

L08

Crop 11
Finger Millets
Elusine 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
Maharashtra	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 P₂O₅
 - 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