



RAMA
UNIVERSITY

www.ramauniversity.ac.in

FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

Rainfed Agriculture and Watershed Management

Lecture -8

STRATEGIES FOR DROUGHT MANAGEMENT

The different strategies for drought management are discussed under the following heads.

Adjusting the plant population: The plant population should be lesser in dryland conditions than under irrigated conditions. The rectangular type of planting pattern should always be followed under dryland conditions. Under dryland conditions whenever moisture stress occurs due to prolonged dry spells, under limited moisture supply the adjustment of plant population can be done by

- **Increasing the inter row distance:** By adjusting a greater number of plants within the row and increasing the distance between the rows reduces the competition during any part of the growing period of the crop. Hence it is more suitable for limited moisture supply conditions.
- **Increasing the intra row distance:** Here the distance between plants is increased by which plants grow luxuriantly from the beginning. There will be competition for moisture during the reproductive period of the crop. Hence it is less advantageous as compared to above under limited moisture supply.

Mid-season corrections: The contingent management practices done in the standing crop to overcome the unfavorable soil moisture conditions due to prolonged dry spells are known as midseason conditions.

- a) **Thinning:** This can be done by removing every alternate row or every third row which will save the crop from failure by reducing the competition
- b) **Spraying:** In crops like groundnut, castor, red gram, etc., during prolonged dry spells the crop can be saved by spraying water at weekly intervals or 2 per cent urea at week to 10 days interval.
- c) **Ratooning:** In crops like sorghum and bajra, ratooning can be practiced as a midseason correction measure after break of dry spell.
- d) **Mulching:** It is a practice of spreading any covering material on soil surface to reduce evaporation losses. The mulches will prolong the moisture availability in the soil and save the crop during drought conditions.
- e) **Weed control:** Weeds compete with crop for different growth resources or seriously under dryland conditions. The water requirement of most of the weeds is more than the crop plants. Hence, they compete more for soil moisture. Therefore, the weed control especially during early stages of crop growth reduce the impact of dry spell by soil moisture conservation.

Giving lifesaving irrigation & Water harvesting: The collection of runoff water during peak periods of rainfall and storing in different structures is known as water harvesting. The stored water can be used for giving the lifesaving irrigation during prolonged dry spells.

- Soil moisture conservation through watershed development, check dams, contour bunding
- Drought tolerant varieties
- Green manure treatment
- Vegetative barriers
- Rehabilitation of wastelands
- Continuous monitoring of the environmental variable is one of the ways to track the occurrence of drought
- Deepening of old wells, digging of new wells, drilling of boreholes
- Construction of multipurpose dams
- Timely availability of credit, postponement of revenue collection, and repayment of short-term agricultural loans
- Implementation of crop and livestock insurance schemes
- Early warning and drought monitoring should be carried out on the basis of long-, medium- and short-term forecasts
- Education and training to the people
- Participation in community programmes
- Bring public awareness of drought and water conservation
- Media awareness programme.