GUIDE TO THE PRODUCTION OF TELFAIRIA OCCIDENTALIS (UGU)

Ugu can be grown all the year round. A rain fed crop is produced between March and November while the dry season (irrigated) crop is produced between November and March. Ugu is propagated mainly by seeds. It will grow on moist, well drained, fertile soils. Healthy mature seeds extracted from well-formed pods are air dried overnight.

The cultivation of the crop can be categorized under different subhead as stated below:

SEED PROCUREMENT: The sources of seeds are classified into:

- Local (e.g. Farmer's plot, markets, etc.)
- Government agencies (Ministry of Agriculture, ADP's, etc.)
- Research centres (NIHORT)

The source of seed is very important to the farmer because of the probability of

a. Using seeds that are of undefined origin.

b. Using seeds that have seed-borne pathogenic organism.

The quantity of seeds to be used depends on the hectarage at the disposal of the farmer. However, recommended seed rate per hectare is 10,000 – 20,000; this is also a function of plant density per hectare.

NURSERY PRACTICES

Soil sterilization

The obvious advantages of sterilizing the soil before sowing seeds is to eliminate harmful hypophilic and thermophidic micro-organisms and weed.

Soil is sterilized by:

a. Steaming in water for about an hour.

b. Fumigation with methyl bromide or formalin.

c. Sodium hypochlorite solution.

The process of sterilization depletes the soil nutrient. This is replenished by the addition of compost or any other nitrogen rich organic manure such as poultry droppings.

Soil type

Ugu grows best in well-structured soil with pH of 6 - 7.5. However, amending the soil with other plant based manure is advocated.

Seed sowing

Seeds are either sown in beds under shade or in nursery trays. The method of sowing is either in rows of 30-50 cm on beds or 10-15 cm in trays. Seeds may be nursed in nursery trays in moist sawdust and transplanted to the field at 6-leaf stage.

Raising seedlings in the nursery has obvious advantages which include:

- Affords easy management of the tender seedlings.
- Timely and careful plant protection measures.
- Enables the provision of the most favourable growth medium.
- There is the economy of land and seed.
- Gives more time for field operation.

The seedlings are subjected to intensive care until it is ready for transplanting 2-4 weeks after sowing.

LAND PREPARATION

Land preparation can be done depending on the financial capability or the cultural orientation of the individual farmer.

Land is prepared by the process of:

- Clearing only
- Clearing, burning and hoeing
- Animal traction
- Mechanical tractorization.

TRANSPLANTING

Ugu seedlings are usually transplanted when the seedling is about 2-4 weeks old or when the vine is about 70 mm in length. The seedlings are arranged on prepared beds 100 cm x 100 cm within and between rows. This gives a plant population of 10,000 per hectare.

When sown in the rainy season, it is usually necessary to stake. For the dry season the crop is usually cultivated using residual moisture or in valley bottoms, a higher population of 65,000 plants/ha is used by planting at a close spacing of 50 cm x 30 cm. The aim is to optimize yield within the short growing season.

STAKING METHODS AND TYPES

The tender vines should be staked using bamboo poles after the first cutting/pruning (4-6 weeks after planting.) The rain fed crop requires staking to keep the leaves free of soil particles and prevent white leaf spot infection caused by soil borne pathogens. Staking also makes harvesting and spraying easier. Some growers consider staking optional for the dry season crop especially when it is grown on upland under rainfed condition. In valley bottoms which may be flooded within 4 months after planting staking may not be necessary more so since they are densely planted thus decreasing the useful life of the stakes. The various types of staking include the ***earaga***, (table type), ***trellis***, single stake and the ***tripod***. Stakes should be installed at least 30 cm deep to forestall tipping over due to the heavy weight of the vines (and later, of the pods).

Other advantages of staking includes

a. Exposing fruit to light and air circulation.
b. reducing the alternate heating and cooling of the fruit by the soil which enhances the rate of fruit damage.
c. Reducing the incidence of diseases and pests.
d. Proving good quality clean fruits.

Trellis staking method

FIELD MAINTENANCE:

Weeds should be controlled 2 and 4 weeks after planting and subsequently as the need arises. Thereafter, the dense canopy of the plant tends to shade out the weeds.

Weed control

- Weeding is done two or times before harvesting is completed.
- Weeding 2 - 4 weeks after transplanting is desirable.
- Increasing plant density also helps to control weeds by casting a dense shade on the undergrowth.

However, if weeding is not done timely, it will serve as alternate hosts of plant diseases, and parasitize the root systems thereby affecting the yield quantity and quality.

Pests and diseases control:

a. Nematicides such as Miral 5G, Furadan 3G, Mocap etc are recommended to control nematodes.

b. Insecticides such as Cympermetrin, Ambush 25EC, Cymbush 5ml/10H, Sherpaplus 10ml/ 10L H_20 are recommended to control nematodes.

c. Fungicides such as Milzeb40D, Diathane M45 at 20g/ LtH H_20 Benlate Difolatan 80WP 20g/10Lt H_20 are usually recommended for the control of fungi.

The method of application depends on the type and mechanism of action of the pesticide.

Modes of application can be:

a. Using motorized sprayer

b. Knapsack sprayer

c. Spot treatment

Fertilizer requirements:

Fertilizer application rates vary with location. Ugu will benefit from a pre-plant application 20t/ha of poultry manure. Where logistics of sourcing and application make this impracticable for large scale production, it is advisable to use 25-50% of this rate at pre-plant and provide the other half of the nutrients required with a top dress of N.P.K fertilizer. Good vine yields of about 10.0 t/ha have been obtained with two split applications of 80-90 kg N/ha.

HARVESTING

Vine harvest

With good management, Ugu should be ready for harvesting as from 5 weeks after planting and at 3 to 4-week intervals thereafter. It is vital to select vines with succulent, deep green, large leaves as these command premium prices. The vines should be harvested with a sharp, clean knife taking care to cut the vine about 5 cm above the node such that the vine can sprout and produce saleable material three to four weeks later. It is also important to retain enough leaves on the plant to support growth and ensure a good harvest. Harvesting is best done late in the evening or early in the morning while the plants are turgid. After harvesting, the vines should be kept in a cool damp atmosphere and transported to the market under the same conditions.

Pod / fruit harvest

If pods (fruits) are desired, care must be taken to stop harvesting from female plants as soon as the female flowers or tender pods are identified. However, most growers prefer to select a few female plants and allow them to run to fruits which supply seeds for the next season while they harvest the remaining plants continuously irrespective of their sex. Pods mature about 90 - 115 days from flowering. Fully mature pods from the grower's plot can be stored in a well-ventilated room. The pods are harvested when the ridges changes from brittle to tough or hard to break and can retain their viability for between 3-5 months

Seed storage

Seeds for the next planting season can be obtained by purchasing them from the market or extracting them from the matured pods after harvest. When the seeds are stored in the refrigerator especially when the seeds are stored in the lower fridge compartment the seeds can retain their viability for up to 3 weeks.

NOTE: Feasibility report on Telfairia production is available on request.

For further information, contact

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