Series 00 No.00

Training Series on Agrometeorology and Climate Change Adaptation

Yam Propagation Using Vine Cutting Technique

Yam (*Dioscorea spp.*) is one of the main traditional crops cultivated in Vanuatu. It is a root crop which is propagated using tubers as planting materials. New innovations and technology have proven that yam vines can now be used as planting materials to produce tubers for replanting.

Advantages of the vine cutting technique

- Fast propagation of yam tubers using vine cuttings.
- Farmers can produce more planting materials for different yam varieties.
- Produces healthier plants.

YAM SPECIES

- Soft yam *(Dioscorea alata)*
- Wael yam *(Dioscorea nummularia)*
- Sweet yam *(Dioscorea esculenta)*
- Wailu *(Dioscorea rotundata)*
- Africa *(Dioscorea trifida)*
- Puevu *(Dioscorea bulbifera)*
- Hibo *(Dioscorea pentaphila)*
- Strong yam *(Dioscorea transversa)*

The vine cutting technique is best applied with the following varieties of yam:

Soft yam
(*Dioscorea alata)*

Wael yam
(*Dioscorea nummularia*)

Wailu
(*Dioscorea rotundata*)

Materials for preparing the vine cuttings

- Sharp kitchen knife
- Scissors
- Plastic bag
- Transparent plastic cups
- Dish full of clean water
- Small Table
- Carbonized husk (coffee, rice or saw dust)

Collection of vine cuttings

- Stem collection is done 3-5 months after planting the yam into the field, when the main stems have grown lateral branches.
- It is best to use lateral branches (side shoots) so as not to disturb the growth of the main plant.
- Select side shoots with more than 3 nodes.
- Using scissors or small kitchen knife, cut the selected side shoots from the main stem. Take extra care to avoid damaging the main stem.
- Place the cuttings in a plastic bag and bring to the nursery.

Preparing the nursery

- Use screen nets or coconut leaves to build the roof of the nursery. The nursery must have a good shade.
- A table or bench will be needed to hold the seedling cups under the shade.

Carbonized husk is an effective and inexpensive fertilizer for the vine cuttings.

Preparing carbonized husk

- Prepare carbonized husk by burning rice husk, coffee husk or sawdust in a safe area away from the nursery. Burnt husks will appear black.
- Cool carbonized husks and collect into sacks.

Preparing the vine cuttings

- Place the cuttings in a dish and soak in water.
- For each cutting, locate the part of the stem which is not too hard (mature) nor too soft (young).
- Using scissors cut this part of the stem in a 45^{o} angle.
- The final cutting should have at least 3 nodes. The cut part of the stems should be 1-2 cm long from the nodes on both ends.

- Make 3 holes on the bottom of each plastic cup. This will serve as drainage for excess water.
- Place enough carbonized husk to fill the cups.
- Plant 1-3 cuttings into each cup placing each piece deep enough to cover one of the 3 nodes.
- Water the seedlings as needed.

Photo credits: Tari Molisale

Transplanting the vine cuttings to the field

- The seedlings are ready for transplanting to the field after 2-4 weeks, when new roots and shoots have grown from the stem cuttings.
- Make sure that the field is well plowed and soft. Add some mulch if desired.
- Plant each vine cutting 30 x 30 cm apart from each other.

Harvesting of seed tubers

- The seed tubers will be ready for harvest 3-5 months after transplanting the vine cuttings into the field. Tubers will weight around 0.1 to 0.4 kg.
- Store the seed tubers in a shaded area with good air circulation.

You are now ready for the planting season!

*This training guide was prepared by the **National Advisory board on Climate Change and Disaster Risk Reduction** and **Vanuatu Department of Meteorology and Geo-Hazards** in cooperation with **SPC/GIZ Coping with Climate Change in the Pacific Island Region** with funding support from the **EU Global Climate Change Alliance.***

Where can I get advice?

- For more information on Climate Change & Disaster policy, projects and activities, contact:
  National Advisory Board on Climate Change & Disaster Risk Reduction (NAB)
  Private Mail Bag 9054, Port Vila Tel: (678) 2231;
  Fax: (678) 22310
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- For more information on Climate Change Science, contact:
  Climate Section of the **Vanuatu Meteorological and Geohazards Department (VMGD)**
  Tel: (678) 24686
- For more information on Yam Vine Cuttings, contact:
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