Hailstorm Havoc in Nongthymmai Village: Crop damage and possible adaptation strategies

Among different extreme and harsh climatic events, hailstorm (HS) have been one of the major abiotic stresses in agriculture. Thousands of farmers lose their produce and livelihood just in a moment of extreme hail storms. The glaring example of 2014 hailstorm damage is the recent one that occurred in Maharashtra. There was almost cent per cent damage to crops in the field. To tackle the situation, Govt. declared almost 1000 crore package in the state. It is learnt that the grapes were ready to be harvested, but farmers were waiting for a good price. The HS completely devastated the grape fields leaving farmers debt ridden. Farmers could have earned some returns, had they harvested in regular intervals. Few local HS events of North Eastern Region such as few in Tripura (April) caused 70% crop damage, livestock and property also suffered badly. Though HS cannot be managed or no remedial measures are available yet to manage hail storm.

A severe Hailstorm event has damaged the standing crops (potato, tomato, capsicum cucumber etc.) badly on 3rd May, 2014 (Saturday) at Nongthymmai Village and surrounding area (Umroi), Ri-bhoi district, Meghalaya. The damage was to the tune of 70 -90%. Maximum damage was in tomato, potato, capsicum etc. There affect was severe on human, livestock and property due to HS. The village is adopted under NICRA for Technology Demonstration Component (TDC) by the ICAR Research Complex for NEH region, Umiam, Meghalaya to showcase various technologies related to climate resilient agriculture.



Comparision of crop damage before and after the damage



Every problem offers some opportunity. There are some agricultural options which are relatively climate resilient. After severe HS of Maharashtra it was learnt that, while all crops were damaged completely, the sugarcane crops were relatively less affected. Thus, farm diversification is the best option for combating the successive problems of HS. Root crops (economic portion below ground) and fruit crops should be mixed to minimize the loss. Livestock and fishery are the important component to get relief from devastating damage of HS and other such extreme events. A timely forecast can alarm the farmers and, vegetables, fruits and other farm produce can be harvested prematurely to get some income. Staggered planting is another option to reduce the HS damage. If no preventive measures were adapted, then it is best to harvest all the produce (mature and premature one) and sell them immediately even at low price to get some returns.

Since HS is a regular phenomenon and occurs mostly during pre-monsoon season (April-May) every year, the line departments and other stakeholders should come together and work out some implementable schemes. Crop insurance is another such option to save farmers from misery of extreme climatic events. Village Climate Risk Management Committee (VCRMC) should advise the local farmers and adopt appropriate strategies for the locality in discussion with line department and Research Institutes. Appropriate training must be provided to the VCRMC members by the Research Institutes and Extension Departments.

More awareness and knowledge dissemination strategies should be adapted to tackle such situation in future in the Region. Some strategies for compensating farmers should be also worked out.

Following contingency measures are advised to reduce the HS damage and other extreme climatic events in future.

A. Preventive measures

- 1. Farm Diversification (judicious integration of crop, vegetables, livestocks, fishery etc)
- 2. Intercropping system
- 3. Staggered planting (Planting at 15 days interval instead of planting on damage date)
- 4. Identify the crops that are relatively not affected by the Hailstorms and include them in the system
- 5. Harvest standing crops in the field if a hailstorm is predicted.
- 6. Never leave matured crop in the field

- 7. Harvest at regular interval and start harvesting from physiological maturity stage.
- 8. Depending upon local demand, crops like potato, cucumber etc. can be harvested even if they are not properly matured.

B. Steps to be adopted after hailstorm

- 1. Harvests immediately all the produce and grade them as damaged and not damaged
- 2. Sell the produce immediately even at low price
- 3. Wherever cold storage facilities available, damage free produce can be stored.

4. In case of an early season crop, the field can be replanted immediately with same or other suitable crops.

5. Maize can be planted up to mid May.

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