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Income Generation & Economic Improvement through Cultivation of Medicinal Plants in Uttarakhand



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Abstract
The purpose of this study is to examine economic improvement and income generation through cultivation of medicinal plants in Uttarakhand. The aim is to find out the economic benefits of herbs cultivation. In order to achieve the goal, some herbs have been selected and total cost, income, profit per Nali have been estimated. Apart from this district wise income generation and distribution in Uttarakhand have shown through diagrams. Thus, the result can be used to get employment at their place where they residing and improve the economy of Uttarakhand.

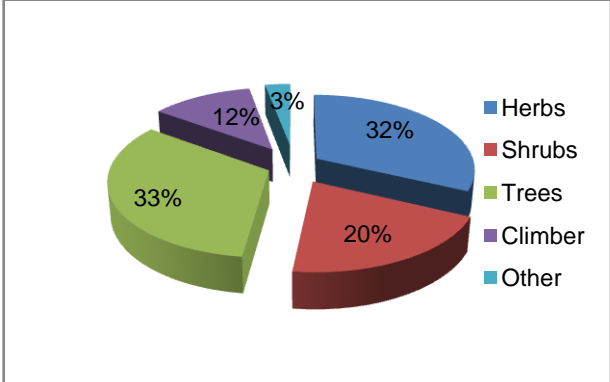
Keywords : Herbs, Cultivation, Nali, Traditional, Subsidy.

Introduction

The herbs are very intensively used for therapy and curing in India from ancient time. Gujrat, Haryana, Tamilnadu, etc are some Indian states which is producing herbs and medicinal plants. Uttarakhand, being a mountainous state have potential and climatic conditions to grow herbs but a major part of production is collected from forest. Being very high demand of herbs and medicinal plants in international market, there is a very strong need to cultivate herbs in a systematic manner. This will help to fulfil the demand and strengthen the economy of local community and the state, because herbs and medicinal plants have very high economic value.

Uttarakhand is very rich in herbs, medicinal and aromatic plants species. Herbs cultivation and number of farmer engaged with this cultivation is increasing day by day in a dramatic manner. Having potential of herbs and aromatic plants, Uttarakhand is declared an herbal state. Herbal Research and Development Institute (HRDI) is working in this field to conserve, develop and sustain this kind of cultivation from 1989. There are thousands of species of herbs and medicinal plants in Uttarakhand but they are different in habit. Whereas 32% is herbs, 20% shrubs, 33% trees, 12% climbers while 3% species comes under other category.

Fig.1-Distribution of Herbs by Their Habit



Source-IJSSM, 2015, Vol-2, pp.148-156

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Review of Literature

Quite a few botanists has been already widely investigated the vegetation of Gharwal (Gaur1999; Naithani 1984-85; Bawa 1993; Bhatt et al 2007). It consists of approximately 18000 plants species. WHO (World Health Organization) state that 80% people of the world seeks curing for diseases through traditional method of medicine (Mukherjee, 2004 and Vinata Naini, 2013). Uncontrolled collection, old methods of harvesting and regular utilization cause peril for medicinal plants consequently many precious aromatic plants are going to be extinct (Swe and Win, 2005). The cultivation of medicinal plants can take an imperative part to develop livelihood strategies for the villagers residing in high altitude of Kumaun region of Uttarakhand (Vipin Chandra Joshi and Rakesh K Joshi, 2014).

Study Area

Uttarakhand state lies between 31° 28''N to 28° 42'' N latitude and 81° 2'' East to 77° 33'' East longitude. The total area of this state is 53483/2 km. Uttarakhand is famous for its vegetation from ancient time. Varying of topographic condition thrive different type of vegetation in the state. On the basis of altitude, this region can be categorised into four major parts as sub-tropical 250-1200m, sub-temperate 1200-1700m, and temperate 1700-3500m and alpine above 3500m. Due to altitudinal variations, Uttarakhand is very rich in medicinal plants. Almora, Champawat, Bageshwar, Tehri, Rudraprayag, Chamoli etc are the main districts which are producing herbs and medicinal plants and have high potential for herbs cultivation.



Objective

The main objective of the research is to find out the economic benefits of herbs cultivation.

Research Methodology

The goal of the present study is to understand the economic benefits from the cultivation of herbs in the different districts of Uttarakhand. In order to achieve the objective, present study

Table.1- Estimated Sapling,Cost and Income of Main Herbs in Uttarakhand (Per Nali).

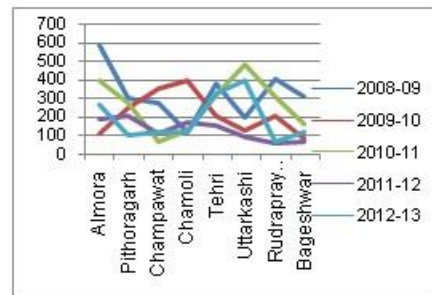
Sl no.	Name of Species	No. of Sapling per Nali	Total Costper Nali	Total Incoe in Rs. perNali	Net Profit per Nali	Subsidy in I Year	Subsidy in II Year	Subsidy in III Year	Total Subsiy
1	Atish	3300	2000	5250	3250	800	100	100	1000
2	Kutki	2200	1000	3000	2000	300	100	100	500
3	Kuth	550	500	3500	3000	300	100	100	500
4	Jatamsi	3300	2500	3750	1250	900	200	150	1250
5	Chiraya	2200	2000	4400	2400	800	100	100	1000

investigates the different kind of herbs and medicinal plants which are cultivating in Uttarakhand. The study, further attempts to investigate that up to what extant economic benefit are coming from the herbs cultivation. The present research based on descriptive method. The method of research is used for fact finding investigation and involved secondary data. The numbers of farmers registered under MAP cultivation programme have been shown by the line diagram and the income generated through the main herbs has been shown by the pie diagram.

Result and Discussion

Uttarakhand has very huge cultivation potential of medicinal plants and a number of farmers are engaged in this cultivation in various districts of Uttarakhand but the number is not stable. The diagram depicts that the maximum number of farmers were engaged in 2008-09 in medicinal plants cultivation. Following the number is decreasing slowly. The most probably reason behind decreasing figure is that the land resources are very limited in this state and population pressure is increasing day by day that is why the land holding size is decreasing and the priority of crops is changing.

Fig.2-Number of Farmers Registered under MAP cultivation programme since 2008 to 2013 in Uttarakhand



Source- IJSSM, 2015, Vol-2, pp.148-156

These districts (Almora, Pithoragrah, Tehri, Chamoli etc.) have a good number of farmers which are engaged in the cultivation of medicinal plants as well as having suitable geographical conditions. This five year data shows that Almora have a maximum numbers of farmers in comparison to other districts.

Uttarakhand is the rising centre of north India in terms of the medicinal plants and herbs cultivation. Almora, Pithoragarh, Champawat, Chamoli, Tehri, Uttarkashi, Rudraprayag, Bageshwar districts are cultivating the medicinal plants. These districts have appropriate geographical as well as climatic condition for herbs cultivation. The main medicinal plants and herbs, which is cultivating in these districts, are showing in the following table.

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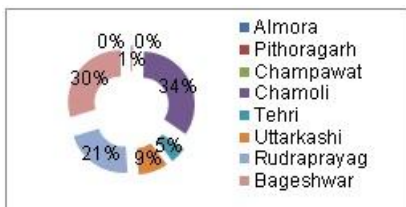
6	Faran	3300	500	6250	5750	250	-	-	250
7	KalaJira	2200	800	1250	1170	400	-	-	400
8	Pyretm	1450	800	6000	4600	300	100	-	400
9	Tagar	2200	800	4000	3200	300	100	-	400
10	Manjisa	2500	1000	3700	3700	400	100	-	500
11	Badi Elaichi	80	800	12000	11200	400	-	-	400
12	Sarpgandha	2200	2000	4400	2400	800	200	-	1000
13	Kalihari	1100	2500	14000	9500	1100	150	-	1250
14	Satawr	550	800	2250	1450	300	100	-	400
15	Lem,G& Sag Plants	550	800	6000	5200	300	100	-	400
16	Stivia	1450	2000	12000	10000	800	200	-	1000
17	Brhami	2200	800	6250	5450	300	100	-	400

Source-HRDI

The present table shows the main herbs and medicinal plants which are mainly cultivating in Uttarakhand. Apart from this table shows the sapling number as well as cultivating cost per nail. Third column of the table is show total income per nail and the following net profit. Government of Uttarakhand is providing subsidy to farmers for buying sapling and other material related with cultivation. The amount of subsidy is not equal for each herb. The distribution of these herbs is different in each district that is why income is also uneven. The district wise income of few herbs is describing below:

Kutki is exceedingly used for liver tonic and blood purification. The diagram shows that Almora and Champawat districts are not cultivating Kutki while Chamoli is getting 34%, Bageshwar 30%, Rudraprayag 21%, Uttarkashi 9%and Tehri 5% of total income which is generated by kutki. Apart from this Pithoragarh is getting very little amount of the total income that is 1%.

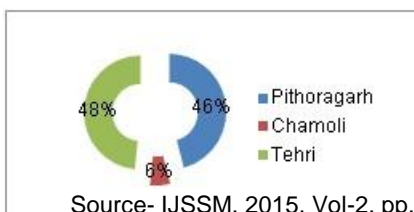
Fig.3- District Wise Income Distribution of Kutki



Source- IJSSM, 2015, Vol-2, pp.148-156

Being used in High Blood Pressure, Epilepsy and Intestine disease Sarpgandha have very high medicinal as well as economic value but the cultivation of Sarpgandha is taking place in very limited and selected areas. Pithoragarh, Chamoli and Tehri are the main districts which is producing it. Tehri is getting 48%, Pithoragarh 46% while Chamoli 6% of total income.

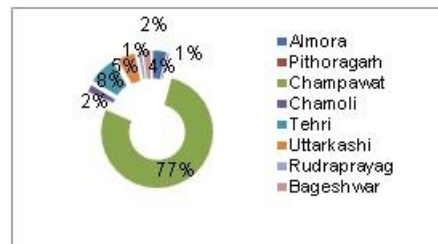
Fig.4- District Wise Income Distribution of Sarpgandha



Source- IJSSM, 2015, Vol-2, pp.148-156

Satawar is very highly producing in the districts of Uttarakhand. Champawat district is cultivating it in very good quantity in comparison of than other districts. It is used to make medicine of Eye diseases, Cancer and intelligence improvement. Champawat is getting 77% of totalincome and rest 23% is divided in other seven districts.

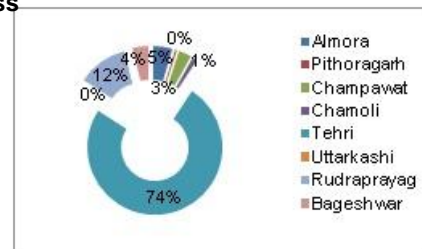
Fig.5- District Wise Income Distribution of Satawar



Source- IJSSM, 2015, Vol-2, pp.148-156

Lemon Grass is a aromatic plant and widely producing in Uttarakhand. The total income, generated through lemon grass is 78.97 laks. Tehri is getting (74%) a major part of income. While Rudraprayag 12%, Almora 5%, Bageshwar 4%, and Champawat 3% of total income. Chamoli, Pithoragarh, Uttarkashi districts are getting less than 1% of total income.

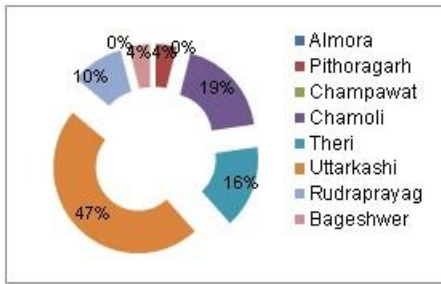
Fig.6- Disrict Wise Income Distribution of Lemon Grass



Source- IJSSM, 2015, Vol-2, pp.148-156

Kuth is also very useful herb which is used in Cough, Leprosy and Itching etc. The diagram depicts that there is no production of Kuth in Almora and Champawat districts but Uttarkashi gets 50% of its total earning. Tehri gets 17%, Plthoragarh 3% Chamoli 20%, Rudraprayag 10% of total income.

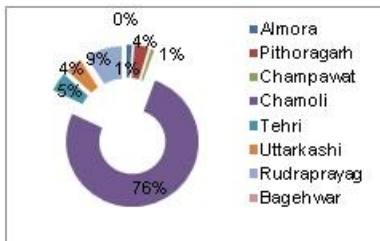
Fig.7- District Wise Income Distribution of Kuth



Source- IJSSM, 2015, Vol-2, pp.148-156

Badi Elaichi gives a very good aroma and highly used in Indian cuisine. It has medicinal value therefore it is cultivating in various districts of Uttarakhand. Chamoli is getting maximum 77%, Rudraprayag 9%, Tehri 5% of the total income of Badi Elaichi. Uttarkashi and Pithoragarh both are getting 4% and Champawat 1% while Bageshwar getting negligible amount.

Fig.8- District Wise Income Distribution of Badi Elaichi



Source- IJSSM, 2015, Vol-2, pp.148-156

Conclusion

The herbs cultivation is providing the different prospects to the farmers and unemployed youth to get employment at their own place in Uttarakhand. The crops which are produced in Uttarakhand need a high altitude and these are traditional herbs which are difficult to grow but the environment of Uttarakhand is very cheering to the growth of these herbs. The local people of different districts in Uttarakhand are now earning large amount of money by the production of herbs like Kuth, Kutki, Lemon Grass, Ashvghandha etc. The Uttarakhand government focuses on increasing the cultivation of medicinal and aromatic plants of different districts, for that they are providing quality planting material and training to the farmers. The Uttarakhand government have started different schemes for promoting herbs and medicinal plants like Jodi - Buti Yojana, National Mission on medicinal plants etc. The farmers are also supportive to the system of direct selling to agents and industries, by this they earn quick and thick amount of money. The farmers of Uttarakhand are able to export their herbs in huge quantity in the different parts of the world. Further the author wants to state that to promote the herbs and aromatic plants cultivation and sell in national and international market, Uttarakhand government can promote herbal tourism in the state for the economic development.

Problems of Medicinal Plants Cultivation

1. The herbs cultivation is different from the cultivation of vegetable, grain etc and the production is very time taking.
2. This cultivation is full of risk due to lack of knowledge and cultivation methods.
3. People are not aware from the utility of these herbs that is why there is insufficiency of investment in this field.
4. Farmers are focusing on cultivation of few herbs and the methods of cultivation which have been using by farmers, are traditional.
5. There is shortage financial help for seed, sapling and the machinery.
6. Being a mountainous state, Uttarakhand has small land holding and modern techniques cannot be used in small field. So the farmers are forced to use traditional method of cultivation.
7. There is lack of researches related with herbs cultivation and the investment is also not being done.
8. Local people collect herbs from the forests and sell them at low price in the market. Consequently they cannot get sufficient price of their production.
9. Those farmers are cultivating herbs cannot get information of market related to exact price and the suitable time for trade their production in market.
10. There are very few planning related with the cultivation of herbs due to the listless government.

Suggestions

1. Having information about surface through the analysis of satellite imagery, suitable areas should mark for the herbs cultivation.
2. The work of soil testing should be given to scientific organization and on the basis of results sapling and organic fertilizers should be provided to farmers.
3. Authentic and decontaminate seed and sapling should be given to the farmers so that they can get a sufficient production of herbs.
4. For the accomplishment of the production of herbs the traditional medical manner should be connect directly to employment.
5. To enhance the capacity and knowledge of farmers, farmers should be provided training programme at block level.
6. Farmers need the store houses to keep protecting their production.
7. Farmers should be linked directly to market so that they can get proper price of their production and stay safe from the negotiator.
8. There should be unbreakable law to stop the black market and illegal exploitation of herbs.
9. For the promotion of herbs cultivation, seed center should establish at university level and post-establish departments should encourage to do research in field of medicinal plants.

References

1. Pangriya Ruchita. "Study of Aromatic and Medicinal Plants in Uttarakhand, India: With Focus on Role in Employment Generation and Supply Chain Management". *International Journal of Social Science and Management* (2015):148-156.
2. Dr.Singh Gurupal and Uniyal Mayaram, Aushdiya Padapo ka Vyavsayik Krashikaran, India Society of Agri Business Professional, New Delhi (2003).
3. Kurukshetra Varsh 55 Ank 9, July (2009), Gramin Vikas Mantralaya, Bharat Sarkar, New Delhi.
4. Nautiyal MC, *Medicinal Plants: A Resource for Uttarakhand*, Indian Publication Comp, New Delhi.
5. Jadi- Buti Karshikaran hetu Vitt Posan ki Yojanaein- (2005), Jadi- Buti Shod avm Vikas Sansthan, Gopeswer.
6. Gaur RD. "Flora of the District Garhwal, North west Himalaya (With Ethnobotanical Notes)". Transmedia Srinagar Garhwal, Uttarakhand (1999).
7. Naithani BD, *Flora of Chamoli*, (BSI. Hawrah) (1984-1985).
8. Bhatt VP and Vashishta DP. "Indigenous plants in traditional healthcare system in Kedarnath valley of Western Himalayan". *Indian J Traditional Knowledge* (2007). vol 7 no 2.
9. Bawa KS. "Conservation of biodiversity in the Himalaya, a concluding remark and agenda for action" In *Himalayan biodiversity conservation strategies in:* (eds. U. Dhar) GBPHED Almora (1995) 529-535.
10. Mukherjee, T.K. "Protection of Indian Traditional knowledge: In *Ethno medicinal Plants*". Edited by Trivedi, P.C. & Sharma, and N.K. Jaipur. Poiner Publishers, 2004.
11. Vinatha Naini and Estari Mamidala. "An Ethnobotanical Study of Plants Used For the Treatment of Diabetes in the Warangal District". Andhra Pradesh. India. Biolife. 2013.
12. Swe, T. and Win, S. "Herbal gardens and cultivation of medicinal plants in Myanmar regional consultation on development of traditional medicine in the South East Asia region". Myanmar: Department of Traditional Medicine, Ministry of Health, 2005.
13. Joshi BC and Joshi Rakesh K. "The Role of Medicinal Plants in Livelihood Improvement in Uttarakhand". *International Journal of Herbal Medicine* 2014.
14. Panwar, MS., Sharma, SK. And RB. "Medicinal Plants and Sustainable Livelihood" R.K. publication (2007). New Delhi.
15. Dhar, W., Manjkholia, S., Joshi, M., Bhatt, A., Bhatt, A.K. "Current Status and Future Strategy for Development of Medicinal Plants Sector in Uttaranchal, India. *Current Science* (2002).