Constraints Perceived by the Tribal farmers in cultivation of Buckwheat in Gurez, J&K

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ABSTRACT

The present research paper identifies the socio-economic characteristics and constraints perceived by farmers involved in buckwheat cultivation. The paper also comes out with the future prospects of cultivation of this pseudo millet in selected villages of the tribal valley of Gurez, where the buckwheat is cultivated. The study was conducted in three villages of block Bagtore. The villages selected for the study had a sizeable number of farmers cultivating buckwheat; 30 farmers were selected randomly from the list of total 150 farmers from the three villages namely Tarbal, Dangan and Bagtore. The data was collected with the help of pre-structured interview schedule and the collected data was then subjected to appropriate statistical analysis to obtain the results such as the socio-economic status of the farmers involved in the cultivation of Buckwheat crop and the constraints as perceived by the concerned farmers in Buckwheat cultivation.

Keywords: Buckwheat, constraints, prospects, perceived

Introduction

Buckwheat, a pseudo-cereal contains protein of high nutritional value, dietary fibre, resistant starch, rutin, vitamins and minerals. Common buckwheat (Fagopyrum esculentum moench) has been a crop of secondary importance in many countries and yet it has persisted through centuries of civilisation and enters in to the agriculture of nearly every country where cereals are cultivated. Despite its name, the buckwheat crop is not related to wheat crop as the buckwheat crop is gluten free. It is used in preparation of buckwheat tea or processed in to groats, flour and noodles. Buckwheat has become popular as a health food due to its high mineral and antioxidant content. The buckwheat is now mainly grown in northern hemisphere especially in Russia, Kazakhstan, China and Central Eastern Europe. Buckwheat is the most important crop of the mountain regions lying 1600m above sea level both for grains and greens. It occupies about 90 per cent of cultivated lands in upper Himalayas with a solid stand. In India, the crop is widely grown in Jammu and Kashmir in the west and Arunachal Pradesh in the east. Therefore in the above context, the Gurez valley

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has ideal climate for the cultivation of this important crop as the valley lies at an average elevation of 2400 metres above sea level and the valley is flanked by the main range of the Himalayas on the northern India. The cultivation of buckwheat crop has shown a steep decline during the recent past, yet the crop is found to be grown by some farmers in hill and mountain agro-ecosystem in the Himalayan region of the country mostly in the parts of Jammu and Kashmir, ladakh and few areas of northeast India. This is despite the fact that Buckwheat is also emerging as the healthy food crop due to its richness in nutrients like protein, high content of lysine, vitamins and bio-flavoniodsrutin (Keli 1992).

Despite having high medicinal properties of the crop, the area under buckwheat showed a sharp decline substantially and it ranged from 60-92% during last two decades in the western Himalayas of India (Rana et al.2000). Low productivity of the crop is another matter of concern and a big challenge for the agricultural scientists as the farmers involved in the cultivation of said crop are shifting towards other high value cash crops. Therefore to make buckwheat an attractive farm crop, there is a need to provide more attention towards this precious crop for improving its productivity and to make the farming community aware about the value of this underutilized crop of the Indian Himalayan region and needs more attention for its revival in the area where the conditions are favourable for its cultivation.

The cold climatic condition of the Gurez valley is highly suitable for buckwheat cultivation and the being recognised as the most important nutraceuticals. The local tribes use buckwheat as a medicine to improve the blood flow and to prevent hardening of the arteries (Atherosclerosis) and it is also being used as a suitable diet for the people suffering from diabetes. Buckwheat being one of the richest sources of manganese, magnesium, copper and zinc which are regarded best for immune system can be used to boost the system against the infectious diseases like COVID-19. Tea is also being prepared from the buckwheat grains by the locals and is locally known as "Buckwheat Kehwa" which according to the locals helps in digestion, eliminating bloating and improves the overall immune system of the body. Buckwheat covers the crops, suppresses weed growth and attracts beneficial insects and pollinators with its abundant blossoms. Buckwheat flowers attract honeybees and other pollinators with their morning nectar flow, therefore it is suitable for beekeeping. Hence, good number of commercial beekeepers migrate to Gurez valley during the months of August-September and put their beehive boxes near buckwheat fields to get nectar for honeybees and the said beekeepers sell this white honey at very higher price in the market.

Objectives

Buckwheat being the heritage crop of the Gurez valley and has now remained confined to certain pockets in this tribal valley. Therefore keeping in mind the importance of the crop, the present study was undertaken to study the socio-economic status of the farmers involved in its cultivation and identification of main constraints in the cultivation of this heritage crop.

Materials and Methods

The present study was carried out during the year 2019-20 in the selected villages of Gurez valley where buckwheat crop is grown. A total of three villages of block Bagtore were selected for the study where buckwheat crop is still grown by a sizeable number of farmers and from each village. From the list of 150 farmers from these three villages, thirty (30) farmers were selected randomly from each village who are cultivating buckwheat. The three villages were Tarbal, Dangan and Bagtore. The data was collected by personal interview method with the help of pre-structured interview schedule. The data collected was then coded, tabulated and analysed in accordance with the objectives of the study. Appropriate statistical tools like frequency, percentage, mean, standard deviation and correlation co-efficient were also employed to interpret the collected data.

Results and Discussions

The data in table 1 depicts the socio-economic status of the concerned farmers studied in terms of certain selected variable.

Table 1: Socio-economic variables of farmers' involved in Buckwheat

Variable	Category	Tarbal	Bagtore	Dangan	Average	X2	P (0.05)
Age	Up to 25 years	06	09	12	09.00	0.31	NS
	26-50 years	21	25	19	21.70		
	Above 50 years	63	56	59	59.40		
Gender	Male	66	62	54	60.70	2.74	NS
	Female	24	28	36	29.40		
Family size	Up to 4 members	08	13	10	10.34	3.46	NS
	4-8 members	23	28	22	24.30		
	Above 8 members	59	39	58	52.00		

Land holdings	Up to 0.2 ha.	14	09	28	17.00	2.65	NS
	0.2-0.4 ha.	28	32	48	36.00		
	Above 0.4 ha.	48	49	14	37.00		
Land under Buckwheat crop	Up to 0.1 ha.	14	30	26	23.30	3.76	NS
	0.1-0.2 ha.	49	42	54	48.30		
	Above 0.2 ha.	27	18	10	18.30		

The results revealed that amongst the farmers, the elder one above 50 years of age with an average of 59.40 per cent were found involved in buckwheat cultivation as compared to farmers belonging to younger age group. This might be due to the fact that the younger people have low tendency towards the cultivation of buckwheat crop and the adult farmers are well versed about the nutraceuticals benefits of the crop. The data in the table also revealed that more male farmers are involved in buckwheat cultivation with an average of over 60 per cent as compared to women farmers. It was also observed from the findings that most of the farmers involved in buckwheat cultivation belong to the family having more than 8 members with 52 per cent. The data shown in the table further revealed that most of the farmers (37%) involved in the cultivation of buckwheat crop were having total land holding of more than 0.4 hectares and the majority of the farmers over 48 per cent involved in buckwheat cultivation have 0.1 to 0.2 land under the crop.

The data presented in Table 2 depicts the constraints perceived by the farming community in buckwheat cultivation. Further observation of the data given in table 2 clearly reveals that the farmers involved in buckwheat cultivation perceived the lack of awareness about the value addition of the crop as the major constraint (93.30%) followed by the lack of market in selling buckwheat (78.90%), non-availability of quality seed of the crop was perceived as the constraint by 75.60% of the respondents. Lack of awareness about the availability of improved seeds was perceived as another constraint by the 62.20% of the respondents.

Table 2: Constraints as perceived by farmers involved in Buckwheat cultivation.

Production constraints		Frequency	Percentage	Rank
1.	Changes in Weather	62	68.90	IV
2.	Lack of Market	71	78.90	II

3.	Lack of awareness about improved seed	56	62.20	V
4.	Low yield	46	51.00	VI
5.	Lack of awareness about value addition	84	93.30	I
6.	Non-availability of quality seed	68	75.60	III

Future Prospects of buckwheat crop in Gurez valley:

Since the Buckwheat crop requires short growing period, is adaptable to extreme cold temperatures, water stress conditions, less soil fertility and climate variability making it most suitable crop for the climatic conditions of Gurez valley. This crop has the capacity to meet the increasing food demands and grows well in higher altitudes. Due to its adaptability to marginal as well as infertile lands of the hilly and mountain agro-ecosystems, it can support livelihood of thousands of people living in these disadvantageous conditions. The only need is the introduction of high yielding varieties of the crop and by making people aware about its nutritional value and the health benefits of buckwheat crop.

The cold arid region of Gurez valley is very much suitable for the cultivation of buckwheat crop, thus the production of the crop can be increased substantially as the crop has been recognised as nutraceutical foods (a food that provides medicinal and health benefits) as reported by Jiang et.al. (1995), that the person who regularly consumes buckwheat cannot face the problems like high blood pressure, high cholesterol problems. The valley having high animal population can take the advantage of getting high quality fodder of buckwheat due to its palatability. Buckwheat forage can be fed to livestock that eat it readily as it can be fed green, as hay and silage can also be prepared from the buckwheat forage and it can work as a good cover crop and provides an opportunity as a green manure crop as well.

Buckwheat attracts insects like bees as the valley of Gurez provides best scope for bee keeping especially during the blooming of buckwheat crop and the bees are able to make good honey from the nectar of buckwheat as its long lasting flowering period is extremely helpful for the beekeepers who usually migrate to the valley along with bee hives to get the nectar of buckwheat crop and these migratory beekeepers then sell the honey made of buckwheat nectar at higher prices especially in the states of Gujarat and Maharashtra. Because the honey from this underutilized crop is incredibly rich and highly coveted among honey lovers as the honey made from buckwheat is packed with antioxidants and is known for being excellent honey for cough and cold.

Conclusion

Buckwheat being a multi-purpose crop which is widely grown at higher elevation in the Indian Himalayan region has a huge scope to be popularised. It can play an important role in ensuring food and nutritional security of the people living under hill and mountain agro eco-systems. The present study reveals that most of the farmers involved in buckwheat cultivation belong to adult age group with over 50 years of age as compared to younger farmers who are now reluctant to take up buckwheat cultivation in the valley of Gurez. Amongst the constraints perceived by the respondents, the most of the farmers reveal that lack of knowledge about the value addition followed by the marketing problem of the crop. Farmers engaged in cultivation of this heritage crop must be given support in terms of knowledge, inputs and marketing support.

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