



## RESEARCH NOTE II

## Agronomy of *Gloriosa superba* L.

*Gloriosa superba* L. is an economically important medicinal plant and suitable for the sub-tropical and tropical regions of State (Selvarasu and Kandhasamy, 2012; Yadav *et al.*, 2012). It is one of the economically significant plants, which fetch good market in the south of Sikkim (Pradhan, 2023).

The research note covers the writing on the technicalities of *Gloriosa* along with short economic analysis. However, this economical analysis is subjected to the localities and market values.

The agronomy of *Gloriosa* is as under:

### Land preparation:

1. Remove stones
2. Prepare Bed of 20 inches breadth and Height 1 foot

### Manuring

1. Manure + soil ratio is 1 : 1
2. Cow dung and goat manure ratio is 9:1

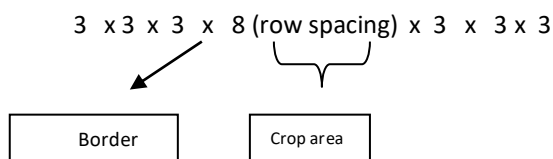
**Plant spacing** : 6 inches

**Row to row distance:** 8 inches

**Weeding:** Once in month

**Bed size for Rhizome:** 20 inches

### Break-up of size



**Bed size for Seed propagation:** 22 inches

**Slope of the bed :** 15 °

**Importance of Drainage :** Avoid the blight disease in the crop

**Why to make the spacing in between the plants:** To get the proper size of the rhizome

**How to conserve the manure for the successive year:**

1. Dust/ powdered manuring
2. Manuring should be done within the canopy of the plants
3. Unwanted area manuring should be avoided.
4. To keep the soil healthy, the manure should be covered with soil.

**Deepness to sow the seed/ rhizome on the ground:**

1.5 times the size of rhizome thickness or seed.

**Height of the bed for Rhizome:** 1 foot

**Height of the bed for seed:** 6 inches

**Bed to bed spacing:** 1- 1.5 feet

**Seed per 1 square meter:** 72-78 seeds

**Rhizome per 1 square meter:** 24-25 nos

**Seed requirement per Hal (1000 sq metre) 1.5-1.65 kg**

**Seed requirement per Hectare 10-12 kg**

**Rhizome requirement per Hal in hill: 9000-9600 nos/ 1.2 -1.5 quintals**

**Rhizome requirement per Hac in a hill: 90000- 96000 rhizomes no per hectare/ 12-15 quintals**

**Average cultivatable area in the hill / Ha: 4000 sq metres**

**Cultivation period of Gloriosa: 170-180 days**

**Mode of propagation: Seeds and rhizomes**

**Mode of propagation for rhizome:**

- i) Dividing the unequal V shaped tuber into two halves
- ii) Placing the rhizome tips unidirectional for easy harvesting.

**Irrigation:** Unless the field land is dry, irrigation is not mandatory.

<b>Technique to cross pollination:</b>	Pollination by the bee/ pollen spraying/ by hand
<b>Flowers from single plant:</b>	20-25
<b>About the flowering:</b>	Good flowering observed in rhizome having more than 5 inches length.
<b>Open area seed production:</b>	50 seeds per pod
<b>Unopened area seed production:</b>	10-12 seeds
<b>Seed production per Hal</b>	Without pollination 8-9 kg; with pollination more than 20 kg.
<b>Rhizome production per Hal:</b>	28800 rhizome no/ 3- 4.5 quintals
<b>Rhizome production per Hac:</b>	288000- 300000- nos or 30- 45 quintals
<b>Size of rhizome produced from seed :</b>	1.5- 2.5 inches long
<b>Why to cultivate <i>Gloriosa</i> :</b>	to collect the Colchicine

#### **Farmers' problems**

1. Blight disease of *Gloriosa*
2. Early deflowering
3. Less fruiting

#### **Solutions**

1. If the soil is moist / rainfall is high, grow the plants in the sloppy area/ make the bed 15° C slope.
2. Always avoid the water logging.
3. Before the onset of rainy season, check the bed whether the water can be logged or not.
4. Fortnight spray, after the onset of rainy season for two months, is mandatory.
5. Cover the bed with the dried plants leaves and other.

**Note:** After the attack by the causal organism, the spray may prolong the plant life but the fruiting would be affected.

#### **Tips to increased income**

1. Buffer area, where the wild animals mance exists, the crop, *Gloriosa*, is suitable.
2. *Gloriosa* cultivation can be cultivated twice in a year.

- i) Feb- March to August – September for rhizome
  - ii) August- September – December- January for seeds
3. Seed production is prime target products for sale .
  4. Rhizome of *Gloriosa* can be used for area expansion.

#### **Economics of *Gloriosa* plant**

##### **Rhizome Production per 1000 sq metre**

9000 -9600 x 3 rhizomes per plants

27000- 28800 rhizomes per **1000 sq metre**

**Gross Income** : 28800 x @2.5

Rs 72000/ **1000 sq metre**

**Rhizome Production per 1 Hectare ( 10000 sq metre)** (10 Hals = 1 Hectare; 1

Hal: **1000 sq metre**)

90000-96000 rhizomes per Hectare

**Gross Income:** 90000-96000 rhizomes x @2.5

App. Rs 7.2 Lakhs

**Seeds Production per 1000 sq metre : 20 kg**

**Gross Income**

20 kg x @2000

= Rs 40000 / **1000 sq metre**

**Seeds Production per 1 Hectare ( 10000 sq metre) : 200 kg**

**Gross Income**

200 kg x @2000

= App. Rs 4.0 Lakhs / Hectare

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