

Contingency Crop Planning: Avoid Risk of Aberrant Weather Conditions

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SUMMARY

To mitigate any unexpected, unusual, unfavorable and hence unwanted accidental weather situations occurring at any time without prior knowledge at any time before the crops are sown or even after the crops are sown. The contingency crop planning therefore is proposed to mitigate such situation through the choice of appropriate crop and varieties, cropping systems or other necessary relevant farm practices. After sowing of crops and early growth any unexpected or unfavorable weather abnormality like long dry spell of three to six weeks, drought/early cessation of monsoon may occur. Unexpected or accidental occurrence of unfavorable weather after sowing is contingency and crop planning to overcome this contingency

INTRODUCTION

Agriculture is the source of livelihood for nearly two-thirds of the population in India. The impact of climate change and variability in the country on agricultural production is quite evident in recent years. The weather aberrations like drought and floods extreme events like high intense excess rainfall, frost, hail storm, heat wave, cold wave etc. are becoming recurring phenomena in most parts of the country in the crop growing seasons. The South-West monsoon accounts for nearly 75% of the natural precipitation received in the country and exerts a strong influence on the kharif food grain production and on the economy in terms of agricultural output and farmers' income. The onset of South-West monsoon and the amount of rainfall and its distribution are crucial factors which influence the performance of agriculture. In rain fed areas, as a general rule early sowing of crops with the onset of monsoon is the best practice that gives higher reliable yield. But the crop yield is affect due to delay in monsoon or prolonged breaks during cropping season and also with early withdrawal or continuation of monsoon for longer periods. These aberrant situations often lead to poor crop performance or total crop failures in major crops. Contingency crop planning is also known by the term aberrant weather planning or mid-season correction.

Contingency cropping

The contingency cropping is growing a suitable crop in place of normally sown highly profitable crop of the region due to aberrant weather condition. In dry land agriculture, contingency of growing another crop in place of normally grown crop arises due to delay in the onset of monsoon.

Aberrant Weather situation

Aberrant weather is a common feature of rainfed agriculture. Crop production in dry areas is mainly dependent on rainwater. Long term historical data on rainfall indicate that the rainfall is seasonal, erratic and highly variable in time and space. Crop planning in an individual kharif or Rabi season is done on the basis of normal weather or climate expected from long term weather data. Vagaries of monsoon rains are proverbial in India, 'breaks' of varying duration being most common. Such unfavorable deviated weather from the normally expected one is called aberrant weather and is responsible for instability in crop production. Following aberrations in the rainfall are more common

- Early onset of monsoon
- Late onset of monsoon
- Dry spells during crop period
- Early withdrawal of monsoon
- Extended monsoon

Crop management options to mitigate the adverse effect of aberrant weather situation

Early onset of monsoon: - In such situation crops like bajra and sesame could be sown with advantage. Grain legumes, particularly green gram, cluster bean and moth bean etc. when sown early grow very vigorously and give poor yields.

Late onset of monsoon: - Management option under these circumstances are transplanting and sowing of alternate crop or variety.

Transplanting: - Seedlings are raised in the nursery under irrigation and transplanting is after receipts of rains e.g. Rice, Bajra, Finger millet are well adopted to transplanting.

Alternate crops/varieties: - Certain crops and varieties can perform better even if sown late in the season. Depending on the receipt of rain, such crops and varieties can be selected. For example Castor variety Aruna is more remunerative in red soils of Telangana than pigeon pea under late sown conditions. Sunflower, because of its shorter duration, performs better than groundnut when sowing are delayed beyond Sept. first fortnight in relatively deeper red soils.

Dry spells during crop period :- Dry spells during crop period are common in rainfed agriculture. Following measures are undertaken to mitigate the adverse effect

Ratooning / Thinning :- The rate of soil moisture deletion increases with increasing leaf area. If drought occur at 40-50 days after sowing, reduction in leaf area either by ratooning or thinning the plant population can mitigate the adverse effect. For example Sorghum and pearl millet responds to ratooning. Spraying of 2% urea after drought period is useful for crop like Castor, Pigeon pea and Groundnut.

Mulching :- Surface mulching with organic materials can extend the period of water storage in soil by reducing evaporation loss of stored water. Repeated inter cultivation in black soils result in formation of soil mulch on the surface. It acts as a barrier to evaporation loss from soil.

Weed control :- Weeds compete with crop for nutrients, water and other natural resources, Such competition for soil moisture can be reduced by timely weed control.

Water harvesting and protective irrigation :- In situ water harvesting and protective irrigation are the potent measures of crop life saving during periods of soil moisture stress.

Early withdrawal of monsoon :- Early withdrawal before rabi seeding leads to problem of crop stand establishment and terminal drought. Under such situation use of life saving irrigation, creation of soil mulch, lower plant population, use short duration varieties should be adopted.

Extended monsoons: - Extended monsoon is seldom a problem in rainfed agriculture. Postpone the sowings of rabbi crops. It is usual experience that extended monsoon results in cool spells. To combat the cool spell, sorghum may require replacement in certain cases. Gram and wheat may find place under such circumstances.

CONCLUSION

Contingency crop planning would certainly result in reducing the crop loss and productivity in the event of cyclone / flood and it forms the core component of prevention strategy. However, in case of post cyclonic phase, advanced crop management interventions and moisture conservation techniques should form the main component and they should be adopted by the farmers on large scale to sustain the cultivated land utilization index.

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