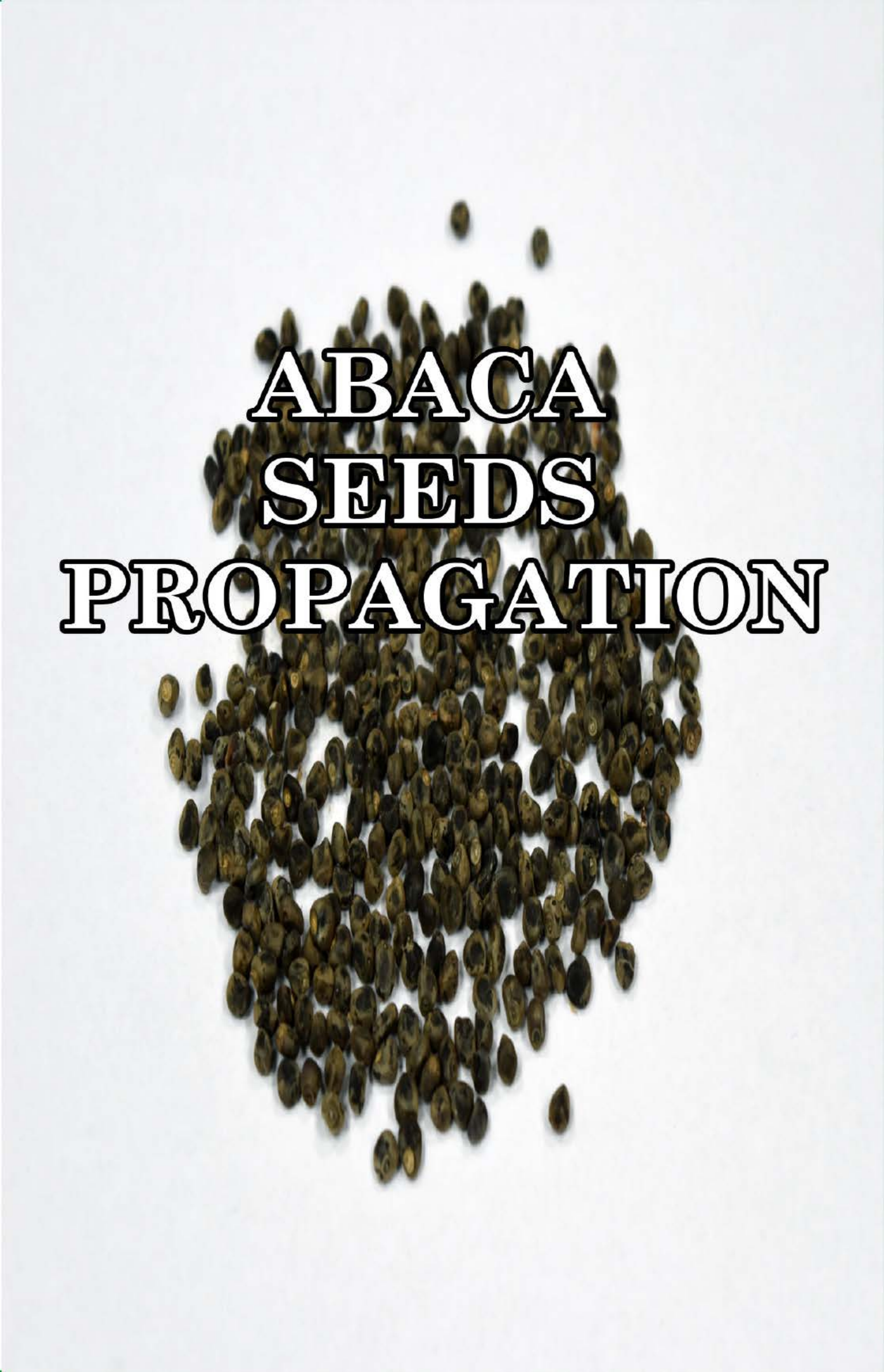
ABACA SEEDS PROPAGATION

Department of Agriculture

PHILIPPINE FIBER INDUSTRY DEVELOPMENT AUTHORITY

(PhilFIDA)


ABACA
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FOREWORD

The Philippine Fiber Industry Development Authority (PhilFIDA) aims to introduce the traditional method of using seeds in producing planting materials. It will attempt to present in detail the protocol in abaca seed propagation in the hope to avoid the possibility of acquiring variability in the morphological, chemical and physical characteristics of the plant and its fibers. Nevertheless, the use of seeds promises to serve as an additional source of planting materials to those who are interested in venturing on abaca fiber production.

This Manual intends to provide the step - by - step guidelines in seed propagation and seedling production technology.

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SALIENT POINTERS IN SEED PROPAGATION

- Carefully select the abaca variety.
- Seed selection must be done preferably in the PhilFIDA seed banks; other sources may, however, be also considered, like selected farms, private seedbanks and nurseries.
- Follow the recommended step-by-step procedure in the production and gathering of seeds.
- Avoid cross pollination.
- Acquire the necessary tools and materials in the propagation of seeds.
- Undertake proper care and maintenance of the nursery.
- Nurseries should as much as possible be within or proximate to the abaca areas to be planted or replanted to minimize cost and damage doing transplant.

Materials Needed:

1. 10 to 12 feet ladder - made either of wood, bamboo, steel, or aluminum
2. Tying and Bagging materials - (plastic)
3. Paint Brush
4. Cutting tools and Topping Knife
5. Sterilized Soil Medium
6. 2 parts sand + 1 part garden soil or 2 parts coir dust + 1 part organic fertilizer + 1 part garden soil
7. Inorganic and/or organic fertilizers
8. Fine screen
9. 4" x 6" polyethylene plastic bags
10. Sprayer, fungicide, and insecticide
11. Basin
12. Clean Water
13. Green house or shaded area

Advantages of using seeds

- → Can be easily produced
- → Low Cost
- → More resistant to drought and diseases

SEED ACQUISITION METHOD

A. Assisted / Manual Pollination Process

1. Identify an abaca plant which is about to bear fruit

a. In the absence of diagnostic test, choose an apparently healthy abaca plant of a desired variety.

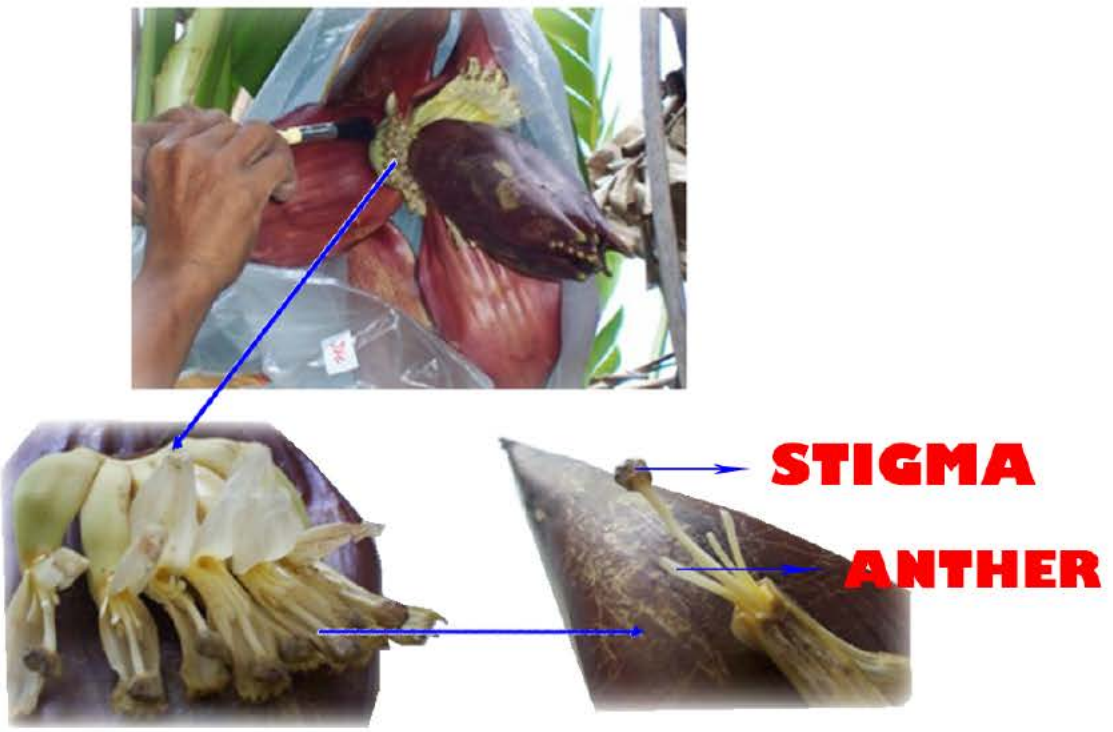
b. Tag the plants.

c. When the bud is about to bend, wrap the bud using a big plastic bag or sack.

II. Undertake Manual Pollination

a. From 5 to 6 o'clock in the morning pollinate manually the newly opened flowers using a fine brush.

b. Brush the anther (male part of the flower where pollens are found) to get the pollen and brush it to the stigma (female part).



c. Cover the bud again with the bag. Repeat the manual pollination every morning until all fingers are formed.

d. After fruit setting is completed, remove the bag and the male bud.

e. Harvest the fruit bunch when fully matured (about 4 months from flag leaf initiation)

B. BUFFERED ABACA AREA

- An open-pollination method.
- Buffered abaca area must be at least 0.5 to 1 hectare.
- Area should be planted with a homogenous variety.
- Fruit bunch is harvested within the inner area surrounded by a buffer of 10 meters from the periphery of the area.

STEP-BY-STEP PROCEDURE IN THE PRODUCTION OF SEEDLINGS

STEP 1. PREPARATION OF SEEDS

A. RIPENING

1. Allow the fruits to ripen by simply hanging the bunch or putting inside a plastic sack.

B. SEED EXTRACTION

1. Pull out the ripened fruits from the bunch (yellow - brownish - black in color)

2. Extract the seeds in a basin with water.

3. Sow the seeds right after extraction to attain higher viability.

4. If immediate sowing cannot be done, air-dry the seeds for one (1) day and store in a cold storage for a maximum period of 2 months.

C. SEED TREATMENT

1. Subject the seeds to free flowing water overnight.

2. After soaking, drain the seeds and cover with plastic so that no oxygen can enter during the three (3) nights of incubation.

STEP 2. PREPARATION OF GERMINATION BOX

a. Prepare the seed germination box just before you sow the seeds.

b. Germination box can be made out of wood or plastic container.

c. Use vermicast or pure lugimit compost as growing medium.

STEP 3. SOWING OF SEEDS INTO THE GERMINATION BOX

a. Sow the seeds in the prepared germination box / container lined with 2 cm thick fine sand topped with 1 cm thick vermicast or lugimit compost and cover the sowed seeds with 1cm soil medium.

b. Treat with organic-based liquid fertilizer (growth hormone 1:100 ratio) after sowing and every 3 days or as needed until the bottom is dripping. Use a bottle sprayer ensuring that the top medium is not washed away thereby exposing the seeds.

c. Germination will start after a week.

STEP 4. PREPARATION OF BAGS

a. Prepare black PE bags (4x6 in. for non-commercial or 3x6 in. for commercial)

b. Use soil media - 1:2:7 parts of vermicast, rice hull / saw dust and garden soil and mix them thoroughly.

c. Fill each bag with the soil media.

STEP 5. PREPARATION OF BEDS & ENCLOSURE

a. Arrange the soil media-filled bags very well in a bed of 1m x10m.

b. Leave space for alleys in between beds at 1.5 ft. wide.

c. Establish fence to restrict stray animals like dogs from entering.

STEP 6. BAGGING & PRICKING OF SEEDLINGS

a. After 21 days from germination, seedlings are ready for bagging/planting in bags. Soak seedlings into organic-based liquid fertilizer at 1:100 ratio.

b. Use a small stick to prick holes in the bagged soil media. Carefully plant one seedling into the hole then slightly press the soil at the base of the seedling to avoid damage on young seedling.

STEP 7. CARE OF SEEDLINGS

a. Right after planting, fully cover the bed with black cloth for a week and mist the cover to maintain the moisture and prevent dehydration;

b. After a week, take up the black cloth. This time, cover seedlings every afternoon only between 4:30 pm to 9:30 am for another a week but water everyday before covering;

c. After two weeks, totally remove the black cloth. Gradually expose to sunlight during morning between 6:00 to 10:00 am after 2 weeks from bagging;

Sample of lanky seedlings a week after planting in bags.

d. Fertilization is done once a week through foliar spraying of diluted 2 tablespoonfuls of 14-14-14, 2 tablespoonfuls of 21-0-0 in a gallon of water;

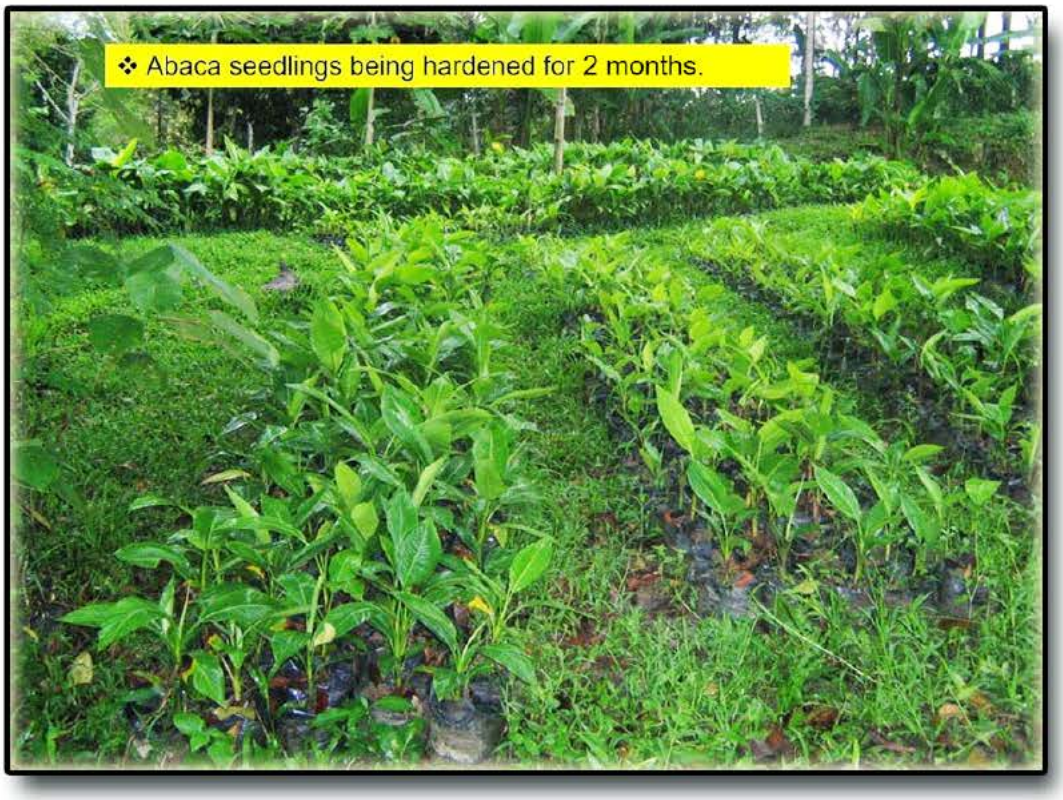
e. Water plantlets every day between 10:00 am to 12:00 nn. The volume of water to be applied depends on the soil moisture. When desired soil moisture is attained, spray water on leaves only between 10:00 am to 12:00 nn;

f. To control dumping-off, spray with beniate or aliete fungicide at recommended rate. For pest, use green labelled contact insecticides;

g. Remove weeds by hand pulling every other 2 weeks;

h. Segregate the seedlings and group according to same sizes when necessary to have uniform growth and development; and

i. Harden seedlings for 2 months;



j. Transplant seedlings to the field as soon as the plants have 5-6 leaves.

IDEAL STAGE: 5-6 Leaves

REFERENCES:

- Protocol on Abaca Planting Materials Production Through Seed Propagation - PhilFIDA
- Farmers' Manual on Abaca Production - PhilFIDA
- Techno guide on Abaca - PhilFIDA
- The Abaca - International Documentation on Abaca, UPLB

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