Finger Millet (Package of practices)

Finger millet can be cultivated on various soil types and during different seasons across different regions of the country. A significant portion of the cultivation occurs under rainfed conditions, particularly in the Kharif season. Finger millet thrives in areas with moderate rainfall, ranging from 500 to 1000 mm annually. It can withstand low levels of rainfall, even as little as 130 mm, if well-distributed. However, its optimal performance is observed at around 900 mm of annual rainfall. Therefore, the crop is suitable to most parts of the Assam.

Agronomic Practices

Land Preparation: Fine seedbed and adequate moisture in the seedbed is conducive to good germination. Prepare the field by giving 2 or 3 ploughings followed by planking.

Sowing Time: Sowing should be done in the month of last week of July-August and Transplantation of 30-day-old seedlings in the first week of September.

Planting method:

Transplanting of seedlings: 25-30 days old seedlings are transplanted in the month of September. This will help reducing the weed problem in high rainfall areas, particularly in Assam.

Varieties: Use the seeds of AAU-GSG-Maruadhan-1(Gossaigaon Marua Dhan-1), Chhattisgarh Ragi 3 (BR-14-3), Vegavathi (VR 929), VL 376, GPU 67, PR 202 varieties for planting.

Seed Rate: A seed rate of 12 kg ha^{-1} is recommended.

Seed treatment: Treat the seed with Propiconazole @1ml/kg of seed.

Sowing/Planting/Spacing:

Line sowing is beneficial as it helps in effective intercultivation and weed control. The maintenance of an optimum plant population of 4-5 lakh plants per hectare is achieved through line sowing using a seed drill, with a spacing of 22.5-30 cm between rows and 7.5-10 cm between plants.

Seed bed: To facilitate seed sowing, prepare a raised seed bed (10 – 25 cm) measuring 10 × 1.25m, with a gap of 30 cm between the beds. Apply 20-30 kg of cow dung per bed and mix it thoroughly with the soil. Sow 150g of seeds per bed.

Fertilizer Application

Apply the following fertilizer doses to Finger millet:

Apply Farmyard Manure (FYM) or Compost at a rate of 5 tons per hectare or 6 quintals per bigha. This practice enhances the quality of the crop and contributes to improved root growth development.

Nutrient	Requirement (kg/ha)	Form	Fertilizer requirement	
			kg/ha	kg/bigha
N	40	Urea	88	12.00
P2O5	20	SSP	125	16.50
K2O	20	MOP	32	4.25

Apply 50% of the full doses of FYM, P2O5, and K2O as basal fertilizer, and apply the remaining 50% of nitrogen (N) as a top dressing 30 days after transplanting.

Irrigation and Drainage

Depending on soil type, weather condition and duration of variety, 8-14 irrigations are necessary.

Light soils: During the tillering stage it requires irrigation but in later stages, subsequent irrigation not required.

Heavy soils: Irrigation required in once in 12-15 days.

Irrigations during the peak tillering, flowering, and grain-setting stages are crucial. Ensure to irrigate the crop when the soil moisture level reaches around 50% depletion.

Weed control.

Weed problems in ragi crops can be efficiently managed through cultural and mechanical methods.

Manual Weeding: The initial weeding should be carried out 20-25 days after transplanting, followed by subsequent weeding's as needed.

Line sowing: 2-3 inter cultivations and one hand weeding.

Broadcast crop: 2 effective hand weeding will minimize weeds.

In assured rainfall and irrigated areas: Pre-emergence spray: Isoproturon @ 0.5 kg a.i./ha.

(Rainfed areas), Oxyflurofen @ 0.1 lta.i /ha (Irrigated areas)

Post-emergent spray: 2, 4-D sodium salt @ 0.75 kg a.i./ha Spraying around 20-25 days after

sowing effectively control weeds.

Diseases

Finger millet is susceptible to several diseases whereas, blast caused by *Pyricularia grisea* being a significant issue. This disease is particularly severe during the kharif crop across all growth stages. The impact of the disease is more pronounced if it manifests in the nursery or affects the ears, leading to damage on the neck and fingers of the crop.

Management

a. Treat seeds with fungicides such as Propiconazole or azoxystrobin@ 2ml/kg of seed a day before sowing.

b. If needed, apply sprays of Propiconazole @1ml/litre of water.

c. Administer a fungicide spray at 50% flowering. Use Propiconazole or tebuconazole @1ml/litre of water to control neck and finger blast, repeat the spray 10 days later.

In recent times, brown spot disease, caused by *Drechslera nodulosa*, has been gaining significance. This disease's impact can be severe, especially when the crop is exposed to drought or suffers from nutritional deficiencies. Effective management of the disease

involves proper nutrition and water management. As required, spraying Propiconazole or azoxystrobin @1ml/litre of water can be employed.

Pests

Finger millet is susceptible to various pests, among which armyworms, cutworms, stem borers, leaf aphids, grasshoppers, grey weevils, shoot flies, and ear caterpillars are particularly significant.

Army worms and cut worms.

These pests emerge during the initial stages of growth and persist until the harvest period. Caterpillars tend to sever seedlings at the base during the early stages, resulting in an appearance like grazing by domestic animals. They are predominantly active during the night and take shelter under stones and clods during the daytime. As the plant matures, they transition into defoliators. These pests exhibit cyclic behaviour.

Control

When the symptoms are noticed take up dusting of Phasolone 5% @ 24 kg / ha

Stemborers

The larva bores into the stem, resulting in dead heart.

Control

Spray the crop with Chlorantriniprole @1ml/3litre of water

Crop harvesting and drying: Selecting the optimal harvest time for maximum grain yield and quality holds significant importance. It's recommended to carry out harvesting when approximately 75-80% of the panicles exhibit a yellowish colour. Sun drying of the grains on a clean threshing floor might be required to decrease moisture content, maintain viability and vigour, and enhance storage quality. It's essential to dry the grains to the recommended moisture level of around 12% to retain their viability and vigour.

Yield or Expected yield: 18-20 q/ha

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