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20th Century Practices for Kumara Curing and Storage

This Tip gives some brief descriptions of kumara curing and storage reported between 1900 and 2000. It builds on knowledge that had been developed by Maori through generations of growing kumara as a staple crop. The information in this Tip is from a variety of sources that are referenced at the bottom of the page.

Kumara Food Value

In 1911, Dr J Malcolm reported that kumara were two thirds water and up to 19% carbohydrate and only 0.27% fat. He noted the sweet taste was due to saliva converting starch to sugar. Mould grew quickly due the presence of sugar which is lacking in ordinary potatoes.

Kumara Handling

In 1958, H Conway, Horticulturist with the Department of Maori Affairs in Gisborne said that better storage and careful handling of kumara would increase returns to growers.

Kumara should be handled as carefully as apples – pickers should keep short finger nails, and bruising and skin damage must be avoided. Even if rots do not set in, the bruised area becomes discoloured and hard, reducing appearance and quality.

Conway suggested storage losses could be reduced to 5% or less rather than about 30% using then standard methods.

Kumara Storage

Large stores should be divided into either small rooms or bins so that each room or bin can be filled in a day or two at the most, otherwise the completion of the curing with the necessary shrinkage will be uneven. Kumara need only to lose about 6–8% only of their original weight.

Conway reported experiments showing that sorting kumara in store to remove decay was of no benefit. But he preferred to store in boxes rather than bins. And he recommended storing seed kumara in separate rooms or bins so it could remain undisturbed until planting time.

Storage Conditions

Conway suggested using insulating boards for the walls and roof of the storage house to help keep the temperature stable. If these were not available he recommended using timber instead and lining the walls with building paper, which would help stop draughts as well as provide extra insulation.

Conway said that storage houses should be built draught proof, but with ventilation that could be shut when it wasn't needed. Ventilation is important to control humidity and help stop ethylene building up, because too much ethylene can cause tissue breakdown. Too much ventilation can be a problem if it causes temperature changes in the storage house, so it needs to be controllable.

Conway also suggested that the storage houses only had enough windows to give the workers some light, because too much light causes sprouting and windows also cause the storage house to lose heat.

The traditional methods achieved the required storage temperatures by half burying store houses in the earth. This provides a large amount of insulation, and the mass of soil keeps the temperatures (and the store) reasonable stable.

A traditional kumara store house, with soil providing insulation

References

Malcolm (1911). *The food value of kumaras.* Paper presented to the Otago Society, 1/8/1911.

Conway (1958) *Higher returns from kumara.* In Te Ao Hou: The new world, December 1958.