower yields, because it usually follows that high baking scores equate with lower yielding cultivars.

The consumer in the U.S.A. is now rebelling against this situation and small local bakery stores are reappearing. Their business is booming and at baking time each day queues form at many shops. This new cottage industry relies on the individual skill of a craftsman baker. Each batch of flour he gets is different from the rest and requires his personal care. His flour is made from usually imported so called low or non baking quality wheat. As his business mushrooms, the small baker proves once again that

unfettered freedom of choice is important. In this country also we are in many areas tending to forget the exciting smell of fresh bread that needed to be locally baked every day because it would not keep fresh.

Are our New Zealand criteria for acceptable cultivar listing of wheats entirely valid? Would not freedom of choice be fairer to all concerned, provided always of course there were ample sample testing procedures to protect both buyer and seller.

In general terms why not have an "unacceptable" list if we must have a list at all. It would give a great deal more freedom and would at least be a safety valve of last resort to government.

No List and the National well being...

The foregoing sets out the advantages to the farmer and in some respects the consumer in having not an acceptable list, but rather a recommended list, possibly coupled with an unacceptable list.

In such an approach, we must ensure that through the present most effective Port Agricultural Service, no new pests or diseases can enter the country. Perhaps also by listing a limited range of species which require mandatory official screening trials, we can be assured that we do not run any risks of polluting currently important cultivars, probably in some cases involving multi season quarantine screening.

Finally to protect our scarce foreign exchange resources, an entirely different approach is necessary to the issuing of import licences for specified species. New cultivars from overseas must be encouraged. However it should be on the basis of local seed production after the initial one or two years of trialling and test marketing, unless a strong economic case can be made for continuing to import. At present we shelter behind the list with the intent of not upsetting the Europeans who in theory could retaliate. However under Gatt, we are permitted quantitative import controls to conserve foreign exchange. This is accepted and recognised for a wide range of manufactured items. As it happens, European seed usage is now very rapidly changing to advanced proprietary cultivars. As a corollary, our exports of commodity type seeds are tending more and more to be low cost "fill ins" in periods of northern hemisphere shortages.

As far as plant breeders rights is concerned, there is a definite cleavage between the European and American philosophies. The Americans in effect are saying "the whole matter is distinctly commercial. It is our objective to give the utmost facility and encouragement to private plant breeding. We in America trust the plant breeder unless he is proved guilty". If a breeder incorrectly or falsely supplies misleading cultivar data we will trust that breeder no longer and may regularly ask for official growth trials from him. The American seed industry is expected to police itself which it does admirably. With the many applications and registrations that have been made since the American Plant Varieties Act was passed, it is remarkable that only now the first challenge in the courts is being made to a registration. The civil law court is the correct and proper place for this challenge to be decided. That is, directly between the two protagonists involved. Incidentally to service the huge U.S. seed industry requirement, Mr Stan Rollin,

U.S.D.A. Plant Varieties Commissioner, has a total annual budget of less than \$US100,000. This includes office rental and computer time.

The New Zealand Plant Breeding and Research Association believes that a strong and profitable, diverse and internationally competitive seed industry can only grow in a free climate. This should encompass government recognition of the maturing nature of this industry and the growing part it can play in helping to restructure our agriculture. The Association has the vision of a seed industry firmly rooted in private enterprise and all the disciplines that imposes. It must employ the skills of many New Zealanders in a high technology environment in a commercially turbulent international arena.

A seed industry thus structured, has the ability to turn existing seed producing hectares in New Zealand from the path of low value commodity type varieties to premium high value proprietary cultivars. These latter types will be wholly "market oriented", bred for specific situations here and abroad. We have the opportunity. We face probably a 25 year project. At this decisive time, we must "grasp the nettle".

Finally, let us for a moment take a glimpse at the seed industry in four countries with whom we currently trade and with whom we must compete. England, Denmark, Holland and the U.S.A.

In world markets including New Zealand, the dominant brands emanate from the latter two countries. Holland, a small overcrowded country of 12 million people with a climate quite unsuited to seed production. In the Netherlands there is one overriding factor though and this is a most enlightened piece of legislation fostering private plant breeding.

By contrast, Denmark a country with similar resources and motivation and a previously very strong internationally competitive seed industry has seen this wither and succumb to Dutch competition. England has never had a strong industry even though its market is five times greater than the Dutch. The U.K. government has not been parsimonious in research funds however. The Government Plant Breeding Institute at Cambridge has been technically very successful. However these scientific achievements have not often been translated into export successes as the commercial channels necessary to achieve this through marketing and private enterprise have not developed accordingly. International seed marketing by its very nature is an entrepreneurial exercise. The U.S. has been very successful because of its internal market size, its ideal seed producing climates and its long history of private initiative. The association I represent believes that the closest co-operation and unity of purpose between government seed research and private industry in this country will produce the best results. We stand ready to help in every way we can.