



MISSOURI BOTANICAL GARDEN  
Madagascar Research and Conservation Program  
NAP Agnalazaha



## OBSERVATION AFTER ONE MONTH OF THE EXPERIMENTATION IN THE NURSERY OF DARWIN INITIATIVE HEDGES AGNALAZAHA



*Acacia hedges*



*Syzygium emirnencea*



*Garcinia seedling*

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## **I. INTRODUCTION**

To ameliorate the competence of the nursery team of Darwin Initiative Hedges project, various techniques and advice were learned and practiced in July.

## **II. OBJECTIVE**

Promoting the competence of nursery team.

## **III. METHODOLOGY**

1. Plants production by seeds
  - a. Collecting and sowing seeds
  - b. Transplanting
2. Plants production by vegetative means
  - a. Cuttings practice
  - b. Layering practice
3. Preparation of coconut fibers

## **IV. RESULTS**

One month later of the experimentation, the following results were observed.

### **1. Plants production by seeds**

#### **a. Collecting and sowing seeds**

Coconuts fibers were chopped and used as mulch and seedling substrate. After observations, mulching is effective against the beating force of raindrops, keep the humidity of the substrate and especially prevent the proliferation of weeds and moss. As a substrate, coconut fibers promote water infiltration which prevents the proliferation of moss. The two photos below show the difference of using coconut fiber between not using this material.



Photo 1: Substrate without coconut fiber



Photo 2: Substrate with coconut fiber



Currently it is the period of fruiting and maturity of *Asteropeia multiflora* but the method of germination of its seeds is still undetermined. So germination trials are underway using the following types of treatment and substrate:

- Type of treatment:

- Scarification;
- Pulping;
- Without treatment;

– Types of substrate:

- Pure sands;
- 1/3 compost + 1/3 sands + 1/3 soil;
- 1/4 Soil + 1/4 sand + 1/4 compost + 1/4 coconut fiber

A few seedlings of *Asteropeia multiflora* were made in plastic bottles to avoid the beating force of raindrops. None germination was observed until now.

A *Garcinia* seed has been scarified and sown directly in a pot and we are waiting for the germination.



Photo 3: Substrate with coconut fiber



Photo 4: *Asteropeia multiflora* seedlings in bottles

Until now, no germination were identified on these experiences.

### **b. Transplanting**

6 plants were tested, including 3 plants using the substrate composition "1/3 sand + 1/3 compost + 1/3 soil" and 3 other plants using the composition "1/3 sand + 1/3 compost + 1/3 soil + 1/3 coconut fiber". Firstly, the observation showed that plants growth well without coconut fibers than with its materials. This difference is maybe in cause of compost quantity because the first case is 1/3 but the second case is 1/4. Secondly, the observation showed that the formation of weeds and moss appeared for the first case while no trace of weeds or foam found for the second case. The two photos below show transplanted without coconut fiber in the left range and with coconut fiber in the right range.



Photo 5: Upper view



Photo 6: Profile view

## 2. Plants production by vegetative means

### a. Cutting practice

The “bouturage” of "Tsiafak'omby or Fantsinakoho" continues so 409 slips of this species were made using the cutting and heel cutting methods. Among these slips, 14 cutting and 16 heel cutting were enclosed in a plastic bag from which all leaves felled one month later and the formation of new leaves were begun. Inside this bag, 6 cuttings were put in a plastic bottle, 1 to 6 of which remain green and no new leaf formation however all leaves of the rest was felled and new leaves was observed.



Photo 7: Leaves formation in a plastic bag



Photo 8: Cuttings inside a bottle

Somes slips were took by the top, which is very narrow, because of the wind and during the watering.

### b. Layering practice

During the practice 18 layers were made whose 8 air layering and 10 simple layers.



Tableau 1: Layering practice

Family	Genus	Number	Type of layering	Observation
ANNONACEAE	<i>Annona</i>	7	air layering	no root
FABACEAE	<i>Gliciridia</i>	1	air layering	no root
ASPARAGACEAE	<i>Dracaena</i>	7	simple layering	1 observed with roots formation
MORINGACEAE	<i>Moringa</i>	3	simple layering	Destroyed maybe involuntary by the land owner



Photo 9: Air layering



Photo 10: Simple layering of *Dracaena* which roots

### 3. Preparation of coconut fibers

Two mortars and four pestles were bought to chop the coconut fiber. So all available coconut fibers were chopped up and some quantities were used for sowing and repotting.



Photo 11: Coconut fiber mulching



Photo 12: Powdering coconut fibers with new mortars and pounders

### Conclusion

In substrate and mulching, coconut fiber is efficient to prevent weeds and foam found. It favors water infiltration. But until now, plants growing are no different with the substrate without this material. So, we will try to add more compost in the next experimentation.

One of the cutting and heel cutting remain green if all rests felled leaves and new leaves formation begun. Some slips were took by the top which is very narrow so the team will try these technics in a more large plastic bag.

For the layering practice, a *Dracaena* simple layering observed was with roots and all rest will be to observe. All airs layering were in waiting of roots formation. The practice on the *Moringa* was destroyed involuntary by the land owner.

For the hedge practice, all the *Acacia* trees remain alive excepting one tree which is die.