

Examining germination rates of seeds of physic nut (*Jatropha curcas* L.) from Philippines and Vietnam

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Jatropha curcas

- Perennial shrub of tropics and subtropics
- Low requirements
- 30% inedible oil in seeds (0.5t – 3t seeds/ha)
- Plantations worldwide (wild collection of plant material)

Propagation of Jatropha

Vegetative	Generative
+ Genetics/origin known	- Unknown genetics
- Disease transmittance	+ Disease free
- Shallow rooting system	+ Tap root
+ Earlier yield (after 6 months)	- First real yield after 5 years
- Reduced vigor/lifetime	+ Longer lifetime of plantation

Fig. 1: Comparison of vegetative and generative propagation

- Elite varieties developed
- Breeding: time consuming and expensive
- Expensive seeds
- High germination rate important
- Do *Jatropha* seeds show dormancy

Jatropha in Son La (V) and Leyte (P)



Fig. 2: Locations of Son La and Leyte and examples of *Jatropha* growth

- Son La: nearly every property fenced by *Jatropha*
- Leyte: sporadic occurrence; ornamental plant

Germination test

- Two factors:
 - Ripeness of fruits
 1. Yellow fruits (surface 0-25% black)
 2. Yellow black fruits (25-75% black)
 3. Fresh black (75-100% black)
 4. Old black (dried up fruits)
 - Storage time
 1. Sown directly
 2. Stored for 20 days



Fig. 3: Different ripening stages of fruits

Pre-treatment of seeds

1. Soaking in water
2. Soaking in growth hormone
3. Soaking – drying - soaking
4. Control



Fig. 4: Sprouting seeds of germination test

Results

origin	fruits storage	dried black	fresh black	yellow black	yellow
		51	41	80	92
Leyte	stored	51	41	80	92
	fresh	0	1	7	2
Son La	stored	46	55	67	78
	fresh	51	49	16	11

Fig. 5: Germination rates of seeds from Son La and Leyte

- Higher germination after storage
- Lower GR of fresh seeds in Leyte
- Harvested during rainy season
- Seeds of yellow fruits better
- Survival rate after soaking higher

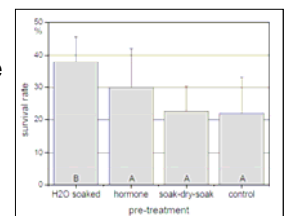


Fig. 6: Survival rate of pre-treated seeds

Conclusions

- *Jatropha* seeds show dormancy
- Dormancy can be broken after 20 days storage
- Soaking seeds in water before sowing increases survival