

Crop 11  
**Finger Millets**  
*Eluesine coracana*

- Origin
  - Vedic literature says - India
  - Vavilov suggested – Abyssinia
- Plant type
  - Erect annual
  - Profusely tillering
  - Stem is compressed, elliptic
  - Leaves linear with distinct mid-rib
  - Leaf sheath completely envelops the stem
  - Leaves are arranged alternatively
  - Panicles of different shapes
    - Curved top
    - Incurved
    - Open
    - Fisty shaped
  - Average no. of spikelets per finger is 67-73
  - Each spikelet contains 4-6 flowers
  - Crop is self-pollinated
- Special features in India
  - Area remained almost constant
  - Production & Productivity increased
    - Due to better variety and management
  - It is a major millet in Southern part of India
  - It is cultivated for grain and forage
  - Cultivated up to an altitude of 2100m

Area in India

State	Million ha	Million t	T /ha
Karnataka	0.94	1.40	1.02
Maharastra	0.16	0.15	0.94
TN	0.14	0.30	2.11
UP	0.14	0.19	1.29
AP	0.10	0.10	1.04
India	1.71	2.31	1.35

Other states: Orrisa, Bihar, Gujarat, &W.B

- Climate
  - It is grown in tropics and sub-tropics
  - Mean temp of 26-29°C is best proper growth
  - Crop yield reduces below 20°C
  - Crop has good drought recovery
  - Transpiration coefficient is small
    - ½ to 1/3 of wheat

- High capacity for soil water uptake
- Grown well in RF of 500-900mm
- Soil
  - Wide adaptability to different soils
  - Very poor to fertile soils
  - Can tolerate salinity >pH 11.0
  - Best soils are alluvial, loamy and sandy with good drainage
  - Heavy clay soils with poor drainage less suitable
- Field preparation
  - Deep ploughing cum shallow harrowing at last
  - Fine tilth is essential
  - Form beds & channels with 10 to 20m-2
  - Provide irrigation channels at proper interval for irrigated crop
  - Apply FYM / compost before forming beds
- Varieties
  - Many cultivars are available
  - CO RA 14 – 105 -110 d
  - CO 13 – 95-100 d
  - CO 9 100 d
  - TRY 1 102 d
  - Paiyur 1 115-120 d
  - INDAF 5 105-110 d
  - GPU 28 110-115 d
- Time of sowing
  - As rainfed crop in Jun-July
  - First fortnight of June is best for rainfed
  - As irrigated crop more than one season in Karnataka, AP & TN
  - Under rainfed yield is affected by early and late sowings
  - In hilly areas of UP & HP it is sown in Apr-May itself
- Spacing & seed rate for rainfed
  - A spacing of 20-25cm row
  - 22.5cm was seen better than 15cm
  - Seed rate of 6-8kg
- For transplanting
  - 5 kg for nursery (12.5 cents, 18-20 d old)
  - 15 x 15 cm in TN
  - 30 x 7.5cm in some areas
- Stand establishment
  - Seed treatment is must
  - Seedling roots may be dipped azospirillum
  - 2 seedlings / hill
  - 3 cm depth
  - Thin the population in direct seeded crop to maintain optimum plant stand
- Irrigation
  - For rainfed crop too irrigation at tillering flowering can increase the yield
  - Irrigation at 50% depletion is sufficient

- It may be based on growth phases
  - Establishment 2 irrigations
  - Vegetative up to 25 days – 2 irrigations
  - Flowering – 25-55 d – 3 irrigations
  - Maturity – 56 – onwards – one or two
  - Stop irrigation after dough stage
- Nutrient management
  - Responds well to fertilizer
  - General recommendation
    - 60:30:30
  - But responds up to
    - 160 kg N
    - 50 kg P<sub>2</sub>O<sub>5</sub>
  - Application of Mg @ 50 kg and Ca @ 20 kg is also favoring crop growth
  - Half N & full P & K basal
  - Balance N at 15 DAT / 25DAS
  - Seed inoculation with bio-fertilizers is advantageous
- Weed management
  - Severe problem and controlling early (2-3 weeks) is very essential
  - Hand weeding gives satisfactory control of weeds
  - Herbicides like Butachlor 1.25 kg as pre-emergence for transplanted crop
  - For direct seeded crop post-emergence 2,4 DEE or 2,4 D Na salt @0.5 kg 10 days after crop germination
- Cropping systems
  - Under rainfed conditions mixed with sorghum, pearl millet and variety of oilseeds & pulses
  - In hilly areas mixed with soybean
  - Under irrigation grown in rotation with
    - Tobacco, vegetables, turmeric, gram, linseed, mustard
  - FM – sugarcane; FM – potato – maize; FM-rice etc
- Major problems
  - Diseases
    - Blast
    - Seedling blight
    - Downey mildew
  - Insect pests
    - Stem borer
    - Grass hopper
    - Ear head eating caterpillar
- Harvest
  - Ear head alone
  - Staggered harvesting is also done to collect differentially maturing ear heads
  - Ear heads are dried and manual / machine threshed
  - Straw may be harvested and dried for animal