

# FIJI DALO

## The Value Chain: Opportunities to Improve Quality and Consistency

Producing quality dalo for export requires effort throughout the value chain. Farmers need to produce dalo which is of good size and even shape, without damage from pests. The dalo then needs to be transported to exporters quickly without damage. The exporters are then responsible for cleaning, processing and shipping the dalo so that it arrives in the export market with a good shelf life and at a competitive price. Dalo must be of high quality if it is being sent to export markets.

### 01 DALO VARIETIES



Fiji has a number of dalo varieties, with the variety Tausala ("Fiji Pink") currently being the most popular variety for export as fresh dalo. Other varieties commonly grown include Samoa hybrid, Wararasa, Maleka dina, Vula ono, Uro ni vonu, Vavai dina, Vavai loa, Samoa dina, Kurokece, Dalo ni toga and Toakula. Farmers and buyers should regularly discuss what is happening in the market, including the types of varieties, volumes and quality requirements demanded by the market so that farmers can plan and work towards meeting these requirements.

### 02 SITE SELECTION



Dalo should be planted in areas with consistently moist soil to produce evenly shaped corms. Drying and wetting of soil during a season can cause changes in the growth of the dalo plant, resulting in dumbbell or peanut shaped corms unsuited for export. Planting year on year dalo should be avoided as it leads to a decline in soil fertility and encourages the build-up of pests. Farmers should adopt strategies to maintain and build fertility in their soils, using fertilisers and/or organic practises where appropriate.

### 03 PROPAGATION



Uniform sized, healthy suckers help to grow crops that have consistent size and quality. Suckers should be 4cm in diameter and 25cm long, trimmed of leaves and free from pests and disease. Where dalo beetle occurs the suckers should be dipped using an appropriate pesticide to prevent damage from the beetles. When trimmed the suckers should be stored in a dry, shaded place off the ground to allow wounds to heal and prevent attack from pests and disease.

### 04 PLANTING AND FERTILISER APPLICATION



Holes or furrows should be dug to a depth of 25cm, the soil loosened and suckers planted 15-20cm into the ground. Fertiliser is often applied at planting or soon after planting. Soil testing can help farmers to develop a fertiliser schedule, and fertiliser application should continue through the season to help ensure that the dalo develops a consistent shape. Ministry of Agriculture staff can assist with providing information about a suitable fertiliser schedule.

### 05 GROWING



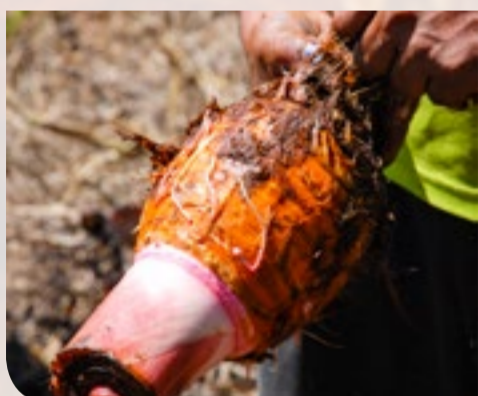
Young plants need to be kept free from weeds that compete for light and nutrients. Weeding can be done by hand, or through the use of herbicides. It is important that suckers are not harvested from the crop prior to the crop being harvested as this can cause wounds on the dalo corms that allow rots to develop, reducing the quality of the crop.

### 06 HARVESTING



Dalo should be harvested once it begins to senesce. It is important that the dalo is harvested at the right time as dalo that is either too young or too old can have poor taste and texture qualities. Only healthy plants should be harvested. **Avoid throwing dalo as this can cause injuries and bruising.** If dalo is being harvested for export, then the buyer should explain the size grades and quality requirements they are expecting so that farmers can selectively harvest dalo that meets these requirements. Ideally dalo should be harvested in the cooler part of the day to help maintain quality.

### 07 CLEANING IN FIELD



Dalo should be cleaned in the field to the requirements of the buyer. The dalo should be transported to a collection point in the field ready for pick up. It is important that the dalo is not handled roughly as this can cause bruising which causes quality problems in markets. Overloading bags of dalo should be avoided as it can also cause bruising and damage. The harvested dalo should be stored in a shaded and well ventilated area to help maintain quality and reduce the possibility of rots developing.

### 08 QUALITY INSPECTION



Dalo is usually inspected by the buyer when it is purchased. The buyer should be able to clearly describe the variety or varieties they are looking to purchase, their quality requirements and the types of grades that they might be. Grades are usually define by size. Exported dalo must be more than 300g, with A-grade corms usually weighing between 1 and 2.5kg. Dalo should be an even round or oval shape (without "dumbbell" or irregular shape), it should not have holes or signs of injuries (there should be no areas where it is soft), it should be free of signs of bruising and mishandling and it should be free from pests, insects and any other contaminants.

### 09 TRANSPORT TO THE EXPORTER



Trucks transporting dalo should be clean and there should not be edges or surfaces that might damage the dalo. Dalo should be covered during transport to help shade it and ensure quality is maintained. **Anyone handling dalo during loading or unloading must take care not to bruise or damage the dalo.** Ideally drivers should choose routes that avoid rough roads that may cause damage to the dalo. It is important to minimise the amount of time the dalo is in transport so that it arrives fresh at the exporter. Long transport times can decrease the shelf life of the dalo.

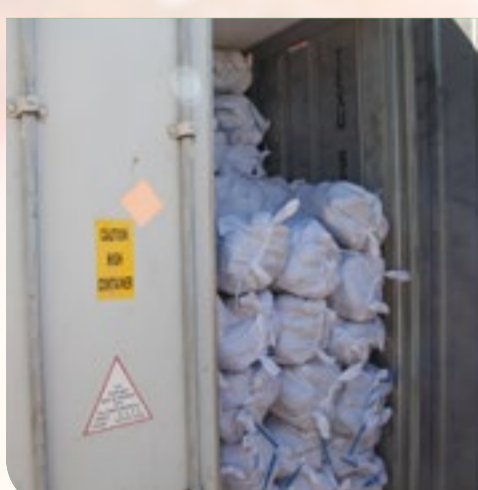
### 10 PROCESSING BY THE EXPORTER



Exporters will usually process the dalo the same day it is received to ensure that quality is maintained. Exporters inspect the dalo for quality and to ensure that it meets biosecurity requirements set by the country it is being sent to. The dalo is trimmed of any roots and loose material and the tops of the corms evenly trimmed to the requirements of the market. The dalo is usually then washed and allowed to dry before a final grading inspection. The dalo is then packed for export and transferred to a cool store.

If dalo is being further processed for other markets, for example for frozen dalo, then the trimmed dalo may be cleaned to more stringent standards, cut into pieces, put into bags and frozen.

### 11 SHIPMENT



Exporters seek to time their receipt of dalo so that it can be processed and shipped as quickly as possible to maximise its shelf life. Depending on when the boat or plane is leaving for the export market the exporter may hold the dalo for 2 or 3 days. Dalo for export requires biosecurity inspection and certification before being transported to the port.

The time taken for sea freight to arrive depends on the market. Trips to ports in New Zealand may take 3 to 7 days. This means that dalo sent by sea freight may arrive in the market 1 or even 2 weeks after harvesting. Shipping delays can be problematic, as the quality of the dalo reduces over time which may lead to lower prices and shipments being rejected by biosecurity officials or buyers.

### 12 DELIVERY TO THE EXPORT MARKET



Once dalo shipments arrive they then need to be cleared by biosecurity in the receiving country before being transported to market.