

Contingency Plan for Drought-like Situation in Assam: Few Proposals from the Assam Agricultural University

Entire state of Assam has been declared to have been affected by drought-like condition as the rainfall has been much less this year in comparison to the normal. Due to significant spatial variation in rainfall the severity of the drought-like conditions has shown variation according to places. It is note-worthy that the drought-like condition has occurred in the state at a time when the farmers should arrange to raise seedlings and prepare their land for transplanting the *sali* rice, which is the main crop of Assam. For many, this is the only field crop as in many affected locations farmers grow only *sali* rice under rainfed condition. The inability of the farmers to grow the main crop in time has really pushed the farmers to a very uncertain situation. Considering the urgency of the situations, the Government of Assam has initiated some actions to help the farmers to tide over the situation. Scientists from the University visited some affected areas and talked to groups of farmers at several villages at different points of time to obtain first-hand information about the drought-like conditions and also the possible impact of this calamity. Based on the field visits and information gathered from the affected farmers the scientists could understand that the drought-like conditions vary according to the farms and farmers warranting diverse contingency measures to help the farmers tide over the situation:

Observations

1. Rainfall has been almost normal since the last week of July. Although deficit continued till the later part of July, rainfall received at present has been almost enough for growing *sali* rice in almost entire Assam barring pockets spread across the state. Farmers are now extremely busy transplanting rice all over the state.
2. It is apprehended that there would be deficit of seedlings for planting the *sali* rice crop as
 - many farmers could not sow the required quantity of seeds for raising sufficient seedlings,
 - many others opted for raising seedlings on dry seedbed where germination of seeds might not be as good as under wet seedbed,
 - a good proportion of the seedlings raised in due time, as normally done, have become over-aged and a sizable proportion of the seedlings is hit badly by drought and diseases, and
 - timely raised seedlings will be too old to use as the farmers may have to stagger transplanting the *sali* rice till very late to cover the fields due to shortage of man and animal power.
3. Fortunately, based on their experiences and wisdom, the farmers in many places managed to sow the seeds of traditional rice varieties late in the season to meet the seedling needs as these varieties are better suited for late sowing and planting than the recommended improved varieties. Even then, the farmers may require support in terms of seedlings and/or seeds of appropriate varieties.

4. The farmers will require guidance and support for taking care of the standing crops, to cover the rice fields and also for growing the pre-rabi and rabi crops.

Contingency Plan, 2009

1. Raising seedlings

- For arranging seedlings now, the only practically feasible option is to go for the very early maturing varieties (about 100 days) such as Luit, Dishang, Kolong, Dikhow, Heera *etc.* or any other varieties which will come to flowering within October (latest by 1st week of November at the worst situation). Naturally, locating the seed sources of such varieties and also supporting the farmers to obtain the seeds will be important tasks for the field level extension functionaries. As these varieties have been recommended specifically for the flood affected areas, effort may be made to find the seeds of these varieties in the chronically flood-affected areas. For last several years, farmers have been procuring the seeds of these varieties in large quantity and the State Dept. of Agriculture and Assam Agricultural University have also been distributing the seeds of these varieties among the farmers.

2. Crop care

- The seeds to be sown should be treated for 24 hours against diseases with suitable fungicides (such as Mancozeb, Captan, Carbendazim at the rate of 2.5 g/l of water for 1 kg seed).
- The farmers may be suggested to use 21-25 days old seedlings and adopt closer spacing of 15 cm × 15 cm for transplanting with the late sown seedlings as mentioned above.
- When planted with relatively aged seedlings, the farmers are to be suggested to use more number of seedlings (4-5 seedlings per hill) with closer spacing of 20 cm × 15 cm and ensure application of at least recommended dose of fertilizer.
- The farmers should be encouraged to use seedling root-dip treatment (the uprooted seedlings are washed and then the root portion is dipped in 0.2 % solution of Chloropyrifos *i.e.* 1 ml/l of water along with 1 % urea for 3 hours) as a protective measure against stem borer, gall midge and hoppers in the field. As alternative to this, the farmers may use Carbofuran at the rate of 3 g/sq m in seedbed 5-7 days before uprooting seedlings or spray Chloropyrifos @ 0.05 % in nursery.
- Considering the possibility of weed infestation due to inadequate puddling and non-availability of ponding water the farmers may be suggested to use suitable herbicide (Butachlor @ 1.5 kg a.i./ha or Pretilachlor @ 0.75 kg a.i. /ha or Anilophos @ 0.4 kg a.i./ha at 3 days after planting).
- For the standing crops which are facing moisture stress in the main field the farmers may be suggested to go for foliar spray with Muriate of Potash (MOP) @ 0.5-1.0 % solution

3. Direct sowing of *sali* rice

- In the event of non-availability of seedlings and constraints of transplanting rice crop due to shortage of man and animal power, the farmers may opt for growing the above mentioned early maturing rice varieties following direct sowing of seeds on the puddled field with sprouted seeds depending on the suitability of the field conditions.
- The direct seeded crop can be harvested at least one week earlier than the transplanted one and hence sowing of these varieties can be delayed till the end of August.
- It is always advisable to arrange sowing of the seeds in line to facilitate better management and also to ensure optimum plant population.
- For the direct seeded crop, it is also advisable to use herbicide for weed control (use the above mentioned herbicides within 3-7 days of sowing).
- It must be remembered that, under no circumstance, direct sowing can be delayed beyond 1st week of September.

4. *Kharif* pulses

- In upland and medium lands where farmers fail to grow rice, they should be guided and duly supported for growing black gram and green gram during end of August to mid of September with provision of surface drainage (25 cm wide and 15 cm deep drains spaced at 6 m distance) if required.

5. *Rabi* crops

- It is necessary to put in place a massive programme for encouraging the farmers to grow *rabi* crops. For this, the farmers may be supplied free of cost the seeds of appropriate crops (based on land suitability/farmers' choice). *Toria* will be a natural choice in many places.
- Arrangement of expanding irrigation facility, particularly, *via* installation/renovation of STW may go a long way to compensate the farmers for their loss in the *sali* season.
- Very often, soil moisture does not come down to a level which is necessary to permit the farmers to perform primary tillage operation for *rabi* crops thus delaying opening the land and consequently sowing the *rabi* crops. Besides, engagement of farmers in harvest and post-harvest operation of *sali* rice till very late also contribute to delay in sowing the *rabi* crops. This time, the problem may be much widespread than earlier as the farmers who used to grow medium duration rice varieties are also compelled to grow traditional *sali* rice varieties which will be ready for harvest much later in comparison to the improved varieties. The farmers may be encouraged and helped to grow *rabi* crops by providing free service of ploughing the land at least for once.

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