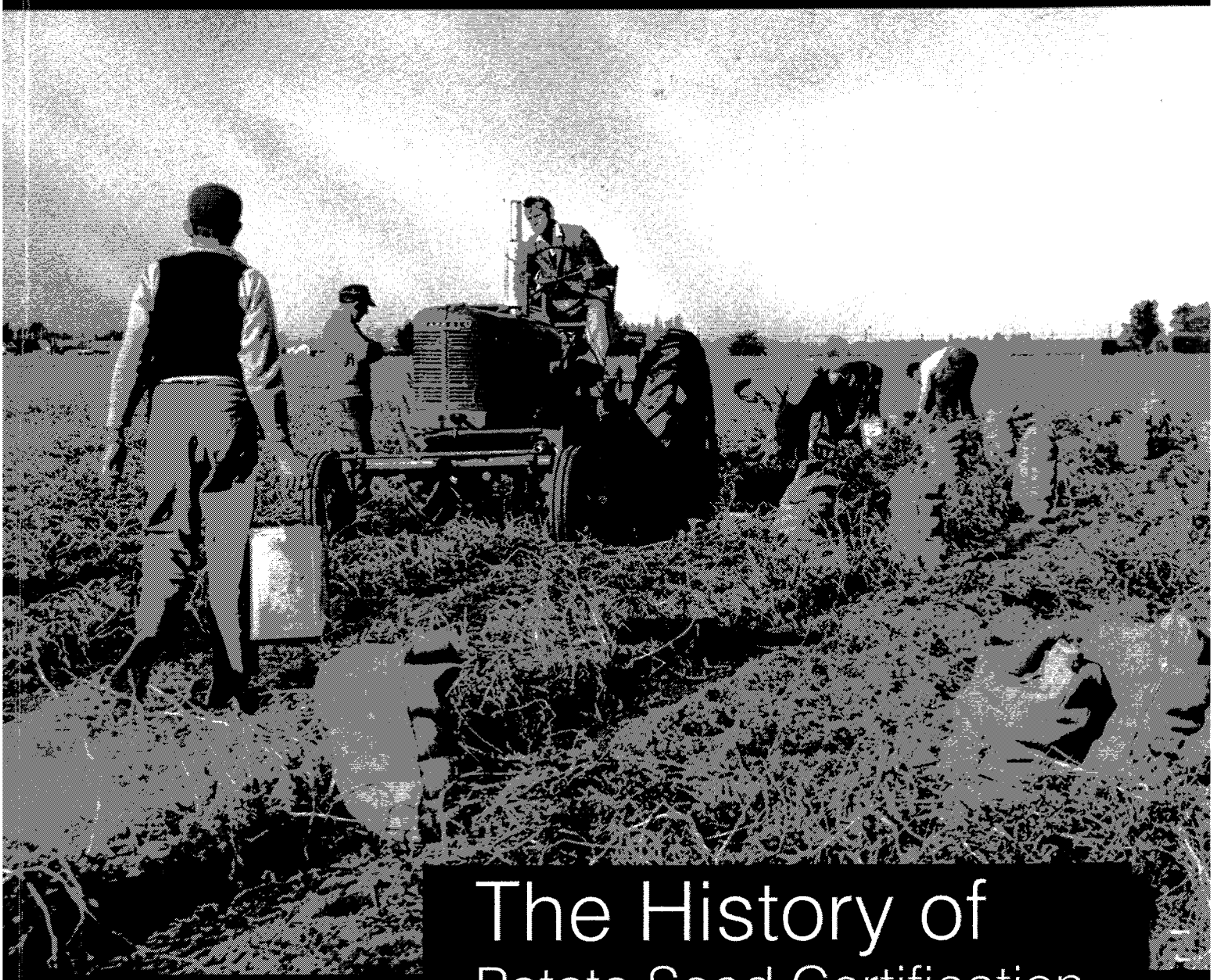

The History of
Potato Seed Certification in New Zealand

1927 - 2000

A Heritage Document Researched and compiled by H B Maunder

The history of seed potato certification in New Zealand

– 1927-2000

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Vegfed

The New Zealand Vegetable and Potato Growers' Federation

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Contents

The potato planter

Two little feet, one *Banner*. Two little feet, my little feet,
right from the start.
Two little feet, one *Banner* goes down; there's a bag full to plant, dad got them from town.
Two little feet, one *Banner*. twelve inches so neat, the distance apart.
Two little feet, one *Banner*. dropped at the front foot forever and ever;
Two little feet, one *Banner*. I go up this row and back down the next,
I haven't missed any, no, never, not ever!
Two little feet, one *Banner*.
Dad's making rows with a plough and a horse, and it's my job to put in the taters, so neatly, of course!
I mustn't miss any cause he'll soon know,
Cause there'll be a plant missing some place in a row,
And even I know the seed must be there ... or no plant will grow.
Two little feet, one *Banner*. another goes down, if it hits on my toes it will roll out of line.
Two little feet, one *Banner*. another goes down it's just fallen in front so it will be fine.
Two little feet, one *Banner*. another, another, and still more go down,
I go up this row, down that one and back.
I can feel my apron pulling hard on my back.
It's actually pulling down hard on a shoulder,
Mum's is not hurting, and she can go faster cause she is much older.
Two little feet, one *Banner*.
A whole acre is planted so how many more;
It's getting near lunchtime and my shoulder is sore.
Two little feet, one *Banner*, one more and still one more!
We have to keep planting right to the last; 'cause
Dad's covering them up with the plough going fast.
I hope he does mum's rows before he does mine, 'cause he'll hurry me up and I'll get out of line.

Two little feet, one *Banner*. The last one goes down, 'tis the end of a row!

Which are my rows?
When they're all covered up, how will I know?
They'll all be spaced out so neat, dropped neat to my feet.
I'll show you each row when the plants start to grow.

"Come up to the field, I'm going up now and you can come too!
There are **my** *Banners*, and they're **all** coming through!"

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PART ONE

Introduction

The New Zealand 1901 'Year Book' tells us that in the 1899-1900 season 25,396 tons of potatoes were exported from 36,984 acres (14,973 ha). By then, serious potato growers were beginning to seek out the better varieties that were coming to New Zealand. The introduction of potato varieties to New Zealand in the early days of serious colonisation was understandably haphazard with many varieties being brought in, many ships arriving, and easy importing.

New Zealand growers had the help of the newly created government department, the Department of Agriculture, which was set up in 1892. Together, growers and the Department had by 1920-25 realised the value of sorting out the crops and varieties that were most suitable to their land and district. The new department established communication with breeders and growers in Great Britain and in America, as well as watching agricultural development in other colonies, particularly Australia and South Africa.

Throughout these adventurous years, the many 'synonyms' and 'rogues' were beginning to be separated from the more promising and known pure varieties. A new act of parliament, the Orchard and Garden Diseases Act 1908, became effective, giving reasonable surety that imported cultivars would be as free from disease as humanly possible, but there was no assurance that the cultivars would be true to type. The importing of disease into the clean fields, market gardens and young orchards of the colony was by far the greater issue. The Act would have the added effect of helping to limit the number of cultivars coming to the colony. Cultivars would be purposefully selected and shipped through established merchants specialising in potatoes.

Keen growers carefully rogued out the unwanted varieties that were being found in some of the older crops with the intention of keeping the better ones. Often the rogue plants were hard to spot, but with enthusiasm and dedication the growers and Department of Agriculture field officers soon developed new skills in varietal recognition. These farmers were taking a pride in their crops and on seeing the benefits began to seek a certification scheme like that running successfully in Britain.

Mr J W Hadfield, HAD agronomist, wrote in the August 1927 issue of the New Zealand Journal of Agriculture:

"The Fields Division of the Department of Agriculture has arranged to initiate a system of certification of seed potatoes within the Provincial District of Canterbury during the coming season, 1927-28. If the scheme receives due support from growers, merchants and seedsmen it is intended to extend it in succeeding years to embrace the whole Dominion."

Mr R Thomson, Assistant in Agronomy; Government Pure Seed Station, Lincoln, wrote in the New Zealand Journal of Agriculture, May 20, 1935:

"Preliminary investigations undertaken at the Ashburton Experimental Farm in the season 1927-28 revealed the fact that commercial stocks of seed were badly mixed, often wrongly named, and in many cases unproductive. It was found, moreover, that those who were dissatisfied with their crops ... that is those who had the least productive lines of seed ... sold these and bought others, but bought with no assurance that they were not receiving some other grower's discarded seed poorer than their own."

In 1926, interested parties, mostly growers and merchants, had sent in some 8,627 samples of varieties to the Department's Seed Testing Station at Lincoln for field trials that would serve to help sort out the jumble that Thomson had spoken of. In 1927 some 10,768 samples were received, demonstrating the eagerness of both the trade and growers to grow true to type varieties.

In the first year of operation, some 11 varieties were entered for the first trial run of the scheme. One hundred and ninety acres were planted in Canterbury in 1927. The varieties were Arran Chief, Aucklander Short Top, Aucklander Tall Top, Bresee's Prolific, Dakota, Early Regent, Epicure, Endurance, Northern Star-Gamekeeper, Robin Adair, and Up-to-date.

The trial was a success so it was now open for use, and in the 1928 season entries were received from Canterbury, Otago and Southland. Provided they were grown in the above three districts, the following varieties that had been positively identified as pure varieties after several years of study and fieldwork, were accepted:

Arran Chief
Aucklander Short Top (NZ Sutton's Supreme)
Aucklander Tall Top (NZ Sutton's Supreme)
Black Kidney
British Queen
Dakota
Early Puritan
Early Regent
Endurance
Field Marshall
Gold Coin
Great Scott
Kerr's Pink
Langworthy
Majestic (Findlay's)
Northern Star-Gamekeeper
Robin Adair
Snowdrop (Witch Hill)
Epicure
Beauty of Hebron (pink)
Beauty of Hebron (NZ)
Bresse's Prolific
Brownell's Beauty
Duke of York
Early Rose
Elephant (White)
Epicure
Gamekeeper-Northern Star
Golden Wonder
Iron Duke (President)
King Edward
Magnum Bonum
Maori Chief
Perfection New Era
Sharpe's Express
Up-to-Date

(From NZ Journal of Agriculture May 1928)

Comparable performance was a qualifying issue in the earlier stages of the new certification programme.

In 1928, growers wishing to certify their crops of a variety in the above published list were invited to register the crop for certification and to submit the crops for inspection; and with each entry, supply 100 tubers from each line entered. (There could be several 'lines' from the one variety, i.e. over a period of time and experience with a variety a grower may have noticed obvious or merely subtle differences in performance and/or appearance of that variety in separate fields that, if mixed, could be classed as an 'off-type'.)

The Department of Agriculture comparison trials were conducted at Ashburton initially, and later also at Palmerston North and Gore as the certification programme spread to other seed growing areas. The evaluation measured uniformity of growth, cropping performance and disease. The plots would be harvested and the tubers weighed to compare the relative cropping power of the variety. Often the Department would hold a Field Day when donor growers and prospective buyers would gather to see the plots being harvested. In later years, plots were on Wilson's farm at Seadown in South Canterbury.

The New Zealand Seed Potato Certification Service

The objective of the new certification scheme was to allow production of a product that would be true to name, visually free from air and tuber-borne diseases and, equally important, possessed an acceptable 'cropping power.' The Viruses X and Y, Potato Leaf Roll virus and Blackleg, along with the various wilts in those early potato crops, would be a major factor, with the choice of district or paddock possibly to a lesser degree responsible for reducing the 'cropping power'. One doesn't hear that term nowadays; we simply talk about performance or yield.

Inspection of crops entered for certification

Initially, inspections[1] were made of the field crops from early January and again before the tops died down. As the number of entrants and different varieties with their differing growth patterns increased, inspections had to be spaced out starting in these later years in early December through February, with a second inspection 3 to 4 weeks later just before the tops began to die down. This later inspection was necessary to detect visible primary leaf-roll virus infection from spring or summer aphid flights, and when off-types or bolters (referred to as 'wildings' in some other countries), which were fairly common in the earlier days in particular varieties, could be more easily seen.

[1] Inspection procedures: Up to date certification inspection procedures are contained in a Manual of Procedure published when procedures are revised and must be notified to administration and inspection staff. Students of seed potato certification in New Zealand should apply to the New Zealand Seed Potato Certification Authority for further study of the rules and procedures of the service.

Other diseases[2] and faults could be picked up in the earlier inspection. The 'bolter' plants are not to be confused with foreign varieties. Bolters in New Zealand crops generally grew on to mature later than the host crop; staying green longer and often standing taller than the true plant, making them very easy to see after the tops on the host crop had died down. Another reason for the later inspection was to more easily observe later or earlier maturing varieties that were mixed in with the inspected variety. The varieties grown through the period from the commencement of the Certification Service that were prone to throwing the bolter plants as mentioned above are Ilam Hardy, Red King Edward, King Edward, Arran Banner, Jersey Bennes, Epicure and Majestic. A special late inspection of these crops had to be made to assess the amount remaining before a final certification would be given.

The study of 'bolters', particularly in Ilam Hardy crops, presented somewhat of an enigma in as much as it seemed that the more one removed them from the crop, the more they appeared in the following season. The arrival of the 'pathogen tested' seed in the 80s saw a gradual but welcome end to these annoying plants. In 1971, bolters were not counted as rouges in the Ilam Hardy crops since there was apparently no cross contamination, as could be expected (though not always, if ever) of a rogue plant.

When certifying a crop, consideration was to be given to its isolation from other uncertified potato crops and the locality. After passing field inspections, crops would be preliminarily sorted into the intended 'groups' with the results of the later inspection of the seed tubers making the final 'grouping'.

The assessment of the 'relative cropping power' of a variety was abandoned after the 1969-70 season when the trial plots were discontinued. The need for comparison had more or less become obsolete a few years earlier through better selection and cultural practices. Trade and market demands were ensuring that the weaker lines of cultivars were being replaced by the better cropping lines and varieties. Also, the area of the trial plots had reached upwards of 27 acres and had become too much of a strain on the resources of the Ministry.

A typical standard for provisional grouping would be as in 1971:

Group	Max. virus	Max. rogues & bolters totalled
1	0.1%	0.0%
2	0.5%	0.2%
3	1.0%	0.4%
4	1.5%	0.8%

[2] Crop diseases: Refer to independent manuals detailing potato crop diseases for explanation of diseases affecting the potato crop and recommended treatment.

Bolters were not counted as rogues in Ilam Hardy crops from 1970 onward.

The tolerances decreased over time as the standard of the crops improved.

Where a crop exceeded the limits, it would drop down to the next lower 'Group' and be rejected outright if it exceeded the lowest 'Group' and where the grower could not remove sufficient affected plants.

To become eligible for consideration for 'Group 1', growers had to maintain their own lines of seed for at least 3 years in a very high standard of health. As well as freedom from rogues, the growers who bought this seed must obtain similar results and grow the crop in a dedicated 'Group 1' area. A grower who had not grown 'Group 1' seed before and was in a 'Group 1' area, could buy a 'Group 1' line but that line would not be recognised as 'Group 1' until the grower had grown it for 3 years. 'Group 1' status could not be obtained in a dedicated 'Group 2' area.

The crops that passed the field tests were provisionally classified as 'Mother' seed, in 3 grades, as 'Groups' 1, 2 or 3; and 'Commercial' seed classified as 'Groups' 4, 5 or 6. The latter 3 groups were gradually abandoned as the standard improved with only 'Groups' 1, 2, and 3 remaining by 1971 when the Potato Board assumed responsibility for the tuber inspections. The terms 'Commercial' and 'Mother Seed' also disappeared. The seed tubers had to pass a tuber inspection process for final classification and, if satisfactory, a 'Group' number was assigned and a 'certification tag' attached to the sacks.

It is interesting to note that the seed had to be sized to the then most acceptable sizes as part of the certification process. The sizes would be recorded on the 'tag'. The 'certification tag' had to be produced as proof of classification when applying for re-entry of that line for certification by the grower or a buyer. Tags were colour coded for ease of identifying the grade in the container. 'Group 1' tags were green, 'Group 2' brown, 'Group 3' blue, and 'Group 4' red. Lines of seed would be kept apart and identified by a 'letter', e.g. line 'A' or 'C'. By way of example, a grower could dispense with line 'B' but the remaining lines 'A' and 'C' must keep their identity. It was not unusual for one line to perform better than another. A line was usually determined by its origin, e.g. a field planted with newly bought seed, or possibly seed grown by that grower in another district. It was customary in many instances for a buyer of Certified Seed to visit the grower and inspect the crop, and for the seed grower to discuss and/or visit the progeny of his seed. Many growers took a pride in the 'cropping power' of their seed. Much seed was bought and sold on performance.[3]

In 1973, the sizing by weight requirement was abandoned in favour of the inspectors recording the size to which the grower or packer had graded them, usually dictated by the buyers' own preference and not that of the certification body. The requirement for the original grower to produce a tag for re-entry was dropped in 1980, but tags were still to be obtained and attached to lines sold to other growers. The tag had to be produced as proof of certification

[3] The average size by weight of tubers was obtained by selecting the smallest 16 and the largest 16 of the 100-tuber sample drawn from the sacks of each individual 'line' being inspected. The more desirable range being the 2–4 ounce weight range, but 1–2 ounce or 4–6 ounce were often ordered. The handling capabilities of the buyer's planting equipment would often dictate the size range.

status when new owners entered the seed in their own names in the first year. Tags indicating the Class or Group had to be attached to containers, and be made available to buyers as proof of authenticity.

(For current rules, refer to manuals of procedures. Rules and conditions in the manuals are subject to change from time to time.)

Suitable districts established

In the early stages of the certification scheme, only crops certified as 'Mother' seed were eligible for re-entry into certification. Areas planted with certified 'Commercial' seed were not eligible for re-entry, except where the crop entered had been raised by the original entrant. Growers who purchased seed with the intention of becoming specialist growers and entering the crop for certification must have purchased certified Mother seed, i.e. either Groups 1, 2 or 3.

Along with the entry criteria and the rules governing re-entry, district suitability and altitude were considered important, as was proximity to residential areas. Boundaries surrounding residential areas were drawn up to isolate the certified crops from possible contamination emanating from domestic gardens and orchards that might harbour the virus-carrying green peach aphid.

All of the South Island was acceptable but only outside the set town boundaries. In the North Island, where latitudes and climate were more favourable to virus and fungal infection, no seed grown at an altitude of less than 1,000 ft would be considered.

Through the system

Table crops would usually be planted with Commercial seed for the domestic market, to finally drop out of the system when new 'lines' would be bought. Thus with a progressive movement along a chain of bulking at one end and falling off to the end user (usually the consuming public) at the other, the production and demand for certified seed remained in balance. Some table growers would keep back some seed, especially from any 'Mother' seed they may have bought for additional table production. The subsequent crop could not qualify for entry into a certification programme. A table grower may have bought 'Mother' seed if there was an oversupply and it was priced accordingly. On the odd occasion when economically viable, table growers may have bought certified seed to 'grow on' to plant as 'once removed' the following year. The crop would have been grown on to maturity and the seed size dressed out. The benefit would have been a better-presenting table crop as well as good seed for the next crop. The grower then did not need to buy all new seed each year. Some districts were not suitable for this exercise and often other land would be sought.

The origin of all seed entered had to be able to be tracked back to verify its origin, and progeny were subjected to checking for consistency. The spot-checking of progeny also helped the inspectors judge the consistency of their work, year to year. This particular feature of the programme was dropped in 1978 as changes had occurred in the seed industry with many of the 'Group' lines being replaced by a new system – pathogen-tested seed. Better trade

communication, the arrival of Plant Variety Rights and fewer growers producing larger quantities of seed also meant seed quality standards and varietal purity were better controlled.

As the system developed, by 1935-40 or so, the overall potato industry was divided into two separate industries: producing certified seed, and growing table crops for domestic consumption. New varieties were being imported and locally bred or selected, with some growers opting to specialise in producing crops suited only to the rapidly rising processing industry.

Management and advisory

Right from the beginning of the certification scheme, a committee of Department of Agriculture field officers oversaw the management of the whole programme. In 1947, a Seed Potato Certification Advisory Committee was established. Later this committee became a government recognised body under the Seed Potato Certification Advisory Committee: MAF Act 1953. The Seed Certification Officer, a senior Agriculture Department officer (seeds), became the official in the chair, with research, trade and grower representation. Later, others involved in the certification process were invited to attend meetings, e.g. The New Zealand Potato Growers Federation along with research personnel, field inspection officers and the Potato Board.

Although the Agriculture Department officers generally made the rules based on the maintenance of health and purity, items relating to area, field staff training and management along with basic agronomy would be discussed with the advisory committee. So well was the foundation work done by the field officers and the initial growers that there was very little modification needed or sought by future growers or the trade.

In 1964, after 37 years, the titles, 'Mother' and 'Commercial' were dropped as were 'Groups' 5 and 6. Classifications were then to be either 'Groups' 1, 2, 3 or 4.

As standards continued to improve, the 'Group 4' class was dropped on the completion of the 1972-73 season when the Potato Board assumed responsibility for the tuber inspection service. 'Group 3' was retained only by a few growers who were mainly supplying a gradually diminishing home-garden seed market. Only one 'Group 3' line was certified in the 1997-98 season and none were entered for the 1998-99 season.

Although a high standard of purity and disease vigilance was attempted, the system was not without a gremlin or two. The two highly praised varieties, Aucklander Short Top and Aucklander Tall Top, were running into trouble with a seemingly uncontrollable infection of PVY in most if not all of the Aucklander crops entered. In 1959, a PVY-free strain of the Aucklander Short Top variety was introduced. The then Department of Scientific & Industrial Research at Lincoln applied a heat treatment to eliminate the virus Y in the Aucklander Short Top. Meristem cuttings from the growing tips of the treated plants were taken in hygienic conditions and grown into virus-free plants. Unfortunately, the plants became reinfected in a short time, and the lines were eventually abandoned in favour of less disease-prone varieties. Because of the difficulties with these two virus-prone varieties, Aucklander Tall Top was entered for certification for the last time in 1968 after 40 years of

production. Aucklander Short Top, the more popular of the two, disappeared from the lists in 1983 after 55 years of production. (Refer to table of varieties and production below.)

Government sheds a service

The Department of Agriculture, now under the new title of The Ministry of Agriculture & Fisheries, considered that health in the field was much more important than the shape and condition of the tuber, and compulsory inspection of the tubers was abandoned for the 1971 harvest. The new Ministry had felt for some time that the industry should not need an inspector to tell a grower what was, and what was not, a worthwhile tuber. The Ministry thought that after 43 years, a grower would have sufficient experience and expertise in grading the crop to an acceptable standard. Since the inception of the certification service there had been field days, schools, and dressing guides along with knowledge handed down from father to son. Growers had long been aware of the value of a seed crop that produced results for the buyer.

Inspection of the tubers continued to be a requirement of importing countries covered by the international phytosanitary certificates. The growers of crops specifically for table supplies also felt that they needed some endorsement of seed tuber standards. The endorsement of a tuber health standard requested by seed buyers was not considered by the Ministry to be a Government responsibility but rather a tool of trade. However, growers of certified seed wanted to show and endorse the standard of their product. An independent assessor was seen to be good for discipline at the production end and confidence at the buying end.

Discontinuing the tuber inspections was a disappointment to the buying table growers as the health of a table crop depended to a large degree on the health of the planted seed. Export of high quality table crop to the Pacific Islands had been long established, and growers were concerned that the achievement should not be allowed to slip because of the lack of a sound endorsement service. A phytosanitary certificate had to be issued for export seed on inspection of the tubers to comply with the rigid standards dictated by the importing country. There also had to be confirmation that the consignment of seed potatoes came from certified crops. Certification records were used to prove this. Growers of both seed and table crops were adamant that each local consignment should also be inspected and tags issued to indicate that each line measured up to the standards acceptable to the industry. The Ministry relented on pressure from the Potato Board and the Potato Growers' Federation, and the service was reintroduced for the 1972 harvested crop on the condition that the industry looked for an alternative operator for the service.

The Potato Board, set up by the Government in 1950 to stabilise the potato growing industry by continuing the contracting system used during the 1939-45 war years, took on the responsibility of the Tuber Inspection service, and the issue of tags for the 1973 harvest onward. The only significant change to the original tag system was that as from the 1973 harvest, compulsory sizing was abandoned and the inspector was merely to show the sizes actually found on the day of inspection. The buyer would tell the packers what size

range was wanted, and it was then up to the packer, be it a grower or commercial pack-house, to supply to order. In addition to the average size range, the average weight of the tubers from a 100-tuber sample was also to be included on the tuber inspection report.

The Board contracted the work out to the 'Port Graders', a body well suited to the task of inspecting potatoes. It had been the role of this body through the post-war years to inspect potato and grain shipments travelling by rail and ship to the North Island, and to overseas destinations subject to the then GAFTA (Grain & Feed Trade Association) agreements for international trading. Seed and table potatoes were often bought and sold on the strength of the Port Graders' certificates. The advent of the wooden bin holding a whole ton of seed made the old 'chapman' sacks weighing 75 kg at around 13-14 to the ton redundant. The need to put forward a 'sack tender' by grower associations disappeared along with the sacks. Possibly the sack was missed mostly at the district agricultural shows when the sack-carrying races ceased. (The sack-carrying racers were getting older and fewer as well.)

In 1971, potato cyst nematode (PCN) was found in some table crops in the Pukekohe area followed soon after by a find in the Marshlands area and on a farm in the North Canterbury certified seed district. This find sent signals for extra vigilance to the seed industry, and a chemical dipping station was set up jointly by the Ministry of Agriculture and the Potato Board to treat seed from crops on suspect land. Since no further infestations were found, and any suspect areas were withdrawn from certified seed and table crop production, the treatment station was closed down. The industry settled down to production with a crop sampling programme by the Ministry of Agriculture with 10% of the total seed area being sampled each year in early January. A special levy was added to the certification fees continuing until further notice. The continued PCN surveillance was necessary to safeguard seed potato exports. No PCN has been found in the certified-seed production since.

A new venture and classification

In 1980, the first cultivar was entered into the certification scheme from the new 'pathogen tested' (PT®™) programme by a consortium consisting of a grower, Mr N Pyper of Southland, trade, Alex McDonald Ltd, and government research interests, Crop Research Division, DSIR. This programme was based on heat-treating lines to remove pathogens and then maintaining these lines in tissue culture. Each year, material moved into a lower class until it was used to produce table crops. This process usually took 4-5 years. A trademark had been established and registered for the commercial application of the system. The original proponents of the PT programme wanted the tested cultivars entered into the certification system in a separate class. The Seed Potato Certification Advisory Committee, however, steered by the Ministry of Agriculture and Fisheries, did not see that there was a place in a government-monitored system for what was viewed by the policy-making staff as a purely commercial stand-alone quality assurance system. The very system of ownership and maintenance by trade interests drew it apart from a public system.

However, sympathetic MAF field officers, and the need to provide phytosanitary certificates to importing countries overcame that hurdle, and

the PT seed was entered in its own programme and classes to be accepted as certified seed. The first cultivar entered in the PT scheme was Sebago, followed closely by Red King Edward, Ilam Hardy and Rua. Soon several merchants began importing overseas varieties that were covered by Plant Variety Rights for evaluation. Many of them were unsuccessful, but some performed well and have become well established in the New Zealand climate (refer to lists 1 and 2 of varieties).

To maintain a high standard of seed, applications to grow PT®™ had to be made to the Pathogen Tested Seed Advisory Committee, an advisory/management committee. Crops would be grown under contract to agents of the sponsoring consortium. The certifying authority, acting as an independent body, certified that the standards of the field crop and tubers were as prescribed by the Pathogen Tested Seed Advisory Committee. There are, as well, strict standard conditions in place to safeguard the purity of crops carrying the title of New Zealand Certified Seed Potatoes. These general conditions follow the original standards and disciplines established by the Department of Agriculture from the start.

The suitability of districts and boundaries are reviewed as considered necessary.

Government to shed more services

It was rapidly becoming government policy to shed services that could be seen to have 'identifiable beneficiaries', that is, other than a government agency.

To this end, in 1985, the Ministry of Agriculture and Fisheries announced its decision to pull out of certification services altogether, and the Potato Board took up the responsibility for the entire seed potato certification process in 1986. A splendid record of nurture and co-operation by dedicated departmental field officers over a period of 58 years had come to an end.

Two years later, in 1988, the government repealed the Potato Growing Industry Act, which meant the demise of the Potato Board. With it went the funding of the only other potato industry body, the Potato Growers' Federation. The Vegetable Growers' Federation stepped in, offering the industry a place at its table. The Potato Sector of this reconstituted body (The New Zealand Vegetable and Potato Growers' Federation Inc.) then set up the present body, the New Zealand Seed Potato Certification Authority, to administer the orphaned potato certification scheme.

The industry was now on its own.

One could say that the potato industry had more or less 'come of age' with the systems and programmes coasting along with mostly excellent and visibly virus-free (visually undetectable) 'Group 1' lines on many farms in both islands. Growers took a pride in the attainment of 'Group 1' status and the lines were eagerly sought after, not only by table growers, but also by fellow seed growers. It was a struggle to 'clean up' some lines that had been 'let go' and buying a new line was the easiest way to get into the coveted 'Group 1', but not all made it through. Some lines had been kept 'as clean as a whistle' for nigh on 20 years – a real credit to the vigilance and excellence of the seed grower at work.

A further classification is added

In 1989, an 'Open' certification classification was set up to accommodate any growers of cultivars tested for virus who chose not to use the PT®™ scheme. Eurogrow Potatoes Ltd imported mainly Dutch cultivars and became the first to be entered in the 'Open' scheme programme.

In 1999, The Seed Potato Certification Authority linked its certification process with the Seed Certification Bureau, a sector of AgriQuality New Zealand, which in turn came from the old Ministry of Agriculture and Fisheries. The executive officer of the Potato Sector of the New Zealand Vegetable and Potato Growers' Federation assumed the role of secretary. The head office remained in Wellington.

The Authority continues to set the general rules, adhering closely to those set years ago by the Agriculture Department. The Authority continues at the time of writing to set the field and tuber standards for the 'Group' and 'Open' programmes, with the PT®™ programme continuing to set its own standards. The management programmes for all three programmes are the same as or better than the minimum set by the Authority (refer to the annual booklet, 'New Zealand Seed Potato Industry Seed Potato Certification').

With the arrival in New Zealand of the Plant Variety Rights system, the variety to be protected by the system needed to have an adequate description along with detailed identification particulars before it could be registered and approved for protection as a distinct variety. Although the certification service recognised the presence of a Plant Variety Right (PVR) on a cultivar, it took no part in policing the PVR rules. This was the sole responsibility of the rights holder.

Plant Variety Rights

This system of property protection was originally known as the 'Plant Selector's Rights' scheme that came into operation in 1975 under provisions of the (New Zealand) Plant Varieties Act 1973. It was a sort of 'patent' for varieties bred by plant breeders.

The Act was revised 5 years later and entitled Plant Varieties Act 1987. The revised Act came into line with an international agreement, as New Zealand is a member of the International Union for Owners' and Breeders' Protection of New Varieties of Plants (UPOV). In 2004, 54 potato cultivars were covered by PVR.

List 1

Seed potato crops certified in New Zealand

The potato varieties certified up to the year 2000 in the New Zealand certification programmes are listed below in chronological order. Where a selection or PT strain has been introduced, this is shown below the respective Group entry.

List 1 includes varieties that may have an entry in two or more programmes, i.e. 'Group', PT or 'Open'. List 2 contains varieties entered when they originated only from PT, tissue-cultured (as opposed to tuber stock) seed stocks for the first time in either of two programmes, PT® or 'Open'.

Dates entered alongside a variety, breeder/selector usually indicate the date the variety was named and/or released commercially. The actual cross or selection of a seedling itself would have been made several years before.

(Notes: Considerable time has elapsed since many of the varieties were first grown in New Zealand, and while memories and documents may be a trifle cloudy, we prepared this list by referring to the best known and most reliable literature. At the same time we know that some of the data may need to be updated and/or corrected.
A '+' sign following the date indicates that the variety was entered into the 1999-2000 certification programme and might still have been growing after that date. Other varieties might still be growing but were not entered for certification.
The term 'cultivar' is used here where no name has been given to the resulting progeny of a 'cross'.)

Abbreviations in following list

BL = Breeding line material. Some special cultivars are kept only for breeding

CRD = Crop Research Division of the Department of Scientific & Industrial Research Institute (New Zealand). Became the New Zealand Institute for Crop & Food Research Limited in 1992

EPL = Eurogrow Potatoes Ltd NZ

NZICFR = New Zealand Institute for Crop & Food Research Limited

NEARS = New England Agricultural Research Station (Australia)

NIAB = National Institute of Agricultural Botany, UK

PBI = Plant Breeding Institute, Cambridge, UK

PT class = Pathogen Tested Class. New Zealand only. (PT®™)

SCRI = Scottish Crop Research Institute (formerly SPBS)

SPBS = Scottish Society for Research in Plant Breeding

USDA = United States Department of Agriculture

Varieties entered for certification in New Zealand

Variety	Years in certification	Peak area (ha)	Year
Arran Chief	1928 - 1979	706	1954
	Raised by D McKelvie: c1907, from a seed ball off Sutton's Flour Ball. Introduced to commerce c1911.		
Aucklander Short-Top (NZ)	1928 - 1983	1173	1955
	Bolter type from Sutton's Supreme c1907 (ref: section on NZ selected and bred varieties).		
Aucklander Tall-Top (NZ)	1928 - 1968	159	1955
	Bolter type as above Aucklander Short Top (refer to List 4).		
Bresee's Prolific	1928 - 1935	31	1930
	Seedling from Garnet Chili, raised by Albert Bresee, USA, c1861. Reported as being grown and sometimes sold as Magnum Bonum and Early Regent. Early crops in NZ were said to have had Northern Star as a persistent rogue.		
Brownell's Beauty	1928 - 1929	3	1929
	Reported growing in Tasmania in 1878 (Australian Heritage Lists). Some texts say it is Adirondack introduced into Tasmania around 1905-07 (WG Burton).		
Dakota Red	1928 - 1986	464	1955
	Bred by O H Alexander, USA, c1883. Sometimes known in USA as Jersey Red Skin.		
Early Regent	1928 - 1933	10	1930
	Raised by Robert Fenn c1880, and introduced to commerce by Messrs. Sutton & Co., c1920. Has been confused with Shetland Early Regent, but is a distinct variety.		
Also a bolter type	1930 - 1940	14	1936
Endurance	1928 - 1931	3	1931
	Thought to be an old USA variety and possibly renamed in NZ.		

Variety	Years in certification	Peak area (ha)	Year
Epicure	1928 - 1988	57	1954
	Bred by J Clark, UK, c1887. Burton records (Magnum Bonum x Early Regent) as parents. Introduced by Sutton & Son 1897. (Strain grown in NZ said to be close to a bolter type. MAF Crop Description)		
PT class	1985 - 1993		
Field Marshal	1928 - 1932	6.8	1932
	Bred by A Findlay, c1894 (Patterson's, Victoria x Blue Don) is said to be identical to Up-To-Date but with russet skin and possibly a more consistent and even oval shape (Salaman Ag. Bulletin 142). Said to have been sold in NZ as Sutton's Supreme.		
Golden Wonder	1928 - 1931	1.4	1931
	Said to have been raised by J Clark, c1876. Originally called Maincrop c1876. From same Early Rose seed ball as Magnum Bonum and Maincrop. G. Wonder is identical to Langworthy except that it has a brownish russet skin very similar to Abundance. Distributed by Brown in 1903-05.		
Great Scot	1928 - 1939	4	1934
	A seedling selected by G Mair, c1906. Similar to and sometimes has been called Sefton Wonder. The tops are identical, but tubers of G Scot have a fairly mildly coarse russet skin.		
King Edward VII	1928 - 1991	162	1945
	Said to have been bred by an unknown Northumberland gardener and originally called Fellside Hero. Marketed by Butler & Co., c1902. At least one crop growing in Southland, 1999.		
Majestic	1928 - 1949 + 1964 - 1992	77	1973
	A Findlay, c1911. Origin unsure, but suggested x wild spec. Very popular in UK around 1937 but gave way to King Edward. Also known as Findlay's Majestic. Pink Eyed Majestic may be the same.		
Up-To-Date	1928 - 1948	10.5	1944
	A Findlay, c1889 (Victoria x seedling of Old Blue Don) From same seed ball as British Queen. [Burton]. Has many synonyms. Often referred to and sold in NZ as Sutton(s) Supreme, Suttons or Supreme (ref. Ag. Bulletin 142).		
Iron Duke	1929 - 1960	33	1952
	Orig. Holland, as Paul Kruger 1896. Also known as General and President. Sometimes grown as Aberbrothok in the Nth Island.		

Variety	Years in certification	Peak area (ha)	Year
Northern Star	1929 - 1947	7	1920
	A Findlay, c1900. Gamekeeper, Britain's Best & Maori Chief are said to be selected from N. Star [J Beverley NZ J. of Ag.]		
Robin Adair	1929 - 1966	17	1941
	Possibly syn. *Cardinal,* by A Reid, UK, 1916 (ref. notes on other NZ grown varieties, List No. 4 of this work). Once a popular red skin with snow white flesh, c1930s/40s.		
Maori Chief (NZ)	1929 - 1947	7	1939
	NZ selection x *Northern Star.* Selector unknown. Had splashes of pink on fairly rough skin. Markings said to resemble a facial tattoo, but descriptions vary.		
North Downs	1929 - one year only	1	1930
	Unknown. No data found.		
Reading Russet	1929 - Did not qualify.		
	UK c1882, unknown origin.		
Shamrock II	1929 - Did not qualify.		
	UK c1890. Unknown, but recorded as reasonably resistant to blight and immune to potato wart disease.		
Abundance	1929 - Only 1 year. (No pure lines found in NZ)		
	J Clark, c1886. *(x Magnum Bonum x Fox's Seedling).* Marketed by Sutton & Sons. (Reported to have 95 synonyms in UK.) Sometimes known as *Sutton's Abundance.* Said to be very similar to *Golden Wonder and Langworthy*)		
Arran Banner	1930 - 1996	251	1953
	D Mackelvie, 1926, Isle of Arran, from (*Abundance x Flourball*). Has been one of the best earliest in NZ. Still sought after by many home gardeners.		
Arran Consul	1930 - 1988	27	1977
	D Mackelvie, 1925, Isle of Arran. Had been a good cropping variety, grown mostly in the North Island.		
British Queen	1930 - One year only.		
	A Findlay, 1894. Has some 90 or so synonyms [Salaman].		

Variety	Years in certification	Peak area (ha)	Year
Sharpe's Express	1930 - One year only.		
	Introduced by Mr Charles Sharpe of Sleaford, 1890-1901. Records of origin said to be lost.		
Eclipse	1930 - Did not qualify.		
	Raised by J Harris of Swansea, c1904. Texts suggest syn. Sir John Llewelyn.		
Witch Hill or (Whitchill)	1930 - Did not qualify.		
	A Brown, c1881, Said to be a seedling from Resistant Snowdrop, which was said to be the first to be declared immune to potato wart disease.		
Duke of York	1930 - Did not qualify.		
	W Sim, UK. Introduced by Daniels in 1891. (Early Primrose x King Kidney) Syn. mostly used, Midlothian Early. 36 synonyms are listed by Salaman.		
Early Rose	1930 - 1948	28	1934
	Albert Bresee, USA,1861. Seedling of Garnet Chili. Introduced into commerce 1867.		
Ally	1930 - 1933	2	1930
	D Mackelvie, UK, 1907. Originally named Arran Treasure. Marketed by Messrs. Poad & Co. about 1915 as Ally.		
Kerr's Pink	1930 - 1934 1955 - 1962	2	1930
	J Henry, Ottawa USA, 1907. (Smith's Early x Fortyfold). Originally called Henry's Seedling and Brae Seedling and reintroduced by Kerr in 1917 as Kerr's Pink. Had coarse pink skin.		
Arran Victory	1932 - One year only		
	D Mackelvie, c1912, from seed ball from unknown variety similar to Abundance, and introduced in 1918. A White Arran Victory, is a mutation of Arran Victory. It is an all white tuber with an occasional pink splash in an eye; not thought to have been grown in NZ. (Arran Victory is characteristically a round/oval tuber of a deep red/purple colour.)		

Variety	Years in certification	Peak area (ha)	Year
Jersey Bennes	1932 - 1996	45	1974
	Robert Fenn, c1879. Marketed by Dean. (Orig. called International Kidney; same as Benest, Besneth, Parisian, Jersey Royal and Boston Early from Jersey Isles.		
PT Class	1986 - +		
Sir J G Wilson	1934 - 1939	1	1936
	Origin and history unknown.		
Inverness Favourite	1934 - 1972	159	1940
	UK c1921, origin and history not known.		
American Wonder	1934 - 1937	2.8	1936
	Said to be of USA origin, c1876. Thought to be a sport from Early Rose. Also recorded as syn. Irish Cobbler; (Board of Agriculture, Scotland).		
Black Kidney	1935 - One year only.		
	UK. c1923. Syn. Shetland Black. UK, c1923. Syn. Shetland Black.		
Cliff's Kidney	1936 – 1994	34	1944
	Origin and history unknown, popular in NZ home gardens.		
PT Class	1985 - +		
Arran Cairn	1937 - 1940	1	1937
	D Mackelvie, c1930. Other details not known.		
Arran Pilot	1937 - 1957	13	1948
	D Mackelvie, c1930. From (May Queen x Pepo)		
Catriona	1939 - 1962	5	1945
	A Findlay. UK, c1920. Was popular around the 1940s. Still a few in NZ home gardens.		
Di Vernon	1940 - One year only.		
	A Findlay, UK, c1922. Origin unknown. Similar in appearance to Catriona		
Doon Early	1940 - 1953	11	1947
	McGill & Smith, UK, c1934. Popular in New Zealand home gardens around the 1940s.		
Dunbar Standard	1940 - 1956	41	1948
	Spence, UK, c1936.		

Variety	Years in certification	Peak area (ha)	Year
Katahdin	1940 - 1992	411	1963
	Clark & Stevenson, USA, 1932. Similar to Chippewa, USA. Same seed ball as Chippewa.		
PT Class	1984 - 1995		
Arran Scout	1941		
	D Mackelvie, UK, 1932. Other details unknown.		
Chippewa	1941 - 1961	286	1959
	Clark & Stevenson, USA, 1932. Similar to Katahdin above and from same seed ball as Katahdin.		
Sebago	1944 - 1996	762	1960
	Clark & Stevenson, USA, 1938. (Chippewa x Katahdin)		
PT Class	1980 - +		
Craig's Defiance	1945		
	UK, 1938. SSRPB.		
Glen Ilam (NZ)	1945 - 1988	141	1954
	RG Robinson, NZ, 1940; (Katahdin x Catriona). A good boiling variety, and still a few around in home gardens.		
Sequoia	1945		
	Garner, Smidt & Stevenson, USA, 1939. (Green Mountain x Katahdin).		
White Elephant	1948	4	1948
	(Ref. notes on other varieties grown in NZ, Part 3.)		
Ulster Cromlegh	1948 - One only. James Clarke, c1943, UK.		
Bonnie Ilam (NZ)	1948 - 1950	2.5	1950
	RG Robinson, NZ, 1940, Other details unknown.		
Gladstone	1949		
	UK, 1932.		
Royal Ilam (NZ)	1950		
	RG Robinson, NZ, 1940. Other details unknown.		
Ilam Hardy (NZ)	1951 - +	1684	1977
	RG Robinson, NZ. (Arran Pilot x Katahdin). Most popular in NZ up to recent years. Rua passed I. H. in popularity in 1987.		
PT Class	1982 -+	457	1989
Home Guard	1953 - 1962	1	1962
	Bred by McGill & Smith Ltd, UK; c1942. (Doon Pearl x Cumnock) a not so well known first early in Britain.		

Variety	Years in certification	Peak area (ha)	Year
Ulster Supreme	1953 - 1973	17	1964
	James Clarke, UK, 1946		
Constellation (NZ)	1954 - 1978	23	1964
	CT Williams of Kaiapoi, NZ, 1950. (Aucklander Short Top x Katahdin)		
Red King Edward	1954 - +	206	1974
	A selection by a Mr W Robinson, UK, from King Edward VII, c1916. Refer to notes on 'selected' varieties.		
PT Class	1983 - +	7	1988
Craig's Snow White	1956 - 1958	5	1957
	SSRPB 1947.		
Southern Cross (NZ)	1958 - 1977	68	1961
	T Penn, Christchurch. From a Katahdin x unknown variety. One of the better high solid varieties A long oval type used once for long French fries. Ideal for dried dice. Not grown commercially after 1970 or thereabout.		
Ulster Beacon	1958 - 1961	4	1960
	James Clarke, UK, 1954		
Aucklander Short Top	1959 - 1968	228	1960
(PVY Free) (NZ)	(Cleaned of virus Y by CRD, Lincoln, NZ.)		
Rua (NZ)	1960 - +	920	1976
	(CRD, NZ. Number 'two' in Maori numeral series.) (Katahdin x Harford) cross. Took over from I. H. about 1977 as most popular variety in NZ.		
PT Class	1982 - +	379	1988
Tahi (NZ)	1960 - 1986	108	1964
	(CRD, NZ. Number 'One' of Maori numeral series.) From (Sebago x Harford) cross.		
Seintje	1960 - one year only	4a	
	Holland, 1951, origin unknown. Possibly misspelling of Bintje.		

Variety	Years in certification	Peak area (ha)	Year
Onward	1960 - one year only.		
	No information found.		
Craig's Royal	1960 - 1962	9	1962
	UK. Bred by SSRPB, c1947		
Dunbar Rover	1961 - 1962	5a	1962
	Spence, c1936		
Superba	1962 - 1968	13	1964
	Could be UK. Superb, which is syn. Up-To-Date. Otherwise no information found.		
Dakota White (NZ)	1966 - 1967	4	1967
	A NZ selection from Red Dakota.		
Bungama	1966 - 1969	3	1968
	An Australian cultivar, 1960, NSW Dept Agr. (Moona x Katahdin). Australian var. grown in N. I. up to 1975 (Some suggest Bungama was found as a rogue in Kurrel.)		
Kurrel	1966 - 1980	14	1969
	R J Jessop, New England Agr Res Station (NEARS) 1962, Australia, c1960; x Sequoia parent.		
Rima (NZ)	1967 - 1992	30	1972
	CRD, NZ. Number 'five' in Maori numeral series. From Red Pontiac x Scottish hybrid x Australian hybrid.		
PT Class	1991 - 1995		
Kennebec	1967 - 1994	20	1989
	USA, Akeley, Stevenson & Schultz. c1948. (Chippewa x Katahdin) x USDA.		
PT Class	1988 - +	21	1991
Toru (NZ)	1969 - 1988	23	1975
	CRD, NZ. Number 'three' in Maori numeral series. Bred from Scottish x Australian hybrids.		
PT Class	1985 - 1996		
Embie (NZ)	1970 - 1976	2.3	1973
	NZ selection x Rua, by Mr Murray Baxter, seed grower of Waddington, Canterbury.		
Pentland Dell	1970 - 1995	5.2	1981
	SSRPB, UK, 1960. (Roslin Chania x Roslin Sasamu)		

Variety	Years in certification	Peak area (ha)	Year
Wha (NZ)	1971 - 1993	47.9	1977
	CRD, NZ. Number 'four' in Maori numeral series. Bred from Red Dakota x Scottish x Australian hybrids.		
PT Class	1989 - 1992		
Whitu (NZ)	1971 - 1992	48.6	1975
	CRD, NZ. Number 'seven' in Maori numeral series. Bred from Red Dakota x Scottish x Australian hybrids.		
PT Class	1989 - +		
Cherokee	1972 - 1973	0.5	1973
	USA, 1951, Peterson, Ellis, Akeley & Stevenson from USDA breeding material.		
Russet Burbank	1972 - 1975	5.2	1976
	USA. Recorded as being a 'netted' type chimera selected by Lou Sweet, a grower of Colorado, from the variety Burbank in 1914. Burbank is thought to have been raised by Luther Burbank from an Early Rose seedling in 1876. (Note: A fresh stock of R. B. is introduced as PT class, 1988.)		
Russet Norgold	1972 - 1973		
	USA, Johansen, 1964. X cross from breeding lines.		
Superior	1972 - 1973		
	USA, 1961, by Riemen from USDA breeding lines.		
Eldie (NZ)	1972 – 1977	2.8	1974
	NZ selection ex Kurrel, by Mr Leo D Rolston, seed grower of Norsewood.		
Ono (NZ)	1973 - 1980	17.0	1980
	CRD, NZ. Number 'six' in Maori numeral series. Cross from Australian and Mexican hybrids.		
Waru (NZ)	1973 - 1987	22.7	1979
	CRD, NZ; Number 'eight' in Maori numeral series. Cross from CRD Tahi and breeding material.		
Record	1973 - 1981	8.0	1979
	Holland c1925, RJ de Vroome (Trenctria x Energie) Reported to be a good solid variety suitable for mechanical harvesting, but did not perform well in New Zealand. Popular in UK and Holland for processing crisps 1970-80.		
Maris Court	1976 - 1987	2.2	1978
	PBI, UK, 1972. (Maris Piper x Dr. Macintosh)		

Variety	Years in certification	Peak area (ha)	Year
Maris Anchor	1977 - 1996	18.8	1986
	PBI, UK, 1971, Arran Pilot x X16/22.		
PT Class	1986 - +		
Minred	1977 - one year only.		
	Origin: Regents of University of Minnesota, USA. No other details found.		
Pentland Meteor	1978 - one year only.		
	SSRPBS, UK, 1970.		
Iwa (NZ)	1978 - 1993	140.3	1984
	CRD, NZ. Number 'nine' inMaori numeral series; 1976. 119-224 x Sebago x Harford)		
PT Class	1983 - +	68.0	1987
Croft	1982 - 1993		
	SPBS, 1974. (Roslin Rivera x Pentland Dell.)		
PT Class	1991 - 1993		
Bintje	1981 - one year only		
	Holland, c1910. (Munstersen x Fransen) by de Vries.		
PT Class	A further trial of Bintje was entered in 1998 with new PT seed stock.		
Tekau (NZ)	1982 - 1993		
	CRD, NZ. Number 'ten' in Maori numeral series. From CRD breeding material.		
PT Class	1985 - 1988		
Maris Bard	1983 - 1988		
	PBI, UK, 1972. (Ulster Prince x Y 15/139)		
Desiree	1987 - 1992	96.65	1991
	Holland, c1962 de ZPC.(Urgenta x Depesche)		
PT Class	1985 - +		
Foxton	1988 - 1996		
	PBI, 1982, UK, (Irene x Maris Piper)		
Rocket	1991 - +		
	PBI, 1987, UK, (Breeding line cross). Res. to PCN (Ro 1)		
PT Class	1996 - +		
Torridon	1991 - one year only. UK, 1988		

Variety	Years in certification	Peak area (ha)	Year
Navan	1995 - 1996		
	UK, Northern Ireland Plant Breeding Station, 1985. (S62/47/1 x Maris Piper). Round/oval tuber, white flesh & tan skin. Perhaps a better home garden potato than a commercial one.		
Saxon	1997		
	Oval, white skin, cream flesh. (Kingston x Desiree) PBI Cambridge		
Donald	1998 - first entered. (Amera x breeding lines) Scotland.		

List 2

The varieties listed below were introduced into the certification system in the first instance as PT or open classification.

Some of the varieties listed in this section are no longer in commercial production at the time of publication; some may come on the market again at a later date. The varieties listed in this section are, or may have been at some time, subject to Plant Variety Rights rules with respect to production in New Zealand or another country.

Abbreviations in following list

EPL = Eurogrow Potatoes Ltd

BL = Breeding line or lines. Lines of special cultivars kept for some specific attribute, but not suitable for commercial production and kept solely for breeding purposes. These cultivars, or lines, are usually assigned numbers and/or letters.

CPB = Caithness Potato Breeders Ltd, Scotland

CRD* = Crop Research Division of the Dept of Scientific & Industrial Research

C&FR = NZ Institute for Crop & Food Research Limited (formerly Crop Research Division)

PT = PT®™ Pathogen Tested Seed Advisory Committee

ZPC = Dutch potato breeding company

* The varieties marked CRD are from crosses made by that organisation before the change of name.

In 1989-90 a Section 3 was introduced to accommodate nine lines introduced by Eurogrow Potatoes. This became the Open Class in 1992-93.

Variety	Origin	Years certified	Notes
Kaituna (NZ)	PT	1986 - 1987	
	Short oval, white skin & flesh. (CRD NZ)		
Huron	PT	1987 - 1988	
	Round, tan skin & white flesh. USA, 1958 (Sebago x Hindenburg)		

Variety	Origin	Years certified	Notes
Russet Burbank	PT	1988 - +	
	White flesh, russet skin. USA, 1914. Selected from Burbank. Refer also to Russet Burbank above. (There are several strains or selections being grown mainly for commercial use.)		
Agria	EPL	1989 -	
	White/yellow skin, yellow flesh. Germany, 1985. (Quarto x Semlo)		
Concorde	EPL	1989 - 1995	
	White skin, pale yellow flesh. Holland, 1985. Parents, breeding line cross.		
Crebella	EPL	1989 - +	
	White/cream skin, pale yellow flesh. By J A Crebas, Holland, 1985 (Alcmaria x BL)		
Darwina	EPL	1989 only	
	White skin, cream flesh. J Oldenburger, 1985, Holland, (Marijke x BL)		
Delcora	EPL	1989 - 1998	
	Red skin, creamy flesh, 1985 Holland (Desiree x BL)		
Draga	EPL	1989 - +	
	White/yellow skin, creamy flesh. 1985, Holland. From breeding line cross.		
Fianna	EPL	1989 - +	
	White/yellow skin, creamy flesh. Holland, 1985. Parents breeding line cross.		
Morene	EPL	1989 - 1994	
	White/yellow skin, creamy flesh. Holland, S Brunia, 1983 (Renova x BL)		
Spunta	EPL	1989 - +	
	Yellow skin, creamy flesh. Holland J Oldenburger, 1976 (Bea x BL)		
Liseta	EPL	1990 - +	
	Yellow skin, creamy flesh. Holland (Spunta x BL)		
Mondial	EPL	1990 - +	
	Yellow skin, pale yellow flesh. Holland (Spunta x BL)		
Nadine	PT	1990 - +	
	Round/oval, white skin, white flesh. CPB, UK, 1987 (*S. vernei* polycross)		

Variety	Origin	Years certified	Notes
Van Gogh	PT	1990 - +	
	Yellow skin, pale yellow flesh. ZPC, Holland (Gloria x BL)		
Yvonne	PT	1991 - 1993	
	Oval, yellow skin & yellow flesh. ZPC, Holland (Renska x BL)		
Atlantic	PT	1991 - 1997.	
	Brown skin, pale cream flesh. USA, 1976 (Wauseon x USDA B5141-6)		
Bildtstar	PT	1991 - +	
	Round, red skin, white flesh. PC, Holland (Winda x Saturna)		
Frisia	PT	1991 - +	
	Round/oval yellow skin, cream flesh. ZPC, Holland (Breeding lines cross.)		
Concurrent	PT	1992 - 1994	
	Oval, yellow skin, light yellow flesh. ZPC, Holland (Estima x Sinaeda)		
Monalisa	PT	1992 only.	
	Oval, yellow skin, light yellow flesh. Holland (Bierma A 1287 x Colmo)		
Nooksak	PT	1992 - +	
	Oval, tan skin & white flesh. Hayman & Holland, USA, 1973. (Kennebec x BL)		
Kaimai	PT	1992 - +	
	Round, white skin, light yellow flesh. C&FR NZ (Rua x V394)		
Obelix	PT	1992 - 1994	
	Oval, yellow skin, light yellow flesh. Holland, 1989 (Ostara x Renska)		
Shepody	PT	1992 - +	
	Long, brown skin, white flesh. Canadian Dept of Agr., Canada, 1983 (Bake-King x BM)		
Stroma	PT	1992 - +	
	Long oval, red skin & yellow flesh. CPB, Scotland. (Seedling from *S. vernei* x Desiree)		
Gladiator	PT	1992 - 1995	
	Oval, white skin, white flesh. C&FR, NZ (BL Cross)		

Variety	Origin	Years certified	Notes
Asterix	PT	1993 - 1995	
	Long/oval, red skin & pale lemon flesh. ZPC Holland (Cardinal x BL)		
Karaka	PT	1993 - +	
	R/oval, white skin, white flesh. C&FR, NZ (002/9 x V394)		
Red Rascal	PT	1993 - +	
	Round/flat, red skin, white flesh. C&FR, NZ (Desiree x Tekau)		
Kiwitea	PT	1993 - +	
	Round, white skin, white flesh. C&FR, NZ (002/9 x D42/8)		
Amadeus	PT	1993 - 1994	
	Red skin, yellow flesh. ZPC, Holland (Diana x Anosta)		
Hulda	PT	1993-1994	
	Round, tan skin & white flesh. Sweden (Breeding lines)		
Matilda	PT	1993 - +	
	Long oval, tan skin with off-white flesh. Sweden (Bintje x P40, ex *S. demissum* x Fruhperle x Gabriela)		
Cardinal	PT	1993 - 1997	
	Long, red skin, cream flesh. Holland (Breeding lines cross)		
Premiere	PT	1993 - 1994	
	(Civa x Provita) 1976. Short oval, pale yellow skin & flesh. Holland.		
Ranger Russet	PT	1993 - +	
	Long pinky/brown russet, white flesh. (Entered in NZ as Ranger for French-fry production.) Pavek, USDAF; Selected 1977 from (Butte x A6595-3)		
Fronika	PT	1994 - +	
	Round/oval, tan skin, light yellow flesh. ZPC, Holland, 1985 (ZPC Edzina x ZPC 63-103)		
Diamant	PT	1994 - 1998	
	Oval, cream rough skin, yellow flesh. F Brands, Holland.		
White Delight	PT	1994 - +	
	C&FR, NZ (002/9 x Maris Piper). Round oval, white skin & flesh.		
Felsina	EPL	1994 - 1998	
	Long oval, cream skin & flesh x Holland		

Variety	Origin	Years certified	Notes
Robinta	EPL	1994 - +	
	(Rubina x BL) Short oval, pink skin with white flesh. Holland.		
Bolesta	EPL	1994 - +	
	(Agria x BL) Round/Oval, brown skin, pale yellow flesh. Germany.		
Bright	PT	1995 - 1998	
	Cebeco Zaden, Holland (Renova x Cebeco 64-197-16.). Oval, off white skin and white flesh.		
Driver	PT	1995 - +	
	Round oval, white skin & flesh. C&FR, NZ (x Breeding lines)		
Ukuma	PT	1995 - 1997	
	Yellow skin, pale yellow flesh. ZPC, Holland (Marijke x Sirtema)		
Pacific (ex Crop 5)	PT	1996 - +	
	Round/short oval. Pale yellow flesh. C&FR, NZ (Tekau x V394)		
Swift	PT	1997 - +	
	Oval, creamy white skin & flesh. J Dunnett, CPB (Stroma x Breeding line)		
Dawn (ex Crop 10)	PT	1997 - +	
	Round oval, white skin, white flesh. C&FR, NZ (Rosa x 1062-47)		
Hertha	EPL	1998 only.	
	Round oval, yellow skin, cream flesh. from Holland (Dijkhuis 61-133-3 x Könst 62-374)		
Heather	PT	1998 - +	
	Oval, blue/purple skin, white flesh. CPB, Scotland (Breeding material x *S. vernei*)		
Fraser (ex Crop 6)	PT	1998 - + Round/oval, white skin & flesh.	
	C&FR NZ (676.34 x Whitu)		
Lady Rosetta	PT	1998 - +	
	Short oval, red skin, yellow flesh. x Holland 1985, C Meijer (Cardinal x BL)		
Valor	PT	1998 - +	
	Round oval, white skin, cream flesh. J Dunnett, CPB, Scotland (Cara x breeding lines ex *S. vernei*)		

Variety	Origin	Years certified	Notes
Winston	PT	1998 - +	
	Oval, white skin, pale yellow flesh. J Dunnett, 1981, CPB, Scotland (Kismet x DXMP 70).		
Snowden	PT	1998 - +	
	Oval, white skin & flesh. University of Wisconsin, USA (Wischip x BL)		
Red Ruby	EPL	1998 - +	
	Oval, red skin and light yellow flesh. Selected by A Vollebreght, NZ (sport from Delcora).		
Summit (ex Crop 11)	PT	1999 - +	
	Round Oval, white skin & flesh. C&FR, NZ (x Breeding lines).		
Moonlight (ex Crop 13)	PT	1999 - +	
	Oval white skin & flesh. C&FR, NZ (x Breeding lines)		
Agave	PT	2000	
Albatross	"	"	
Cantate		"	"
Harmony	"	"	
Crop 14	"	"	C&FR, NZ
Karlena (Adretta x BL)	"	"	-
Marco Polo	"	"	-
Pazific ex Germany	"	"	"
Casanover	"	"	x Holland

Some of the varieties listed below may have been discarded, or entered into certification, and/or a Plant Variety Right may have been sought at some later date.

Varieties brought in purely for breeding or scientific work are not included.

Brodick	SCRI, UK, 1990. BL cross.
Forta	(Panda x BLBP 8528/72) Uniplanta Saatzucht Germany
Frontier Russet	USA, 1990. Selected from breeding line cross 1976. Aberdeen, Idaho. Imported for French-fry production
Hilite Russet	USA, 1987. Off-type found in Butte. Imported specially for French-fry production
Maxine	PT J Dunnett (Antar x 93.2) Caithness Potatoes Ltd. Scotland
Novita	
Pepo	Saka-Ragis; Germany
Proloog	R Leijstra
Remarka	E Kramer
Glenna	
Uno	Saka-Ragis; Germany
Velox	Saka-Ragis; Germany
Azur	Uniplanta Saatzucht, Germany
Lady Christl	C. Meijer B.V., Holland
Cycloon	"
Victoria	B.V. De ZPC, Holland
Red Star	B.V. De ZPC, Holland
Accord	C. Meijer B.V., Holland
Lady Claire	"
Lady Olympia	"
Pike	Cornell University, USA
Andover	"
Norvalley	NDSU Research Foundation, USA

PART TWO

List 3 includes varieties purposefully 'bred' by cross pollination in New Zealand, and List 4 includes varieties 'selected' from potato crops growing in New Zealand. The date given in the list is when that cultivar first appeared in the certification scheme. The actual cross would have been made about 7 years earlier.

List 3

New Zealand-bred

The varieties listed below are products from crosses made in New Zealand.

(Variety historic notes are in the main certification history list, List 1 in Part 1.)

Glen Ilam *	R G Robinson (Christchurch)	1945
Bonnie Ilam	"	1948
Royal Ilam	"	1950
Ilam Hardy	"	1951
Constellation	C T Williams (Kaiapoi)	1954
Southern Cross	T Penn (Christchurch)	1958
Tahi **	Crop Research Division, DSIR	1961
Rua	"	1961
Dakota White	"	1966
Rima	"	1967
Toru	"	1969
Whitu	"	1971
Wha	"	1971
Ono	"	1973
Waru	"	1974
Sovereign ***	not certified	1978
Iwa	"	1979
Tekau	"	1982
Kaituna	"	1986
Kaipara	"	1988
Gladiator	C&FR	1991
Kaimai	"	1991

Karaka	"	1991
Kiwitea	"	1992
Red Rascal	"	1992
White Delight	"	1994
Driver	"	1995
Pacific	"	1996
Dawn	"	1997
Fraser (x Crop 6)	"	1998
Summit (x Crop 11)	"	1999
Moonlight (x Crop 13"		1999

Notes:

* The name 'Ilam', is from the road in Christchurch in which Mr Robinson lived. Many of the crosses were actually made by Mr Des Brading whilst in the employment of R G Robinson & Co. Ltd. Mr Brading started with R G Robinson as his tutor at the age of 16, and soon became known among New Zealand's plant breeders of the 1940s and 50s.

** This organisation is now known as the New Zealand Institute for Crop & Food Research Limited. Originally, the Agronomy Division of the Department of Scientific & Industrial Research was constructively involved in the agronomy of the expanding potato industry and the new potato crop certification programmes. In 1950, the Wheat Research Institute joined with the Agronomy Division of the DSIR, and the new Crop Research Division of the DSIR was born.

The names, Tahi, Rua, Toru, Wha, Ono, Whitu, Rima, Waru and Iwa, are the "Maori numeral" varieties (1 to 9), crosses for which were made during the leadership of Mr Malcolm Driver. Other New Zealand potato plant breeders and staff include the late Mrs Dawn Gallagher and the late Mr Henry Findon employed by the then Potato Section of the 'CRD' (Crop Research Division of the New Zealand Department of Scientific & Industrial Research). Malcolm Driver was the Leader of the Potato Research Section of the CRD from 1947 to 1974. Successive plant breeders at the centre included Dr Anoop Bedi (1974 to 1981) and Mr Russell Genet (1981 to the present) who is continuing in the role of potato plant breeder. Mr John Anderson is currently a potato plant breeder based at the Pukekohe Research Centre of Crop & Food Research.

*** Sovereign

This variety was considered to be too yellow to fit into the market at that time. It was, though, the best variety that was resistant to potato cyst nematode, which was a worry at the time. Even 10 years on, the new yellow flesh varieties seemed to have only a limited appeal. By 1997 a general swing away from the coloured varieties was becoming more and more apparent, except for in the export trade.

List 4

Varieties 'selected' in New Zealand from other established varieties

Aucklander Short-Top and Aucklander Tall-Top

(Sometimes referred to in the 1929 New Zealand Journal of Agriculture as New Zealand Sutton's Supreme)

Selected from Sutton's Supreme by Messrs A J Rich & M Laws of (Kaiapoi) about 1908. The two men noticed that there were two distinct variants, most commonly known in those days as 'rogues', growing in the Sutton's Supreme crop at the Coutt's Island farm near Christchurch. The two were isolated over a period of time and given the names Aucklander Short Top in c1908 and Aucklander Tall Top in c1913. Both entered certification when the programme started in 1928. (The two were lovingly referred to as the Aucklanders.)

The Aucklander Short Top in particular remained in the certification programme until 1983. It was the best processing potato in its day and was grown extensively throughout Canterbury, with perhaps a greater concentration around Waimate and Studholme. This variety, with its inherited extra high dry matter, was the best variety for potato flake and dried diced products. This convenience product was used extensively for feeding the troops in the Pacific war theatre, and later to feed workers on the Deep South project. (One can only speculate on what would have happened to a shipload of dehydrated potato flake and dice if the ship were sunk on its way to Britain or the Pacific!) Its host crop, Sutton's Supreme, was also an excellent all round culinary performer when potatoes formed a major part of the staple diets of New Zealand families in the late 1800s and early 1900s. Suttons, as they were lovingly referred to, did not stay around long enough to become a nationally certified crop.

Aucklander Short Top is, to say the least, a part of New Zealand history, performing gallant service in the national war effort. (A pity only man and animals get the medals!) Aucklander Short Top is planted annually with other varieties in Crop & Food Research's potato cultivar museum collection.

Note: A 'Virus Y Free' strain of Aucklander Short Top was entered for certification by the Crop Research Division of the DSIR (refer note above re this body) in 1959. Also note, the variety known in New Zealand as Sutton's Supreme, or just as Suttons is fairly well established to have been Messrs Sutton & Son's Supreme. It was bred by J Clark of Christchurch - UK, c1880, and marketed by the English seed firm of Sutton & Son.
Note: The presence of 'off types', 'rogues' or 'variants' was quite common in crops in the early potato cropping days. It was the presence of varietal contamination in potato crops that spurred the industry and the then Agriculture Department in Britain to establish the certification scheme as had been done in some other countries to present and maintain as pure a crop as was humanly possible.

It is also interesting to note that there were several strains of the originally selected Aucklander Short Top (refer A D Thomson, writing in the New Zealand Journal of Science & Technology, 1956). Three of these strains out-yielded the others considerably in experiments conducted by the then Department of Agriculture. Appointed officers of that department, in those days, took a dedicated interest in the development of the potato industry and

looked after trial plots at the various experimental stations spread throughout the country and on individual farms.

The highest yielding of the three selected strains was called Redmond: the other two were referred to as Oakley and Jarman. It was from these three strains that the virus Y free strain came (listed as certified in the list in Part 1). A heat treatment, recently developed, was used to eliminate the potato virus Y.

Britain's Best, GameKeeper and Maori Chief

Selected from Northern Star, UK, 1900

These New Zealand selections are so close to Northern Star, according to Hadfield (New Zealand Department of Agriculture Bulletin No. 142. Oct. 1929), that it is difficult to tell the three apart, but at the time the selector must have been able to see a difference. There is the possibility that the Southern Hemisphere soil types, latitude, daylight length and light strength were influential in creating a difference at the time. J Beverley, writing about the same time in a paper referred to by Hadfield, says that Gamekeeper is of New Zealand origin and is a selection from Northern Star. Another New Zealand variety, Maori Chief, is also stated to be a selection from Northern Star, and appears similar in all respects except that the tubers are white and splashed with purple.

Embie

Selected from Rua, around 1970, by Mr M Baxter, a commercial seed grower of Waddington in Canterbury.

Eldie

Selected from Kurrel, about 1973, by Mr LD Rolston, a commercial seed grower of Norsewood.

Knowler

Selected by Mr Henry Knowler around 1920, from Robin Adair (refer R Adair below). This selection was named by Mr T D Lennie, a seedsman of Christchurch.

New Era

Said to be a bolter type from Evergood (A Findlay, 1900). Originally Eldorado. The selected plants also have been known as Perfection or Perfection New Era. Some say the different names could have applied to variations selected later from the original Evergood. These two selections would not be like the bolters seen in present Ilam Hardy crops. They would not have got very far had they been at all like them.

Again, we see here that a change of hemisphere may be a factor in the slight changes in characteristics, enough to identify a consistent difference in several plants year to year. There may have been a slight difference that may never have been noticed in the crops remaining in Great Britain, resulting in a new variety evolving from a “selection”.

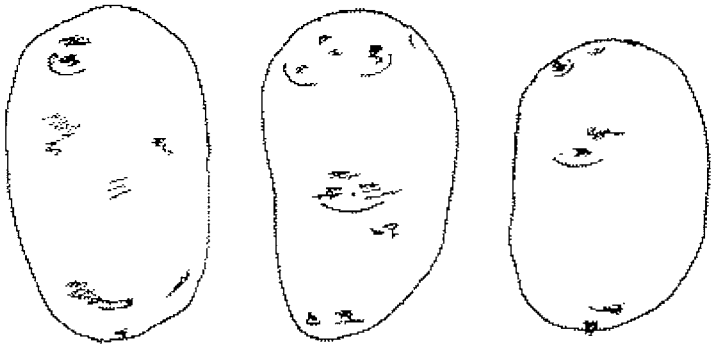
Robin Adair or Cardinal?*

This variety was grown at Adair in South Canterbury as Cardinal (J W Hadfield) by a Mr Shepherd around 1915-20. It was later renamed Robin Adair by Mr J H Nimmo of Nimmo & Blair Ltd of Dunedin, some time in the 1920s or possibly earlier (refer also to Knowler above).

(*Note: It has been said that the name Robin Adair may have been given to Cardinal (Great Britain, c1916) and not a selection. British authorities describe Cardinal as being extremely close in description, but the Cardinal in Britain had red-purple flowers, whereas that growing on the Adair farm had a creamy white flower. This suggests that the variety, or names of some varieties brought out early in the century, was either not known or was not correct. (There was increasing urgency, or should we say a 'spirit of competition', to establish tradable produce, and it would be no surprise to find some confusion or mistakes.) Judging by the greatly differing flower colours, it is more than likely that the one at Adair was not actually Cardinal, even though the tubers and foliage were very similar. This Cardinal is obviously not the much later variety Cardinal (Holland 1975) entered for certification in 1994. (Refer list of certified varieties.))

Hadfield, in a Dept of Agriculture Bulletin (No. 42, 1929), describes the tubers of Robin Adair as being generally smooth, but sometimes netted. When netted, the tuber is shorter and more blunt at the rose end. This could well suggest the presence of a small instability factor, or perhaps a varietal mix; but then again, it may have been due to soil type or some other environmental factor. This latter theory may be close, as Mr Henry Knowler made a more elongated and smooth-skinned selection from a Southland crop of Robin Adair. It was named Knowler by a Christchurch seedsman, Mr Lennie. Knowler remained constant throughout its life, so in all probability this was a distinct variety, only recognisable when grown in a different environment. Southland soils are not at all like those of Adair in Canterbury. (It has been noted that some varieties have finer cleaner skins when grown in the cooler soils of Southland than when grown in the warmer Canterbury river-deposited and shallower stony soils, which can often result in darker and coarser skins.)

An illustration in a 1928 issue of the New Zealand Journal of Agriculture shows three distinct shapes under the heading Robin Adair: a kidney shape with a fairly fine skin; a shorter blocky shape with a netted skin; and a longer, more evenly shaped and cleaner looking tuber of the selection Knowler. It is not uncommon for differences such as those illustrated in the Journal of Agriculture to show from time to time. Ilam Hardy can, for example, usually be consistently smooth, white, round and 'plump' when grown in Southland or Matamata, but misshapen and dark when grown in Canterbury. (Refer also to notes elsewhere on Rua.)



Left: Knowler, a longer tuber selected from Robin Adair in Canterbury and grown in Southland where it retained this shape.

Centre: Robin Adair. Smooth skinned slightly kidney shaped from Southland heavier clay/silt soil.

Right: Robin Adair. Shorter oval rough skinned or 'netted' tuber from Canterbury soils.

It has been said that there is no standard template for potato shape that is applicable to an individual variety. Any number of variations in soil types and conditions may have some influence, as does the district, in the final shape of a particular variety. They can, however, be divided into six distinct common shapes when compared with one another and descriptions may be used in a 'by comparison' method. For example, we can say that there are six distinct shapes: round, oval, short oval, long oval, kidney and the less common cylindrical shape, as in Ladies Finger and sometimes Urenika, which are generally 'long oval'. Some have described these as more tubular in shape.

PART THREE

Advent of a trading standard and certification system

The Industrial Revolution affected not only the manufacturing and working environment. The maker and user epoch also accelerated the demand for goods and services from the borders of distant countries eager to exchange wares for cash or goods.

According to Richard Robinson's "Business History of the World", trade restrictions by way of special agreements and tariffs were first seen in the year 992 AD when Constantinople granted Venetian goods lower tariffs than goods from other countries. A duty of 10% was payable by other countries.

After the 'hard' goods came perishables and foodstuffs. It is hard to find references to grain and meat imports and exports prior to 1316 when England became afraid that if the price of home-grown grain got too high through shortages, imported grain would dampen the urge of the locals to produce. There was fear that imported grain would be preferred to the local product, thus stifling the building of an agricultural industry. The 'Corn Laws' introduced by Parliament in 1361 prohibited export of home-grown grain and stated that imported grain must be the same price as home-grown. The philosophy was to block imports when the local price was high to make sure there was a stable supply of grain from English farmers, thus avoiding dependence on foreign supplies. The laws were repealed in 1846 and trade became open to all.

With the open door came the need to establish a quality control system to ensure that no below-standard produce was dumped on English markets. Thus, a trade standard was agreed to by the various grain production industries and trading-houses, and a body known as the Bureau Veritas was set up around 1850-60 on behalf of the Corn Exchange of London. This agency was to monitor standards, giving importers confidence that imported grain and seeds were of the agreed standard.

In the main exporting countries, small businesses sprang up as agencies for the Bureau, employing 'certification officers' who would inspect the produce and issue certificates indicating the grade requested.

In 1860, Claud Ferrier from England became the first agent for the Bureau Veritas in New Zealand to certify the export of grains and fruit to Australia in the first instance. The agency, under the name of Claud Ferrier, operated in Lyttelton for 8 months of the year, and for 4 months in Sydney for fruit exports, becoming permanent around 1865, by which time the name Ferrier & Co. had become a familiar 'password' throughout the grain and produce industry.

By the turn of the century, there were port graders in the main production areas and shipping points around the world, either as employees of grading

companies (the largest New Zealand company was Ferrier & Co. at the port of Lyttelton) or as individuals.

The original Ferrier & Co., still at Lyttelton, changed ownership to Jack E Wilson around 1925-28, followed by Albert Hewston in 1939. Peter Hickman, who had joined the company to learn the trade in 1945, later bought the company in partnership with Pat Rhind.

Potatoes and small seeds formed the greater part of the grading work to secure certification of export and local product for export all over the world.

Peter Hickman eventually bought out Pat Rhind's share when Pat retired to Picton in 1985. Hickman then worked on with his two sons until the company was bought by SGS NZ LTD (Société Générale de Surveillance) along with that of Gary de Joux Ltd of Timaru in 1995.

SGS have offices all over the world, offering a general surveillance service to manufacturing houses eager to see that their product meets a consistent standard and specification.

In 1973, the port graders (now referred to as produce graders) were contracted to the Potato Board to work with the seed-potato tuber inspection service. In 1988, when the Potato Board assumed the responsibility of the entire potato certification service, the produce graders found themselves carrying out both field inspections and the inspection of shed-graded tubers.

Today, the field and tuber inspection service is the responsibility of the New Zealand Seed Potato Certification Authority with the Seed Certification Bureau (a section of the Ministry of Agriculture and Fisheries) responsible for the administration of certified seed of all crops seeking certification for various purposes.

Crops entered into the various programmes

Table 1: Area and no. of varieties in the three programmes by year

Year	No. of varieties	'Group' class area	PT class area	No. of varieties	'Open' class area	No. of varieties
1928	11	190				
1929	15	138				
1930	17	198				
1931	24	342				
1932	15	298				
1933	20	260				
1934	20	412				
1935	19	558				
1936	20	627				
1937	21	1003				
1938	22	1162				
1939	22	1268				
1940	20	1046				
1941	22	921				
1942	21	642				
1943	20	931				
1944	23	1569				
1945	25	1521				
1946	27	2232				
1947	28	2117				
1948	25	2364				
1849	25	2159				
1950	23	2181				
1951	22	2159				
1952	21	1563				
1953	20	2118				
1954	22	3317				
1955	23	3629				
1956	21	2219				
1957	21	2264				
1958	22	2319				
1959	23	2693				

Year	No. of varieties	'Group' class area	PT class area	No. of varieties	'Open' class area	No. of varieties
1960	23	2814				
1961	27	3346				
1962	31	2825				
1963	26	3204				
1964	26	3466				
1965	24	3893				
1966	23	2773				
1967	26	2174				
1968	29	2562				
1969	24	3094				
1970	24	3092				
1971	26	2101				
1972	28	2334				
1973	27	2467				
1974	34	2200				
1975	33	2269				
1976	32	2886				
1977	34	3399				
1978	32	2367				
1979	32	2227				
1980	28	2001				
1981	28	1898	0.8	1		
1982	28	1747	5	1		
1983	30	1875	23	3		
1984	28	2017	86	5		
1985	29	1800	319	8		
1986	29	1345	599	11		
1987	29	971	838	14		
1988	28	759	853	15		
1989	25	694	928	16		
1990	25	628	970	16	60	10
1991	20	530	944	18	95	12
1992	22	431	917	24	187	10
1993	16	308	877	32	172	9
1994	12	188	879	39	191	10
1995	12	119	882	42	247	12

Year	No. of varieties	'Group' class area	PT class area	No. of varieties	'Open' class area	No. of varieties
1996	10	107	1058	39	337	12
1997	4	71	981	39	301	12
1998	6	55	800	36	285	12
1999	6	60	916	42	306	11
2000	3	50	969	50	288	11

NB. The dates shown are the year of entry. In New Zealand the crop would be certified for sale one year, for planting in the following year, i.e. a crop entered in 1999 would be for sale and planting in the year 2000.
(Note: Larger variations in the area of crop entered were due to seasonal factors and perceived demand.)

Varieties grown in New Zealand

Varietal names are shown as the name used within the district where they were grown, or said to have been grown. This list is presented with errors and omissions accepted. It was compiled with information from many growers and others.

Abbreviations in following list

Aka = Also known as

EPL = Eurogrow Potatoes Ltd

c = Entered into the NZ Certification system

n = Applied for Plant Variety Rights, but not in commercial system by publication

z = Grown in New Zealand at some time but not entered for certification

NZ = Bred in New Zealand

NZN = Native varieties grown here for 'a long time', introduced by early settlers.

NZS = Selected in New Zealand from another variety

TPS = True Potato Seed of New Zealand origin

PT = Pathogen Tested Certified Seed. PT is a registered trade mark.

Name of variety	Status in NZ	Dates show years in Certification System and where bred or selected in New Zealand
Aberbrothok	z	
Abundance	c	1929 did not qualify
Agria EPL	c	1989 - +
Ally	c	1930 - 1933
American Wonder	c	1934 - 1937
Amadeus PT	c	1993 - 1994
Arran Banner	c	1930 - 1996
Arran Cairn	c	1937 - 1940
Arran Chief	c	1928 - 1979
Arran Consul	c	1930 - 1988
Arran Pilot	c	1937 - 1957
Arran Scout	c	1941 one year only
Arran Victory	c	1932 one year only
Ashleaf Kidney	z	
Asterix PT	c	1993 - 1995
Atlantic PT	c	1991 - 1997

Name of variety	Status in NZ	Dates show years in Certification System and where bred or selected in New Zealand
Aucklander Short Top	c	1928 - 1983 NZS
Aucklander Short Top (PVY Free)	c	1959 - 1968 NZS
Aucklander Tall Top	c	1928 - 1968 NZS
Azur	n	
Bildtstar PT	c	1991 - +
Bintje	c	1981 one year only
Bintje PT	c	1988 - +
Bismark	z	
Bison	z	
Black Kidney	c	1935 one year only
Blue Derwent	z	
Blue Skerries	z	Same as Sk. blue.
Bolesta EPL	c	1994 - +
Bonnie Ilam	c	1950 - 1950
Bresee's Prolific	c	1928 - 1935
Bright PT	c	1995 - 1998
Britain's Best	z	UK
British Queen	c	1930 did not qualify
British Queen	z	
Brodick	n	
Brown River	z	
Brownell's Beauty	c	1928 - 1929
Brownell's (Tasmanian)	z	(could be same as above)
Bungama	c	1966 - 1969
Burbank	z	
Cardinal PT	c	1993 - 1997
Cardinal (c 1920-30)	z	
Carmen	z	
Catriona	c	1939 - 1962
Chas Downing	z	
Cherokee	c	1972 - 1974
Chippewa	c	1941 - 1961
Cliff's Kidney	c	1936 - 1994
Cliff's Kidney PT	c	1985 - +
Come-To-Stay	z	
Commonwealth	z	
Concorde EPL	c	1989 - 1995

Name of variety	Status in NZ	Dates show years in Certification System and where bred or selected in New Zealand
Concurrent PT	c	1992 - 1994
Congo Blue	z	
Constellation	c	1954 - 1978
Craig's Defiance	c	1945 one year only
Craig's Royal	c	1960 - 1962
Craig's Snow White	c	1956 - 1958
Craigsbrae Surprise	z	
Crebella EPL	c	1989 - +
Croft	c	1982 - 1993
Croft PT	c	1991 - 1993
Cycloon	n	
Dakota Red	c	1928 - 1986
Dakota White	c	1966 - 1967
Dargill Early	z	
Darwina EPL	c	1989 one year only
Dawn PT	c	1997 - + NZ
Delcora EPL	c	1989 - 1998
Desiree	c	1987 - 1992
Desiree PT	c	1985 - +
Di Vernon	c	1940 one year only
Diamant PT	c	1994 - 1998
Donald	c	1998 - +
Doon Early	c	1940 - 1953
Draga EPL	c	1989 - +
Driver PT	c	1995 - +
Duke of York	c	1930 did not qualify
Dunbar Rover	c	1961 - 1963
Dunbar Standard	c	1940 - 1956
Early Favourite	z	
Early Ohio	z	
Early Puritan	z	
Early Regent	c	1928 - 1933
Early Regent (bolter type)	c	1930 - 1940
Early Rose	c	1930 - 1948
Early Vermont	z	
Eclipse	c	1930 did not qualify
Edzell Blue	z	

Name of variety	Status in NZ	Dates show years in Certification System and where bred or selected in New Zealand
Eldie	c	1972 - 1977 NZS
Embie	c	1970 - 1976 NZS
Endurance	c	1928 - 1931
Endurance	z	
Epicure	c	1928 - 1988
Epicure PT	c	1985 - 1993
Factor	z	
Felsina EPL	c	1994 - 1998
Fianna EPL	c	1989 - +
Field-Marshal	c	1928 - 1932
Forta	n	
Foxton	c	1988 - 1996
Fraser PT	c	1998 - + NZ
Frisia PT	c	1991 - +
Fronika PT	c	1994 - +
Frontier Russet	n	USA
Game Keeper	z	
Gladiator PT	c	1992 - 1995
Gladstone	c	1949 one year only
Glen Ilam	c	1945 - 1988 NZ
Glenna	n	
Gold Coin	z	
Golden Wonder	c	1928 - 1931
Great Scot	c	1928 - 1939
Green Mountain	z	
Guyra Blue	z	
Heather PT	c	1998 - +
Herald	z	
Hertha EPL	c	1998 one year only
Hilite Russet	n	
Home Guard	c	1953 - 1962
Hulda PT	c	1993 - 1994
Huron PT	c	1987 - 1988
Ilam Hardy PT	c	1982 - + NZ
Ilam Hardy (orig. Hardy Ilam)	c	1951 - + NZ
Incomer	z	
Inverness Favourite	c	1934 - 1972

Name of variety	Status in NZ	Dates show years in Certification System and where bred or selected in New Zealand
Irish Cobbler	z	
Iron Duke	c	1929 - 1960
Iwa	c	1978 - 1993 NZ
Iwa PT	c	1983 - + NZ
Jersey Bennes	c	1932 - 1996
Jersey Bennes PT	c	1986 - +
Kaimai PT	c	1992 - + NZ
Kaituna PT	c	1986 - 1987 NZ
Karaka PT	c	1993 - + NZ
Karupoti	z	NZN
Katahdin	c	1940 - 1992
Katahdin PT	c	1984 - 1995
Kennebec	c	1967 - 1994
Kennebec PT	c	1988 - +
Kerr's Pink	c	1930 - 1934
King Edward VII	c	1928 - 1991
Kiwitea PT	c	1993 - + NZ
Knights Grange Perfection	z	
Knowler	z	NZS
Kowiniwini	z	NZN
Kurrel	c	1966 - 1980
Ladies Finger (s)	z	
Lady Christi	n	
Lady Rosetta PT	c	1998 - +
Leader	z	
Liseta EPL	c	1990 - +
Lutetia	n	
Magnum Bonum	z	
Majestic	c	1928 - 1964, 1964 - 1992
Manhattan	z	
Maori Chief	c	1929 - 1947 NZS/N?
Maris Anchor	c	1977 - 1996
Maris Anchor PT	c	1986 - +
Maris Court	c	1976 - 1987
Maris Bard	c	1983 - 1988
Matilda PT	c	1993 - +
Maxine	n	

Name of variety	Status in NZ	Dates show years in Certification System and where bred or selected in New Zealand
May Queen	z	
Minred	c	1977 one year only
Moe Moe	z	NZN
Monalisa PT	c	1992 one year only
Monarch	z	
Mondial EPL	c	1990 - +
Moonlight PT	c	1999 - + NZ
Morene EPL	c	1989 - 1994
Nadine PT	c	1990 - +
Navan	c	1995 - 1996
New Era	z	
New Zealand Variety	z	
Nga Outi Outi	z	NZN
Nooksak PT	c	1992 - +
North Downs	c	1929 one year only
Northern Star	c	1929 - 1947
Novita	n	
Obelix PT	c	1992 - 1994
Old Red	z	
Ono	c	1973 - 1980 NZ
Onward	c	1960 one year only
Pacific PT	c	1996 - +
Paragon	z	
Pentland Dell	c	1970 - 1995
Pentland Meteor	c	1978 one year only
Pepo	n	
Pink Fir Apple	z	
Pink Kidney	z	
Poiwa	z	NZN
Premiere PT	c	1993 - 1994
President	z	
Proloog	n	
Ranger Russet PT (aka Ranger)	c	1993 - +
Raupi	z	NZN
Reading Russet	c	1929 did not qualify
Record	c	1973 - 1981
Red King Edward	c	1954 - 1998

Name of variety	Status in NZ	Dates show years in Certification System and where bred or selected in New Zealand
Red King Edward PT	c	1983 - +
Red Rascal PT	c	1993 - +
Red Rocks	z	
Red Rover	z	
Red Ruby EPL	c	1998 - +
Remarka	n	
Rima	c	1967 - 1992 NZ
Rima PT	c	1991 - 1995 NZ
Rob Roy	z	
Robin Adair	c	1929 - 1966 NZS
Robinta EPL	c	1994 - +
Rocket	c	1991 - +
Rocket PT	c	1996 - +
Royal Ilam	c	1950 NZ one year only
Rua	c	1960 - + NZ
Rua PT	c	1982 - + NZ
Rural New Yorker	z	
Russet Burbank	c	1972 - 1975
Russet Burbank PT	c	1988 - +
Russet Norgold	c	1972 - 1974
Satisfaction	z	
Saxon	n	
Scotia	z	
Scottish Triumph	z	
Sebago	c	1944 - 1946
Sebago PT	c	1980 - +
Seintje	c	1960 one year only
Sequoia	c	1945 one year only
Shamrock II	c	1929 did not qualify
Sharpe's Express	c	1930 one year only
Shepody PT	c	1992 - +
Sir JG Wilson	c	1934 - 1939
Skerry Blue	z	UK Aka Blue Sk. & Skerries
Snowden PT	c	1998 - +
Southern Cross	c	1985 - 1977 NZ
Sovereign	z	NZ
Spunta EPL	c	1989 - +

Name of variety	Status in NZ	Dates show years in Certification System and where bred or selected in New Zealand
Stroma PT	c	1992 - +
Summit PT	c	1999 - +
Superba	c	1962 - 1967
Superior	c	1972 - 1974
Supreme	z	
Sutton's Supreme	z	
Swift PT	c	1997 - +
Tahi	c	1960 - 1986 NZ
Tekau	c	1982 - 1993 NZ
Tekau PT	c	1985 - 1988 NZ
Torridon	c	1991 one year only
Toru	c	1969 - 1988 NZ
Toru PT	c	1985 - 1986 NZ
Ukuma PT	c	1995 - 1997
Ulster Beacon	c	1958 - 1961
Ulster Cromlegh	c	1948 one year only
Ulster Supreme	c	1953 - 1973
Uno	n	
Up-To-Date	c	1928 - 1948
Valor PT	c	1998 - +
Van Gogh PT	c	1990 - +
Velox	n	
Waitangi Cream TPS	z	NZ
Waitangi Red TPS	z	NZ
Waitangi Round TPS	z	NZ
Waitangi Russet TPS	z	NZ
Waru	c	1973 - 1987 NZ
Wha	c	1971 - 1993 NZ
Wha PT	c	1989 - 1992 NZ
White Delight PT	c	1994 - + NZ
White Elephant	c	1948 - 1950
Whitu	c	1971 - 1992 NZ
Whitu PT	c	1989 - + NZ
Windsor Castle	z	
Winston PT	c	1998 - +
Witchill	c	1930 did not qualify
Yvonne PT	c	1991 - 1993

References and acknowledgements

The following sources and people have been consulted regarding potato varieties grown in New Zealand over the past 100 years.

The author accepts that since considerable time has elapsed from the first arrival of the potato in New Zealand, some of the early records may not reflect present varietal behaviour, and some anecdotal details may not be completely accurate. Entries and references in this work have been made in good faith in an effort to preserve the history of the potato certification programme and varieties in New Zealand. It is accepted that there could be discrepancies in early 'hand me down' information where varietal names are concerned and any new information/varieties will be welcomed by the author.

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Studies from Terra Australis edited by Hardy & Frost, and the *Historical Records of New Zealand* compiled by R M McNab in two volumes.

New Zealand Heritage: The making of a nation. Hamlyn House series publication.

Other works on early Southern Ocean exploration.