

Moringa oleifera

a) Species and family

1) Species

-Species: *Moringa oleifera* Lam

-Synonym: *Moringapterygosperma* Garetn.

-Vernacular name:

-Khmer name: Mrum

-English: Horseradish tree

-French: Ben aile, noix de ben:

2) Family: Moringaceae

b) General information: a shrub or small tree with height ranges 3-10m, originated in India and Pakistan. In Cambodia, people plant it in their gardens for multiple uses: young leaves is used for vegetable, all leaves is for cattle feeding. Bark is used for traditional tonic medicine of ladies after releasing from pregnancy mature seed can be used for oil extraction. And the oil can be used as a cooking or added to perfume for long term of fragrance.

Fruit is long and round with green color when it is young and brown when mature.. Each fruit contains 5-20 seeds depending on fruit size, and the seed is surrounded by white thin layer of membrane which by this structure seed firmly sticks to the fruit.



Picture1: Leaves of *Moringa oleifera*



Picture2: Flower of *Moringa oleifera*



Picture 3: Mature fruit

c) Collection: Mature fruit was collected by cutting small branches containing of mature fruit. Then, fruit picked and kept in clothes bags and shipped to seed lab.

d) Seed processing: In seed lab, fruit were tore along fruit side and seed was collected by breaking white thin layout surrounded seed. Then, seed was dried and removed the layout, before testing and storage.

e) Testing:

1-Background

-Collection date: 23 May 2002

-Collection site: Ta Prum village, Prek Eng commune, Kien Svay district, Kandal province.

-Amount of fruit: 250 fruits

-Amount of seed: after processing: 0.5 kg

2-Initial test:

- Test site: seed lab

-Test date: 24 May 2002

-Initial moisture content: 12.34%

-Seed weight: 237.70g/1,000 seeds or 4,207 seeds/kg



Picture 4: Mature seed

Table 1: Result of germination test

Moisture content	Pretreatment	Start test date	Days for 50% germination		Total germination	
			Date	Germination	Date	Germination
12.34%	None	24/05/2002	30/05/2002	52%	10/06/2002	91%

Conclusion: Seed of *M.oleifera* does not contain any dormancy and gives fast and uniformity of germination.

3-Storage physiology:

After initial test, the seed was divided to 2 groups, kept in closed plastic bags and stored into two different conditions:

- Refrigerator at 10°C
- Ambient room

At specific periods, the seed was tested to study viability of seed affected by storage condition. The results are displayed below.

Table2-Results of Storage Physiology (*Moringa oleifera*)

Initial moisture content	Storage period	Storage condition	Actual moisture content after storage (%)	Germination rate (%)
12.34%	2 weeks	Fresh seed	12.34	91
		Cool room 10°C	8.40	90
		Ambient room	9.05	92
	1 month	Cool room 10°C	8.81	95
		Ambient room	8.91	95
	3 months	Cool room 10°C	7.89	92
		Ambient room	8.15	89
	6 months	Cool room 10°C	7.64	92
		Ambient room	8.90	87
		Cool room 10°C	6.56	78
		Ambient room	7.39	81

Conclusion:

Moringa oleifera seed could be stored over 9 months in closed plastic bags and in either condition: cool room with temperature is about 10°C and ambient room with viability of seed is very little change in period of 9 months of storage.

f) Comment for seed procurement:

Mature fruit of *Moringa oleifera* should be collected on time, because if fruit stick on tree for long time, the pod of fruit will open and seed can absorb moisture from atmosphere and could be caused of seed damage. Fruit should be collected on March-May when fruit is brown, dry and pod still close. After collecting, fruit should be dried for 2-3 days, and then pod should be tore along fruit side and seed should be removed by hand from the pod. After removing, seed should be dried under sunlight for 2-3 days more and white thin layout surrounded should be squeezed by hand and removed by blowing.

For sowing, seed can be soaked in normal water for over night or can be sown directly to nursery bed without soaking.

If seed need to be stored, after drying, seed should be kept in an airtight container and placed in shade place or in cool room if possible.