

SABA BANANA PRODUCTION GUIDE

BANANA stands out as the most important fruit crop in the Philippines, constituting a significant portion in the country's export revenue. Among the many banana cultivars grown throughout the, saba (*Musa balbisiana*) is considered as one of the leaders in terms of production and trade. Processed products derived from saba are gaining wide acceptance both in the domestic and international market.

Not to forget the fact that banana is also crop of social importance. It is one of the important sources of food in the rural areas where saba banana, in particular, is often used to extend, supplement or substitute staple food such as rice and corn

VARIETIES

In contrast to dessert bananas, cooking banana are starchy types which are cooked before eating and constitute an importance item in the diet of people in places where there are shortage of staple food

Cooking bananas are categorically known as balbisiana cultivars (BBB). There are numerous cultivars under this type such as Cardaba, Abutan, Inabaniko, Turangkog, Sabang puti, Mundo, Gubao, Saba sa Hapon and Bigihan.

However, the most common cultivar with commercial importance is the saba which is grown throughout the country. It has the largest and tallest stem attaining a height of four meters. Saba Bunches are big with 8 to 16 hands having 12 to 20 fingers per hand. The fruits are short and stubby and highly angular. The skin is thick and yellow when ripe. The pulp is creamy white, fine textured with well developed core and occasional seeds.

IMPORTANCE

Almost every part of saba banana can be economically utilized. Fruit, when ripe is also eaten fresh as dessert but is usually eaten when cooked. It can be processed into a wide variety of food products such as banana flour, flakes, ketchup, wine, vinegar, and the popular banana chips. The inflorescence is consumed as vegetable. The leaves are used as wrapping and decorative materials. The pseudostem is chopped finely, cooked and used as feed for hogs, cattle, and poultry.

SOIL AND CLIMATE REQUIREMENT

SOIL: Saba can be grown in nearly all kinds of soil but deep and friable loam soil with good drainage and aeration offers higher production and better fruit quality. Good yield had been reported from soils with pH value of 4.5 to 7.5. Extreme sandy and very rocky soil should be avoided.

CLIMATE: Areas with uniform warm and humid conditions with a minimum rainfall of 60 inches annually, whether through heavy and evenly spaced rainfall, and a temperature between 27 and 30 C is the most favorable condition for growing saba banana. Regions with long dry season may be developed into good banana producing areas provided irrigation facilities are available and economically feasible.

TERRAIN AND AREA: Ideal commercial plantation should be laid out on flat terrain to facilitate the movement of personnel, farm inputs and farm produce. Areas frequently visited by strong wind and typhoons should be avoided. A wind velocity of 48 to 56 kilometers per hour can cause crown distortion and exceeding this can cause serious blow down

CULTURAL REQUIREMENTS AND MANAGEMENT

LAND PREPARATION: Plow the land thoroughly. If possible, plow 2-3 times followed by harrowing particularly those areas that have been previously planted to other crops. On virgin and second growth forest, under brushing the area is enough.

LINING, STAKING AND DIGGING OF HOLES: Rows of banana are laid out at their proper distance and markers (pegs) placed at the pre-determined distance between hills in a row. Dig the holes 50-60 cm in diameter and 60-80 cm deep, depending on the size of the sucker to be planted.

PREPARATION OF PLANTING MATERIALS: Suckers 3-to 4 feet tall which are taken from healthy and vigorous growing clumps are the most practical and recommendable planting materials. Suckers should have many healthy roots without symptoms of nematodes or borer damage such as nodulation and internal lesions

DISTANCE OF PLANTING: Generally, saba requires a wider spacing. Distance of planting can be 4-7 meters. However, 4m x 4m is the regularly used planting distance, requiring 625 suckers per hectare. If the fruits are to be sold weight, a closer distance of planting will be desirable in order to get a higher yield per unit area. On the other hand, if the fruits are to be sold by counting the fingers, a wider distance of planting is desirable. This will enable the plants to produce bigger bunches.

PLANTING TIME: Bananas in general can be planted any time of the year. However, the time of planting is very important. In places where there is a distinct dry and wet season, planting should be done at the start of the rainy season to afford the newly planted sucker an adequate amount of moisture

PLANTING: Dig holes 50-60 cm deep. Place one sucker in the hole in vertical position and fill it with surface soil. If possible, press down the soil around the base of the sucker to avoid air spaces in the hole

WEEDING AND CULTIVATION: Banana needs little or no cultivation because of its shallow root system and the greater part of it is within the top six inches of the soil. If possible, cultivation should be done not beyond six inches. To control weeds, it is advisable to either cutlass and leaves them to rot, or apply recommended herbicides.

DESUCKERING: This is done to remove undesirable or unnecessary suckers succeeding the plant that has already fruited and maintain the correct population density of two suckers per clump/ hill. Retain those suckers that are deeply embedded in the soil. Keep the sucker in a straight line to facilitate movement through the rows. By permitting two suckers to grow from each hill, the population is virtually doubled and the planting distance is thereby reduced by one-half.

FERTILIZATION: Large quantities of nutrients are taken up by the banana plant. They consume nitrogen and potassium in big quantities, thus fertilizer application geared to replenish these nutrient must be properly programmed at regular intervals. Therefore, for maximum production, they should be fertilized frequently. The fertilizer recommendations for a hectare of saba banana are the following:

On the first year, mix 3.5 bags complete (14-14-14), 3 bags urea (45-0-0) and 10 bags muriate of potash (0-0-60) and apply at a rate of 440 grams per hill every 4 months. Double this rate for the succeeding years.

CROP PROTECTION

PESTS: There are about 27 insect pest recorded attacking banana plant in the Philippines. However it is speculated that there are several more unrecorded pests. Out of these recorded insect pests, there are at least three important insect pest known to attack all types of banana. These are:

Banana Corm weevil (*Cosmopolites sordidus*): This insect pest during its larval stage damages the plant by destroying the corm's tissue. Young seedling may die through bore attack if the larva reaches the growing point. To control, destroy the breeding and feeding places of the adult weevils. Immediately after harvesting, chop up the pseudostems into pieces and scatter them so that they will dry off or rot quickly. Cut the pseudostem close to the ground and cover the cut base of the corm with soil. Sustained weed control is also important, especially near the banana stools. Always plant disease-free planting materials.

Trapping is also recommended which involves the use of freshly cut pseudostem of about to 2 feet in length, cut longitudinally and placed on the ground with the cut surfaces downward. The cut pseudostem will serve as shelter and food for the adult weevil. After 2-3 days, the attracted beetle under the trap are collected and killed. Chemical control can also be done through soil treatment using recommended pesticides.

Fruit peel Scarring beetle (*Philicoptus Iligans*). This destructive beetle damages the banana fruit surfaces. Damaged fruits are considered of no value due to its inferior quality. This pest can be easily controlled by spraying the banana bunch with synthetic pyrethroid as well as protecting the bunch by covering with dursban-treated polyethylene bags with pinholes. Sanitation can also reduced beetle population.

Banana floral thrips (*Thrips flauerum*): Can be controlled by spraying the bunch with effective insecticides like Dioazinon. Two to three spraying are required to attain good control. Furthermore, inflorescence injection with the application of synthetic pyrethroid has also been found effective in controlling thrips.

DISEASES: important diseases affecting Saba banana are sigatoka, black leaf streak, panama wilt, bunchy top, and mosaic.

Sigatoka is a leaf spot disease caused by *mycosphaerella musicola* wherein infected plant exhibits small yellowish lesions on the third or fourth leaf which later darken and kill leaf lamina that will eventually cause collapse of the petiole. Severely infected plants become less productive, which produce inferior fruits. Black leaf streak, on the other hand, is a disease cause by *mycosphaerella fijinsis* which has similar effects as sigatoka but is more virulent. These diseases can be controlled by the combination of chemical spraying, sanitation and cultural practices which include maintaining optimum plant population and density, upkeep of canal and drainage, removal of the sources of inoculums and proper nourishment of the plant.

Panama wilt is caused by *fusarium oxyporum* and shown by the yellowing of leaves and petioles collapse around the pseudostem. Control measures involve rouging of infected plants, use of disease-free planting materials and implementation of quarantine measures.

Bugtok is caused by a bacterium identified as *Ralstonia solanacearum* and is manifested by browning of the inflorescence and the appearance of internal vascular streaks in the fruit peduncle, fruit stem and in the pseudostem. This can be controlled by regular sanitation and removal of the inflorescence upon the appearance of false fingers; and if possible, wrapping the fruits with either plastic bag, sacks, or cement bag measuring 0.75m x 1.5 m.

Mosaic and bunchy top are destructive viral diseases of banana. Mosaic virus is transmitted by aphid *Pentalonia nigronervosa* and is characterized by leaf streaks and the production of twisted bunches, deformed hands and distorted fingers which may not develop and finally become rotten. On the other hand, bunchy top is transmitted by brown banana aphid, *Pentalonia nigronervosa* and infects bananas at any stage of growth, resulting in stunted growth, rosette leaf formation and deformed fruits of low yield. The control scheme for bunchy top and mosaic consists of immediate removal and complete destruction of infected plants, regular spraying of insecticides at manufacturer's recommendation to control aphids, and use of virus-free planting materials.

MATURITY INDICES AND HARVESTING

Maturity Regardless of the variety can be distinguished easily when the first leaf turns yellow. It can also be gauged by the angle formation of the fingers. The more rounded the angle in the finger, the mature it is. Saba should be harvested when fully mature. However, fruits can be harvested green 5 to 10 days before ripening if it is intended for instant shipment.

Harvesting may appear to be simple but it should be done with great care. Usually, Two men are needed in harvesting, namely the cutter and the helper (baker). The cutter nicks the pseudostem in such a way that the bunch is lowered gently. The backer then positions himself below the bunch and takes hold the lower end of the fruit stalks as the bunch is laid on his shoulder. The cutter then cuts the peduncle of the fruit.

ANALYSIS OF PRODUCTION COST AND PROFITABILITY

Saba banana growing is regarded as a business which involves several aspects from production to marketing that a miscalculation in any of the operational steps would main a business failure. The profitability of saba growing is measured in terms of ratio between the production costs and output level. The role played by efficient management is to provide conditions that favor the growth and fruitfulness of the plantation and ultimately maximizing the net return on investment.

It should be borne in mind that heavy expenditures coupled with high yield of high quality fruit is more profitable than cheap care with low yield of inferior fruit quality. (Source: Bureau of plant Industry)