Maize Cultivation in Punjab

Bumper production, Poor returns
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Vol. 49, Issue No. 34, 23 Aug, 2014

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In a bid to break the wheat-paddy cropping cycle and promote crop diversity in Punjab, the state government is trying to encourage the cultivation of maize, which relatively consumes less water. This might help contain the steady decline in the water table in the state and restore the natural resource base, which is being eroded by this cropping pattern.

The maize production in Punjab in 2012-13 was 4.71 lakh metric tonnes, and the total area under the crop was 1.29 lakh hectares (Department of Food Processing Punjab 2013). With an average productivity of 3,650 kg/ha, farmers cultivating maize made substantial profits that year. The strategy of the Department of Agriculture, Punjab (DoAP) for the Twelfth Five-Year Plan period (2012-2017) has been to shift the area under paddy cultivation to alternative crops like cotton, maize, pulses, fodder, sugarcane, fruits and vegetables, and agro-forestry to contain damage to the natural resource base. To encourage the cultivation of these alternative crops, the department proposed a few initiatives such as a remunerative minimum support price (MSP), subsidy on seeds to cover production risks and to incentivise the farmers to shift to other crops and the creation of an efficient marketing infrastructure and mechanism for crops other than paddy.

Promoting Maize Cultivation

To promote the cultivation of maize crop, DoAP coined the slogan “ਝੋਨੇ ਦੀ ਥਾਂ ਮੱਕੀ ਉਗਾਓ, ਵੱਧ ਆਮਦਨ, ਤੇ ਪਾਣੀ ਬਚਾਓ (grow maize in place of paddy and increase your income and save water)”. In 1970-71, the area under maize cultivation was approximately 5.55 lakh hectares. But ever since, this area has been continuously declining (Anonymous 2014a). The long-term goal of the DoAP is to bring at least 5.55 lakh hectares once again under maize cultivation in the state over the next few years. Its immediate target was to bring 1.5 lakh hectares under maize cultivation in 2013-14. Encouraged by the healthy profits made in 2012-13, farmers sowed maize crop in double the target area in 2014. But in spite of the bumper production, farmers did not receive the expected returns this year.

The farmers of Hoshiarpur and Kapurthala districts expressed their extreme disappointment
over poor returns in interviews with the author. The farmers stated that either their produce was being rejected, or it was being procured at a rate much lesser than the MSP, which was fixed at Rs 1,310 per quintal for the financial year 2013-14 by the Cabinet Committee on Economic Affairs. However, the government agencies have their own standards for procurement of grains, and these are based on international standards. Other than the size, colour, shine and texture, the moisture content of the grain is a very important criterion for deciding the price.

**High Moisture Content**

For packing and storing maize grains, the moisture content should not be more than 13.50%. But according to an article published in the *Punjab Kesari* (Jain 2014), grains with moisture content even up to 35% are flooding the market. The high moisture content of the grains is the main reason for their non-procurement. Even if the produce is procured as such, it cannot be packed and stored until the grains have achieved the optimum moisture content.

So what has happened this season? On the basis of an intensive survey carried out by the author in the villages of Kapurthala and Hoshiarpur districts in June 2014, certain reasons have been put forward for the farmers getting low prices for their maize crop. But before further discussion, it is worth mentioning that the current crop has not been produced during the Kharif season (June to November)—the traditional season for maize cultivation. This crop, has been cultivated during the intermediate season, which begins in March and ends in June. And for optimal productivity, only hybrid seeds have been used.

Traditionally, typical steps are followed for procuring maize grain with optimum moisture content. In the first step, when the green husk on the corn-cob dries and turns light yellow (see Figure 1), it is cut along with the stalk and kept as such for at least for 15-20 days in bunches for gaining proper maturity. In the second step, corn-cobs from their husk covers are detached and once again dried in the sun for another few days for achieving optimum moisture content. In the third step, grains are detached from the cob by any convenient shelling process.
Nowadays the corn-cobs are de-husked and plucked straight from the standing green crop (see Figure 2). No doubt, this step would be considered appropriate if the stalks of the crop have completely dried up (as shown in Figure 1). Unfortunately, the farmers do not wait for that stage. Figure 2 shows the standing maize stalk with green leaves in the field after harvesting of corn-cobs. Moreover, just after harvesting, the corn-cobs are immediately shelled for grains using modern shellers without bothering about its moisture content. Hence, it is obvious that due time is not given to the grain for reaching the optimum moisture content.
There is a specific way by which one can easily distinguish whether the grain that has been shelled from the corn-cob has achieved optimum moisture content or not. In Figure 3a, it is clearly visible that a considerable portion of the cob is still attached to the grains, and that indicates that the grains have not achieved the optimum moisture content at the time of shelling. Surprisingly, farmers know very well that they are taking the wet produce to the market. But they justify their actions by saying that they want to free their fields as early as possible for transplanting Kharif paddy.
Figure 3: Shelled maize grains.

Figure 3a: Considerable portion of corn husk is still attached with the grains (inset).

Even if a considerable portion of the cob is still attached to the grains, the crop if stored at a farm or at home for some time can gain its optimum moisture content (as it is already explained in the traditional practice). Even this step was not followed by the farmers for getting better returns this year. Most likely, money requirements for sowing the next crop might have been a possible reason for selling their produce at throw away prices.

The farmers of my native village, Achharwal (district Hoshiarpur), accepted the fact that the untimely harvesting of the crop was largely responsible for its poor quality, and that those farmers who had not yet harvested their maize crop and were following the traditional method would definitely get more returns. Other than this, there is one more reason why procurement of the produce was less this year. The major consumers of maize, that is maize processing companies, preferred to purchase the crop from other states or imported it from other countries this season, as it was comparatively cheaper.

Breaking the Wheat-Paddy Cropping Cycle

The Punjab government is making efforts that all the produce can be procured at MSP (Anonymous 2014b). The installation of two maize dryer plants one each in Hoshiarpur and
Nawan Shehar districts at a cost of Rs 16 crores to facilitate the farmers to dry maize according to international parameters is one such step in this direction. The state government is planning to set up another five at Machiwara, Nakoder, Kapurthala, Bhogpur, and Phuglana (Business Standard 2014). The main objective of the government is to break the “wheat-paddy” cropping cycle in order to check the depletion and contamination of groundwater in the state. But the current cultivation patterns followed by the farmers show, that they are not inclined to break this unsustainable cycle. Instead they have added maize to this cycle.

As per the 2010-11 statistics, paddy was sown in 28.31 lakh hectares in Punjab (Anonymous 2014c), and this also included areas which were not fit for paddy cultivation. Therefore, the first step is to demarcate and rank those regions in Punjab which are not fit for paddy cultivation. This demarcation and ranking must take into account the groundwater situation and soil quality in the region along with other local factors. Therefore, instead of promoting crop diversification in all of Punjab, it might be better if those areas which are not fit for paddy cultivation are targeted first. Depending on the suitable alternative crop(s) for the region, area-specific strategies are required.

The success of ranking-based crop diversification solely vests with extension specialists from DoAP, Punjab Agricultural University, Krishi Vigyan Kendras and other regional research institutions. There is a need to hold Kisan melas (farmers’ fairs) based on the theme of crop diversification. Here issues related to the projected production, procurement, and economic returns from a crop suitable for that region and added benefits from by-products along with other region-specific problems should be discussed with the farmers. Following traditional practices along with some degree of mechanisation might be fruitful.

No doubt mechanisation produces faster results, but in certain situations farmers use the machines to harvest the crop before it attains full maturity, like in the case of maize this season. The farmers must be discouraged to follow such practices, and that is only possible if they cultivate a crop in the correct season and follow recommended practices for its cultivation. And if we can claim our right over groundwater, it is also our responsibility to use it judiciously. It is the high time that the cropping pattern is diversified in the state to restrict paddy cultivation, otherwise the day is not far when we will not be able to access potable water in the land of five rivers.

References


July 2014.


