

**ICAR-Indian Institute of Maize Research and
All India Coordinated Research Project on Maize
PAU Campus, Ludhiana**

Advisory for maize farmers in view lockdown to contain Corona (COVID-19)

Rabi maize grain is highly valued by the industry for the grain quality due to proper grain filling and bold grain size. As per the second advance estimate during *rabi* season 15.54 lakh ha is under maize cultivation (Table 1) and expected production is 82.19 lakh tonnes. In *rabi* maize area Bihar tops with 278 th ha representing 18% closely followed by West Bengal with 211 th ha (14%) and Maharashtra with 198 th ha (13%). Other important *rabi* maize growing states are Andhra Pradesh (183 th ha), Tamil Nadu (181 th ha), Telangana (163 th ha), Gujarat (129 th ha), Karnataka (87 th ha), Uttar Pradesh (59 th ha) and others (Rajasthan, Madhya Pradesh, Jharkhand, Odisha etc.). Among the main *rabi* maize growing states, Andhra Pradesh is having highest productivity (7678 kg/ha) followed by Tamil Nadu (5468 kg/ha), Telangana (5383 kg/ha) and West Bengal (5158 kg/ha). The state of Andhra Pradesh and Telangana are the most important source of hybrid seeds for whole India, which is produced mainly during *rabi* season. In the recent past, West Bengal is also coming up as an important hybrid seed-producing hub in the region. Hence, the farmers and state functionaries with other stakeholders need to take all necessary measures to safeguard maize crops along with safety from COVID-19 in this lockdown period.

Table 1: Second advance estimate of *rabi* maize area (000 ha) in various states and current growth stage during 2019-20.

| State | Area | Current growth stage |
|----------------|--------|--------------------------|
| Bihar | 278.4 | Grain filling |
| West Bengal | 210.6 | Grain filling |
| Maharashtra | 198.3 | Near harvesting |
| Andhra Pradesh | 183.0 | Harvesting |
| Tamil Nadu | 180.7 | Harvesting |
| Telangana | 163.0 | Harvesting |
| Gujarat | 129.4 | Harvesting |
| Karnataka | 87.4 | Near harvesting |
| Uttar Pradesh | 59.0 | Grain filling |
| Others | 64.6 | Grain filling/harvesting |
| All-India | 1554.4 | |

Peninsular Zone (PZ)

The peninsular zone is important *rabi* maize production ecology where the crop is grown over 8 lakh ha to ensure good quality maize grain for feed and starch industry. The crop is at grain filling/maturity stage in most of the cases. In this ecology, maize is near harvesting, whereas particularly in seed production area harvesting has already started. In Peninsular India, where the crop is in the harvesting stage the lockdown will affect harvesting, drying and shelling operations partly. The seed production, processing, packing and transportation will also be affected. However, since mostly the harvesting and processing operations are

mechanized the operations can be completed quickly without much group activity. It may be noted that in many cases the seed production and processing plants are physically separated, some cases in two states (Andhra Pradesh and Telangana). Interstate movement of seeds should not be hampered due to lockdown. Interstate movements of combined harvesters are allowed, which eases out the operation. However, since the drivers/operators of combined harvesters or seed transporting vehicles move from one state to another there will be the apprehension of the spread of Covid19. Under this situation, such drivers/operators may be allowed to work/stay in strict isolation to undertake harvesting operations without mingling with the masses. Their health is to be carefully be monitored for any corona like symptom. Safety measures for social distancing, mask and sanitizing should be taken care of while harvesting and proper drying of maize before marketing. Locally known and available labours should be preferred for harvesting and field operations to avoid movement of labours. The seed processing units should be allowed to operate with skeletal staff in batches, maintaining social distance and proper sanitary measures. Once seed processing and packeting are done the seed packets may properly be fumigated before transport for targeted kharif maize areas. Seed companies may be advised to ensure proper fumigation/disinfection of their seed godowns and workers who will handle the seed packets. These need to be percolated up to dealer level so that the seeds and seed packets do not become a source of infection to farmers.

In Peninsular India, where is cultivated as grain crop the farmers are expected to face the problem of drying, shelling and subsequent sale. Since farmers will face the problem of labour in taking up post-harvest processing, they may be forced to go for distress sale. The government needs to intervene to ensure that maize grains are procured in Mandis at MSP. The storage facility of maize grain may be ensured at taluka level so that the farmers are not forced to distress sale. If anywhere due to hailstorm the crop is lodged it needs to be assessed by the government to save distress farmers by paying suitable compensation.

North Eastern Plain Zone (NEPZ)

In Bihar and West Bengal *rabi* maize cultivation is very popular. Bihar tops the country in *Rabi* maize area with 278 th ha representing 18% of *rabi* maize area, closely followed by West Bengal with 211 th ha (14%). In recent past West Bengal is also coming up as an important hybrid seed-producing hub in the region. In some places spring maize is also quite popular.

During current lockdown period of COVID 19 the *rabi* crop in Bihar and West Bengal is in grain filling stage. Therefore, care needs to be taken for time to time irrigation of the crop and incidence of insects and diseases. Any stress at this stage to the crop will be directly reflected in grain yield. Final rogueing of off type plants, diseased and insect damaged plants may be completed in seed production plots. In some parts of Bihar early sown maize crop will reach to maturity after 20th April and harvesting will start. As maize harvesting is done manually in most parts of Bihar and West Bengal, farmers/labours may be advised and asked to work in isolation with proper preventive measures to undertake harvesting operations without mingling in masses. Locally known and available labours should be preferred for harvesting and field operations to avoid movement of labours. After harvest farmers may be advised for proper drying of cobs before shelling or storage of maize. In view of lockdown farmers will face problem of labour scarcity in taking up harvesting and post-harvest processing. They may be forced to go for distress sale. Government needs to intervene to ensure that maize grains are procured on MSP in Mandis or opening new temporary procurement centres. Storage facility of maize grain may be ensured at taluka level so that

the farmers are not forced to distress sale. All storage godowns may be cleaned and fumigated before storage to avoid infestation of storage insect pests.

In some parts of Bihar and West Bengal, spring maize is quite popular, which accounts for around 150 th ha. The sowing predominantly has taken place in February – the crop is in mid vegetative to early flowering stage. Hence, the regular vigil of the crop for pests and diseases and giving irrigation and top dressing need to be ensured. Irrigation, spraying of agro-chemicals and topdressing of the crop does not require group activity. The farmers are advised to use post-emergence herbicide Tembotrione 42% SC @ 115 ml/acre or Topramezone 33.6% SC @ 30 ml/acre to control weeds in maize by applying these in standing maize. The government should facilitate the marketing of baby corn and sweet corn along with the availability of key inputs like herbicide and urea fertilizer to maize farmers.

Bihar and West Bengal quite often experience untimely hail storm from April onwards, which affects standing maize crop or the harvest. Immediate measures need to be initiated to ensure crop insurance, wherever the crop is approaching grain filling. Use of combined harvesters needs to be encouraged for quick harvesting of the crop to avoid harvesting like group activity. Facilities for community drying and shelling may be encouraged. Such dryers and shellers may be subsidized and supplier firm may be approached to enhance the availability of the dryers. Maize marketing is unorganized in this ecology, in which the middlemen and representative of feed/starch factories purchase grains from the farm gate. The procurement at MSP also needs to be ensured as the distress sale by the farmers may happen in such a situation for which government intervention is required. It may be noted if maize grains are not supplied, the poultry and starch industry will be badly get affected, which will have larger implications in days to come.

North Western Plain Zone (NWPZ)

In northwestern plains in the states of Punjab, Haryana, western Uttar Pradesh spring maize is quite popular, which accounts for around 1.5 lakh ha. The spring maize, baby corn and sweet corn crops are there at farmer's field in this zone. The sowing predominantly has taken place in February – the crop is in mid vegetative to early flowering stage. Hence, the regular vigil of the crop for pests and diseases and giving irrigation and top dressing need to be ensured. The farmers also advised taking care of their spring maize crop by application of urea fertilizer, irrigation and weed management as the crop is at the critical stage of knee-high/pre-tasseling stage.

The farmers are advised to use post-emergence herbicide Tembotrione 42% SC @ 115 ml/acre or Topramezone 33.6% SC @ 30 ml/acre to control weeds in maize by applying these in standing maize. The farmers are advised to observe insect-pest attack in the crop especially for fall armyworm and take appropriate measures for their management. Irrigation, spraying of agro-chemicals and topdressing of the crop does not require group activity. Hence, maintaining social distance will not be a major challenge in this regard. The respective state government is requested to ensure availability of key inputs like herbicide, insecticide and urea fertilizer. The harvesting of the baby corn and sweet corn cannot be delayed as over maturity of these cannot be used for selling in the market. The government should facilitate the marketing of baby corn and sweet corn along with availability to maize farmers. Locally known and available labours should be preferred for all farm operations to avoid movement of labours or spread of infection.

Central Western Zone (CWZ)

This ecology covers state of Rajasthan, Gujarat, Chhatisgarh and Madhya Pradesh has 1.5 lakh ha *rabi* maize. The crop is at grain filling/harvesting stage in this region. The farmers are advised to irrigate the crop at grain filling stage otherwise the grain size will be reduced. The harvesting and drying of the grain should be done by maintaining proper social distancing while cutting and shelling operations. Locally known and available labours should be preferred for all farm activities and avoid infection from unknown sources. proper safety measures of sanitization and mask should be taken care of by the farmers. The farmers in this ecology are also likely to face problem in marketing and there are chances of distress sale. Hence, adequate measures need to be taken by the government and other stakeholders for ensuring sell of maize at MSP.

Director

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