In the transfer hood, remove leaf sheaths until the final size is approximately ½ by ½ inch. Plant explant directly on to the medium.

Once explanting is complete, place containers in a culture room at 22-25°C with continuous light produced by a 30 watt cool fluorescent tubes.

5 PLANT PRODUCTION

Shoot Proliferation *(3-8weeks)*

When new leaf unfurled from the explants, they are stimulated to produce adventitious shoots.
New leaf is removed and the underlying shoot tip is trimmed to about half inch above the base. If the base has darkened and the outer tissues have toughened, the surface is gently scraped to freshen and expose it and to stimulate shoot proliferation.
When newly proliferated shoots are about 1 and a half inches tall, they are cut away (separately) from the explant base.

Root initiation

To enhance rooting,large plantlets are selected and placed on root promoting medium previously used except that a growth regulator (BA) is omitted.

Acclimatization and Single-Potting

Plantlets directly from the rooting stage are acclimatized to the outside environment.

At the same time, the plantlets are about 2 to 3 inches tall with some roots.
Before single potting, plantlets are rinsed in lukewarm water to remove the medium.

They are soaked in 10% fungicide solution for 15 minutes and another 10 minutes in Hormex or rooting solution *(1.5ml/ gallon of water).* Plantlets are then potted on a sterile soil medium *(2 parts garden soil: 1 part sand)* in 3 inches pots.

6 FIELD IN PRODUCTION

When plants reached the height of about 6-12 inches, the plants are now field ready.
Planting is done by hand at the desired density.
It is recommended that "clean" plants should not be mixed with infected plants and should be planted in a clean area,well-irrigated and free from pathogens.
If yield is decreasing, check the taro plants for diseases and if possible, begin new "clean" plants in a "clean" field.

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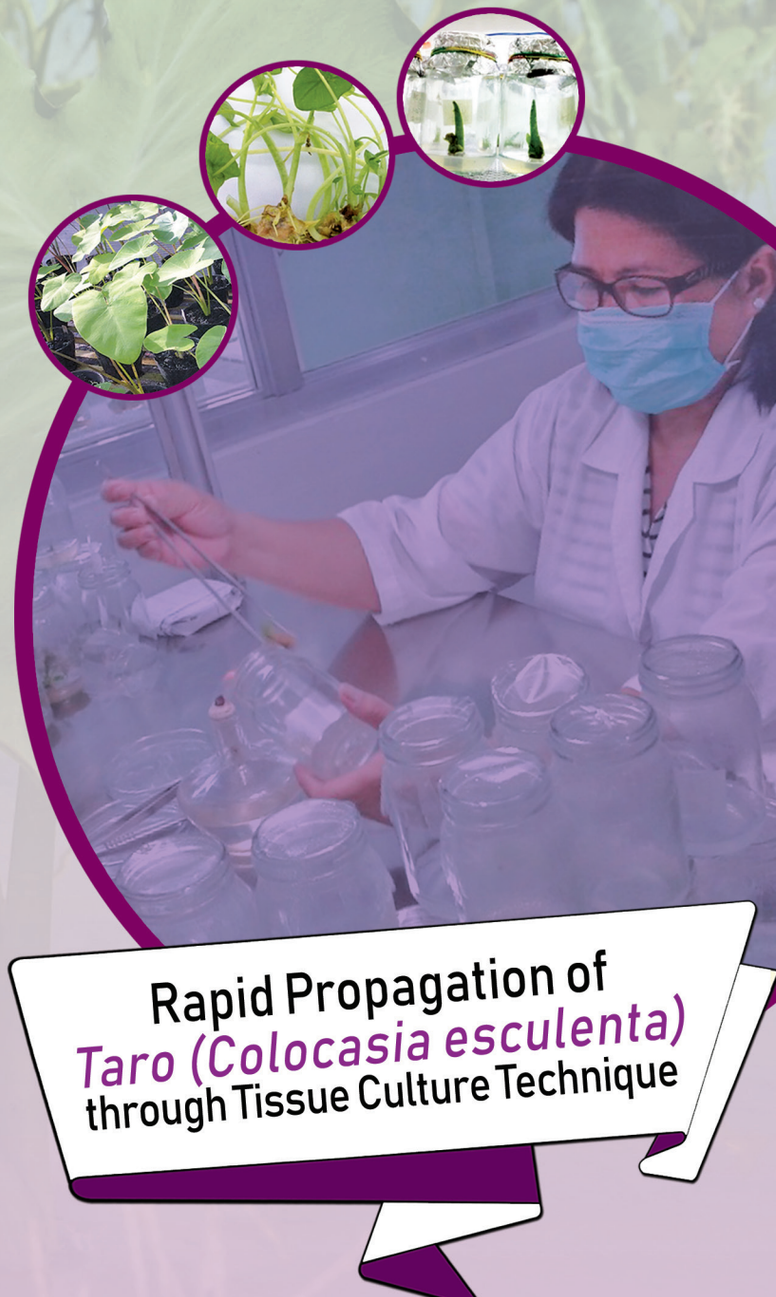

Rapid Propagation of *Taro (Colocasia esculenta)* through Tissue Culture Technique

Taro, Colocasia esculenta (L.) Schott occupies a significant place in the agriculture of the Asia Pacific Region. It is in this region that about 34,000 hectares of land are planted with taro which produced about 117,000 tons (FAO, 1997) thus, becoming a staple food for the people. From 1961-2012, the Philippines ranked 11th in the world on taro production which covers both fresh and dried. According to the Bureau of Agricultural Statistics, the Bicol Region is among the top five producing regions together with Eastern Visayas, Cagayan Valley, Cagara and Central Visayas.

Taro leaves are rich in vitamins and minerals and are good source of thiamine, riboflavin, iron, phosphorous and zinc. It also contains greater amounts of Vitamin B-complex than the whole milk. Taro corms are very high in starch and are good source of dietary fiber.One of the rapid strategies for the multiplication of taro is the use of meristem culture. However, one of the major problems in taro production is the source of good planting materials. From one healthy elite plant, thousands of disease-free plantlets can be generated in a few months.

The main benefit of tissue culture of taro is the production of large numbers of uniform, disease-free plants. This provides the farmer the ability to plant in new farms, fertilize efficiently and increaseproduction. Tissue culture also allows better farm management and planning.

OBJECTIVES:

1. To develop protocol for micro propagation of taro.
2. To mass produce healthy and disease-free planting materials.
3. To produce a large number of taro plantlets for distribution to interested clienteles/farmers.

Different Varieties of TARO used in TISSUE CULTURE

Princessa

One of the indigenous varieties of Gabi which has purple stalk but green leaf midribs and petiole, while the base of the petiole is pinkish. The leaf is big, thicker and has a delicious flavor same as with its corms.

Binti ng Dalaga

Binti ng Dalaga has green leaf and midrib.
The petiole is white or pale green but its base is reddish pink and the inner skin of the corm is pinkish.

Balitaka

Another indigenous variety of Gabi which has purple stalk and leaf midrib. The leaf midrib is big. From the base of the petiole up to the base of the leaf, the color is purple with white stripes. Corms are big with distinctive purple inner fiber.
Unlike princessa, the leaf is thinner but has a delicious flavor which is extended to its corm or tuber.

Bikol Purple Wild

This variety originated in Bicol and considered as the oldest variety of Gabi. It has purple petiole and leaf midrib while the base of petiole is white. The leaf is big and flavorful same as its corms.
Tubers are bigger and good for gabi chips and other gabi tubers products. Its shoots are easily multiplied and mother plant has long life span.
Bikol Purple Wild is also resistant to

THE TISSUE CULTURE PROCESS

1 CRITERIA IN SELECTING THE PLANTING MATERIALS

Plants grow rapidly.

Leaves are free from irregular patterns of yellowing or lesion.

Plants are free from pest and diseases at mature stage with relatively bigger leaves and with maturity stage of 6-8 months.

2 BEFORE EXPLANTING

A mother plant material is relatively easy to clean if it is cultivated for laboratory use.
This practice aids in successful culture initiation because they lower the chance of contamination by microorganism.

3 MEDIA PREPARATION

The culture medium contains macro and micro nutrients, vitamins and other additives which are prepared using the MS *(Murashige and Skoog)* media. The medium is prepared in advance for cooling and solidification. Media is stored in a clean room for one month or more before use.

4 CLEANING THE CORMS

After the corms have been air-dried, trim the leaf stalk around 1-2 inches and then cut away outer tissue from tuber. Gently peel away 1 to 2 leaf sheaths and trim base to a 1-1.5 inch square. Gently scrub the explants again to ensure that no dirt remains after brushing.

Place explants in a colander and run tap water for 1 hour. Drain, then place in a clean beaker containing 10%bleach solution with 2drops of Tween 20 for 45 minutes with frequent agitation and rinsed 3x with sterilized distilled water follow by 70% ethyl alcohol for 30 minutes and 5% chlorox for 5 minutes.