

Linkages of Farmers' Knowledge and Sunflower Production in Sindh, Pakistan

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The economy of Pakistan is agrarian in nature and the backbone of the country's economy. Over the past couple of years the net import bill for edible oil has increased considerably, resulting in an alarming situation and posing a huge burden on the country's reserves. In the country the Agriculture is the largest sector and has remained the mainstay of economy: contributing to 20.9% of Gross Domestic Product (GDP) and providing employment to 43.5 percent of the population. Agriculture also provides inputs for agro based industry (GOP, 2015).

Sunflower is an important oilseed crop of Pakistan. The main objective of this study is to demonstrate the case of crop production and protection technologies and management practices adopted by farmers in the latest release of the different agro-climatic zones and agriculture fields. The cropped area for sunflower stood at 353 thousand hectares during 2014/15 against last year's area of 384 thousand hectares showing a decrease of 2.7 percent. Sunflower production for the 2014/15 stood at 178 thousand tonnes of seeds and 68 thousand tonnes in oil production (GOP, 2015). The major oilseed crops grown in the country include Sunflower, Canola, Rapeseed/Mustard and Cotton. During 2013/14 total availability of edible oil was 3.20 million tonnes. Local production of edible oil contributed 0.573 million tonnes while import of edible oil/oilseeds was 2.627 million tonnes. The edible oil import bill during 2013/14 was Rs. 246.895 billion (US\$ 2.50 billion). During 2014/15, 1.789 million tonnes of edible oil of value Rs. 139.344 (US\$ 1.377 billion) has been imported showing an increase of 4.07 percent against the same period 2013-14. Local production of edible oil during 2014/15 is estimated at 0.546 million tonnes. Total availability of edible oil from all sources is provisionally estimated at 2.335 million tonnes during 2014/15. The area and production of oilseed crops during 2013/14 and 2014/15.

Due to a slump in the international market for edible oil and oilseeds, local traders offered between Rs. 2,050/- and Rs. 2,100/- per 40 kg of canola crop produce in 2014/15. Low prices in local market discouraged the oilseeds growers resulting in a decline in edible oil production. Last year the average price of oilseeds

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(Canola/sunflower) prevailed between Rs. 2,500/- and Rs. 2,800/- per 40 kg (GOP, 2015).

The major objective of this study is to identify the factors affecting yield and timely decisions in the sunflower market and bottlenecks in production. The results revealed that lower level of adoption of improved agricultural technology innovation and diffusion as a key aspect in improving agricultural production at a faster rate. A large number of technology developments in the agricultural sector have not been accepted by the farmers to the greatest extent possible. For the use of new crop production techniques, frontline demonstrations were found useful.

The methodology used for the survey was to collect data and information from farmers. A list of participants in the frontline demonstration was obtained. Highest number of participants was observed from Golarachi. Seventy growers were selected by random sampling technique. Out of 70 samples, 40 were participants farmers and 30 were non-participants farmers. Growers were randomly selected based on the highest number of respondents who participated in a demonstration from a particular village. Hence, this taluka was selected for the study purpose due to the large area under sunflower cultivation there, and being the area most suitable (given its moderate weather) for the sunflower production.

In Pakistan, Sindh grows Sunflowers, but accounts for only 19 percent of total Sunflower area as compared with other provinces. The sample was selected randomly from 10 villages in Golarachi town/taluka, Sindh province of Pakistan for the study. All the data were summarised and scrutinised carefully and recorded in Statistical Package for Social Science (SPSS).

Among salient findings were the fact that 92.50 percent of participant farmers had knowledge regarding recommended variety, whereas 66.67 percent of non-participant farmers did not. In case of seed rate 87.50 per cent of participant farmers and 43.33 percent of non-participant farmers had correct knowledge. A majority (82.50 percent) of participant farmers and more than half (60.00%) of non-participant farmers also were aware of spacing, whereas, 80.00 and 90.00 percent of participant farmers and 80.00 and 63.33 percent of non-participant farmers had knowledge about the practices like intercultural operations and plant protection measures, respectively. It is evident that 88.33 percent of participant farmers and 63.33 percent of non-participant farmers adopted the recommended variety/hybrid. In case of spacing 52.50 percent of participant farmers and 30.00 percent of non-participant farmers fully adopted, whereas 47.50 per cent of participant farmers and 70.00 per cent of non-participant farmers partially adopted. Regarding FYM

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application, 47.50, 42.50 and 10.00 percent of participant farmers and 53.33, 26.67 and 20.00 percent of non-participant farmers were credited with full adoption, partial adoption and non-adoption, respectively. Overall in the study area farmers marketed more than 80 percent of the total produce to private agencies, and the rest was sold to local market Waparries (Local traders/commission agents).

It could be observed that the Benefit Cost (B:C) ratio of the participant farmer was 2.57:1, whereas, it was 1.32:1 in case of non-participant farmers. Almost all the farmers described a variety of marketing constraints; about one-third respondents reported the monopoly of PASSCO with the minor role of private sector. Delayed payments, unfair deductions from produce and underweighting problems were recorded by 40.7, 46.2 and 42.5 percent growers, respectively. It is clear from the results that, the benefit cost ratios of participant farmers were higher than the non-participant farmers. The contents clearly indicate that, irrespective of participation, farmers clearly expressed that non availability of seeds, high seed cost, high cost of fertilisers, non-availability of fertilisers at times and high cost of plant protection chemicals and plant protection measures are the major constraints in sunflower production.

The suggested recommendation is that information/knowledge regarding production practices are disseminated among farmers where scientific and technical application are often absent. Technical information about recommended production practices and related marketing issues should be transferred to farmers. Therefore administrators, planners and executers must give the focal importance to executing frontline demonstrations, and special orientation training should be given to the departmental staff to further train progressive farmers and grassroots extension workers through their demonstrations. Consequently, the administrators and implementing officers should also keep in mind the role of demonstrators in motivating even non-participant farmers to fully adopt the recommended technologies to increase the income in a sustainable manner.

Key words: Sunflower, Production, Development, Knowledge, and Sindh