

# Economic and Production Constraints for Niche crops in Jammu & Kashmir

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## ABSTRACT

The niche crops are considered imperative due to their unique characteristics and association to a particular limited region. The consumer's preference towards these niche crops is mainly high due to the fact that their taste is good and different and is grown only in a specific area. The farmers all over India are engaged in production of such niche crops but whether the farmers are getting special reward or monetary benefits for production of these crops is still needs to be answered. The present study was conducted to identify constraints in production of niche crops namely *basmati* rice, saffron and pecan nut. The major constraint in *basmati* production was price fluctuation, followed by unavailability of irrigation water, market problem, poor technical assistance from department and problem of diseases. The low profitability, non-availability of inputs, poor quality of seed, shortage of labour and high cost of agricultural inputs were among the least ranked constraints. The major constraint faced by the farmers of Kishtwar district in the production of saffron was again the price fluctuation, followed by low production of saffron, market problem and degraded quality of seed. The unavailability of seed, problem of diseases and unavailability of irrigation water were among the least ranked constraints. The major constraint faced by the farmers of Poonch district in the production of pecan nut was high mortality of pecan nut trees. This was followed by inadequacy of irrigation water, problems of insect pests, low temperature during fruiting and unavailability of planting material. The lack of subsidy, lack of department support and high cost of inputs were among the least ranked constraints.

**Keywords:** Constraints, niche crops, economics, production

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In farm planning, farmer as a decision maker takes three decisions - what to produce, how to produce and how much to produce (Van and Keller, 2006). The farmer has to decide between alternative uses of resources at his/her disposal in order to address these three different but inter-related questions. The presence of multiple agro-ecological situations in Jammu region leads to the prevalence of conditions favourable for production of some unique crops called as "niche" crops. Different types of niche crops are grown in specific areas, belts and clusters depending upon their agro-climatic suitability.

Webster's defines "niche" as a specialized market or place, employment, status, or activity for which a person or thing is best fitted. Other names for the "niche" crops include specialty crops or diversity farming. In the context of agribusiness, "niche" means a lifesaver in tough economic times. The concept of "niche" farming is not a very new concept to farming. For years, there has been a demand for specialty crops. However, once the "niche" becomes mass produced, it is no longer considered a "niche" but a crop of mass production. In many countries new agriculture production such as the "niche" crops

is one way to help old and new farming ventures achieve profitability and sustainability (Ulalrith, 2012). Jammu region of Jammu and Kashmir possesses huge potential and opportunities for on-farm diversification with “new crop alternatives” such as saffron, strawberry, honey, apple, pecan nut, kalazeera, rajmash, off-season vegetable production, certified organic products, medicinal plants and much more. These “niche” crops remain an important source of raw material demanded by many industries and have a significant contribution in the total exports from the state. The present study was conducted to highlight the economic and production constraint for niche crops grown in Jammu region of Jammu & Kashmir State.

### Basmati: Niche crop of Jammu district

Jammu district is mainly comprised of sub-tropical regions and one crop which is considered unique to the district is the Basmati rice. Basmati rice in sub-tropical zone of Jammu region is grown on more than 32,000 hectares of area covering Jammu, Samba and Kathua district (Gupta *et al.* 2013). A highly flavoured *Basmati* variety of superfine rice is grown over the majority of irrigated area of Jammu district and covered mainly the three agriculture sub-divisions namely; R.S. Pura, Marh and Akhnoor. Basmati of Jammu region, particularly of R. S. Pura belt is world famous for its high aroma, make it a niche crop of Jammu district. In 2013-14, it has been grown over an area of 15320 hectares in R.S. Pura block of the district. Thus, the cultivation of rice in this region offers a great potential for improvement of its economy.

### Saffron: Niche crop of Kishtwar district

Kishtwar is popularly known as ‘Land of Sapphire and Saffron’. Saffron has traditionally been associated with the famous Kashmiri cuisine, its medicinal value and its use in important religious rituals. It is a high value spice, highly remunerative cash crop with high quality grown traditionally in Kishtwar district of Jammu division. So saffron is considered as niche crop of Kishtwar district for the present study. There are reports that several farmers are abandoning saffron cultivation in favour of other crops (The Project Economic Revival of J&K Saffron Sector). It is therefore crucial at this point to evaluate

the economics of saffron cultivation and its resource use efficiency in the district. It is grown on an area of about 120 hectares over 25 villages with an average productivity of 2.50 kg per hectare (DoA J&K, 2013).

### Pecan nut: Niche crop of Poonch district

Poonch is located on the Southern slopes of the PirPanjal range and as such is rugged with spurs and valleys. It lies between 33° 25' to 34° 10' North latitude and 73° 58' to 74° 35' East longitude. Poonch district is classified into three agro-climatic zones namely: sub-tropical (up to 800 m) which includes plain areas with water logging conditions, intermediate lower (between 800 to 1500 m) which include sloppy lands with problem of soil erosion and intermediate higher (above 1500 m) which include high hills with gully erosion. Almost 86 percent of cultivated area of the district is rainfed. Maize – Wheat is the major cropping sequence being followed in the district. There are three main cereals cultivated at Poonch which includes maize and paddy during kharif season and wheat during rabi season.

## MATERIALS AND METHODS

The present study was conducted using both primary data based on a survey of a cross section of cultivating households and were collected through personal interview method from selected districts of Jammu region for respective crops. The data for the present field study were collected in the year 2014-15. Three districts namely; Jammu, Kishtwar and Poonch of Jammu region were selected for collection of primary data respectively for basmati rice, saffron and pecan nut crops chosen under the present study.

To study the constraints faced by the farmers in production of niche crops, Garret ranking technique was adopted (Garret and Woodworth, 1969). The respondents were asked to rank the factors given or otherwise. The orders of merit, assigned by the respondents were converted into ranks using the following formula:

$$\text{Per cent position} = \frac{(R_{ij} - 0.50)}{N_j}$$

Where,

$R_{ij}$  = rank given for i factor by j individual

$N_j$  = number of factors ranked by j individual.

The percentage position of each rank was then converted into scores referring to table given by Garret and Woodworth (1969). For each factor, the scores of individual respondents were added together and divided by the total number of respondents for whom scores were added. These mean scores for all the factors were arranged in descending order, ranks were given and the most limiting factors were identified.

## RESULTS AND DISCUSSION

### Constraints in *basmati* rice production

The constraints faced by the farmers of Jammu district in the production of *basmati* rice has been ranked using Garret's Ranking technique, the results of which are presented in Table 1.

**Table 1:** Garret's Ranking of constraints in *basmati* Production (n=50)

Constraint	Garret's Mean Score	Ranking
Price low & fluctuation	70.30	I
Irrigation water	67.89	II
Market problem	66.54	III
Poor technical assistance from department	58.96	IV
Inability to take effective control measures against diseases	56.64	V
Less profitable	56.23	VI
Non-availability of inputs	55.23	VII
Inability to take effective control measures against pest	54.70	VIII
Degraded quality of seed	48.76	IX
Non-availability of trained labour	44.34	X
High cost of agricultural inputs	24.12	XI

Eleven numbers of constraints were identified in *basmati* rice production. The major constraint as ranked by the *basmati* growers was price fluctuation of *basmati* rice. This was followed by unavailability of irrigation water, market problem, poor technical assistance from department and problem of diseases. The low profitability, non-availability of inputs, poor quality of seed, shortage of labour and high cost of agricultural inputs were among the least

ranked constraints. The major constraint in *basmati* production was price fluctuation. It was studied that price fluctuation was above 600 per cent during the study period, especially from January 2014 to January 2015. The high level of price fluctuation in *basmati* put doubts in the mind of *basmati* growers regarding consistency of assured returns. Moreover, the hybrid rice was rapidly replacing the area under *basmati* and thus posing threat to the production of world famous *basmati* rice in the region. Unavailability of irrigation was the second most constraint and it was observed that during *kharif* season, the electricity supply was not very smooth which made difficult to irrigate the crop. Sori *et al.* (2014) considered lack of transportation, regulated market, electricity and processing unit to be the major constraints related to rice production.

### Constraints in saffron production

The constraints faced by the farmers of Kishtwar district in the production of saffron has been ranked using Garret's Ranking technique. There were eight constraints identified in saffron production, as presented in Table 2.

**Table 2:** Garret's Ranking of constraints in saffron production (n=50)

Constraint	Garret's Mean Score	Ranking
Price fluctuation	82.64	I
Low production	78.88	II
Market problem	78.87	III
Degrade quality of seed/ loss of seed	60.22	IV
Non-availability of seed	58.16	V
Inability to take effective control measures against diseases	46.25	VI
Irrigation water	33.14	VII
High cost of agricultural inputs	29.44	VIII

The major constraint as ranked by growers was price fluctuation of saffron. This was followed by low production of saffron, market problem and degraded quality of seed. The unavailability of seed, problem of

diseases and unavailability of irrigation water were among the least ranked constraints.

The major constraint faced by the farmers of Kishtwar district in the production of saffron was again the price fluctuation. The price of saffron in previous years of study period was quite high and farmers believed that the reduction in market price hindered their financial interests. They also believed that their post-harvest methods results in yielding high quality saffron and should fetch more price than Kashmir's saffron. The second problem was decrease in yield of saffron over the years. They sought some technology and good quality seed for maintaining and increasing the yield of saffron. The unavailability of good quality seed was also a major constraint on saffron production. Haq and Shafi (2014) found that lack of proper irrigation facilities and traditional unscientific methods of cultivation were the major constraints in saffron cultivation in Kashmir.

### Constraints in pecan nut production

The constraints faced by the farmers of Poonch district in the production of pecan nut has been ranked using Garret's Ranking technique. There were eight constraints identified and are presented in Table 3.

**Table 3:** Garret's Ranking of constraints in pecan nut production (n=50)

Constraint	Garret's Mean Score	Ranking
High mortality of pecan nut trees	76.86	I
Inadequacy of irrigation water	68.34	II
Inability to take effective control measures against pest & diseases	67.98	III
Low temperature during fruiting	66.92	IV
Unavailability of planting material	65.88	V
Government support/subsidy	61.34	VI
Poor technical assistance from department	61.71	VII
High cost of agricultural inputs	21.49	VIII

The major constraint as ranked by pecan nut farmers was high mortality of pecan nut trees. This was followed by inadequacy of irrigation water, problems of insect pests, low temperature during fruiting

and unavailability of planting material. The lack of subsidy, lack of department support and high cost of inputs were among the least ranked constraints.

The major constraint faced by the farmers of Poonch district in the production of pecan nut was high mortality of pecan nut trees which was above 70 per cent. This was followed by inadequacy of irrigation water. The land under pecan nut orchards was mainly rainfed and undulated. The management practices were difficult to perform in orchards due to the poor quality of land. The farmers sought government support in terms of availability of good quality planting material of pecan nut and trainings on its scientific cultivation. Ares *et al.* (2006) in Unites States found that annual cash flows from nut sales had smaller fluctuations than nut yields because of an inverse relation between nut price and yield. Dastagiri *et al.* (2010) according to the Garret's technique concluded that the major constraint in marketing of horticultural commodities in Himachal Pradesh was non-availability of insecticides, pesticides and seedlings.

### REFERENCES

- Ares, A., Reid, W., Brauer, D. 2006. Production and Economics of Native Pecan Silvopastures in Central United States. *Agroforestry Systems*, **66**(3): 205-215
- Dastagiri, M.B., Kumar, B.G., Hanumanthaiah, C.V., Paramasivsm, P., Sidhu, R.S., Sudha, M., Chand, K., Singh, B. and Mandal, S. 2010. Report of the research study on "Estimation of Marketing Efficiency of Horticultural Commodities under Different Supply Chains in India"; [http://www.ncap.res.in/upload\\_files/new.pdf](http://www.ncap.res.in/upload_files/new.pdf), accessed online on 20-10-2013.
- Gupta, B.B., Salgotra, R.K. and Bali, A.S. 2013. Status Paper on Rice in Jammu and Kashmir. <http://www.rkmp.co.in>, accessed on 20<sup>th</sup> September 2013.
- Haq, I.U. and Shafi, S. 2014. Economic Analysis of Saffron Cultivation in Kashmir Valley of India. *European Academic Research*, **II**(1): 653-685.
- Sori, S.K., Gauraha, A.K. and Sushila. 2014. Perceived constraints in the accessibility of production, marketing and processing of paddy in Mahasamund district of Chhattisgarh. *Economic Affairs*, **59**(1): 101-106.
- Ulalrith, M. 2012. Are 'Niche' crops the new taste of Ohio. Posted by Rob Treynor on Jun 7 2012. <http://acresmidwest.com/niche-crops-taste-ohio/>, accessed on 22<sup>nd</sup> September 2013.
- Van, L.W.T. and Keller, L.H. 2006. Farmers' Decision Making: Perceptions of the importance, Uncertainty, and Controllability of Selected Factors. *Agribusiness*, **7**(6): 523-525.