

A Short History of Apple Packing in Hawke's Bay

Apples have been packed and wrapped in tissue since the early 1900s.

A Ministry of Agriculture paper from Canada gave instructions for packing apples into barrels, but here in NZ we have only used wooden cases and cartons.

Old photos show fruit being packed outside in the orchard, but at least from the 1920s proper indoor facilities seem to be the norm.

Packing requires fruit of a similar size to be in the same box so right from the beginning sizing became the issue.

The early mechanical attempts consisted of a board with a vertical edge on one side, slightly tilted with a tapered roller running parallel to the length of the board with a belt which carried the apples. The roller was set with an ever-increasing gap and set to rotate to keep the apples on the belt. When the gap became greater than the fruit it fell through into bins separating the sizes.

In Nelson a German engineer in the 30s developed the "Bensiman". This was a screw-type unit consisting of two parallel shafts with felt-covered wooden screws which when turned in opposite directions carried the fruit along and as they could be adjusted with an increasing gap between them, the larger fruit was carried the furthest.

Similar to the above method. The profile of the wooden screw also changed over its length which contributed to its sizing ability.

In the late 50s a variation of the belt and roller was developed again in Nelson using rotary bins and a more sophisticated attempt to improve the sizing technique, but to no avail - it proved to be poor at sizing and brutal.

In 1908 the Cutler Bros decided to go into fruitgrowing. They left their engineering business in the east and moved to the Hood River Valley in Oregon, USA. Here they purchased a large orchard and also planted extra acreage. By 1912 their problem was no small one and being of a mechanical bend, set about making a mechanical grader to facilitate their own packing. Their first machine was based on the measurement principle of sizing. It consisted of a moving horizontal carrier made up of a series of wooden slats which opened away from each other. While this device seemed crude in comparison to the present graders, it nevertheless was ahead of hand-grading methods and proved successful in handling the 1912 crop of apples from the Cutler orchards.

That winter, five graders were made for neighbouring growers. The next year in 1913 sixteen graders were ordered by growers and in 1914 thirty-five. Each year saw improvements and developments and before they knew it, the Cutlers were spending most of their time making graders.

It is very possible that this early sizing method was the basis used in the Northwest Rapid Sizer used in later years for rough sizing of fruit in the canning business. The NZAPB also had it in its Hastings packhouse.

By 1915 they developed a machine which sized by weighing each fruit. This was achieved by carrying each apple in a wire framed canvas cup on an endless chain and passing them over a series of scales in which the heaviest was dropped at each weigh station. This principle almost immediately won for the Cutler Grader a very high order of recognition from growers, because it placed machine grading on a certain, scientific and accurate basis, regardless of the shape of the fruit.

By 1918 orders were being received from all over the world and the business had reached such proportions that it was deemed advisable to move to Portland.

The first Cutler Graders for New Zealand must have been imported about this time. They were the backbone of apple and pear grading during the 30/40 and 50s, for example Slater's (commercial packers and wholesalers) had at least one; Wakes, Norm Hope and numerous others likewise.

In 1970, having experimented with an Orbit grader designed for grading kiwifruit, Pernel imported the first plastic cup grader to come into NZ. This consisted of 4 lanes of cups (about 1200 cups per machine) and it was built by the FMC company in the US. Just the main frame, weigh stations and mechanics to carry the cups was imported. The rotary tables and feed systems were all manufactured here in NZ.

The sizing principal was the same - carry each fruit individually in a cup over a series of weigh stations and at each station weigh out the biggest fruit.

The arrival of this machine was timely as a young apple grower/engineer Kevin Fourneau was looking at a unit to size stonefruit for Ann Robinson (a neighbour of Kevin's). He spent many hours studying the FMC and in this process discovered that the patents for it had expired.

Around this time a group of growers led by AB Smith, a large apple-grower, were looking at a community packhouse.

Kevin built an 8-lane unit for them and following this success he established a factory in Manchester Street, building graders for other growers throughout New Zealand.

Sadly Kevin died while still a young man and his manufacturing business was bought by Doug Clark. Doug's early years were spent at sea as a marine engineer and later as chief engineer at meat-processing plants.

Another engineer, Neil Macdonald, was working for this packhouse group.