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## Scope of cultivation and value chain perspectives of medicinal herbs in India: A case study on aloe Vera and Isabgol

**Rakesh Rathore and Aditi Mathur**

### Abstract

Value chain is important for creating value for the products and it helps in reaching the products to the end consumers. The medicinal herbs can be grown well in arid and semiarid region of country with adequate irrigation requirement. The demand of Indian Isabgol and aloe Vera is increasing due to its high value addition potential. The timely marketing of the medicinal herbs play important role in enhancing farmers' income. The efficient value create value for crops and helps in creating link between farmers' producer and its ultimate consumption. The medicinal plants products demanded in the national and international market. The proper value chain explore the opportunity for export. The paper is based on secondary source of information and data which are collected from different published sources such as research papers and article and magazine. The paper helps in highlighted the cultivation and value chain aspects of the medicinal plants Isabgol and aloe Vera. The paper also highlighted the importance of the medicinal herbs. The farmers' producer, local traders, wholesalers and retailers are the intermediaries in the value chain of the crops. Immediately processing of aloe Vera crop is important post-harvest operation of the crop to reduce the losses. The cleaning is important process of Isabgol crop after harvesting to get better price in the market.

**Keywords:** Aloe Vera, Isabgol, medicinal herbs, value chain

### Introduction

The cultivation of medicinal herbs in India considered as commercial case crop. Medicinal plants are provide healing and curative properties to the human health. The use of medicinal herbs are increasing rapidly because it is being used in curing various human ailments and diseases. Medicinal herbs are economically important herbs and India is the known as home of medicinal and aromatics herbs. Medicinal and aromatic plants constitute a major segment of the flora, which supply raw materials for use in the pharmaceuticals, cosmetics and drug industries and medicinal plants has very high domestic and export demand (Nagaraju *et al.*, 2018) <sup>[17]</sup>. Most of 90 percent medicinal plants traded in India collected from wild, due to increasing demand of medicinal plant around 1000 species under treat to loss (Keshari & Pradeep, 2018) <sup>[13]</sup>. The national and international consumption and demand of the medicinal herbs are increasing and expansion in the market of medicinal herbs climbing because the most of the population moving towards natural herbal treatments and products. The increasing focus on the importance and herbal and medicinal properties of medicinal and aromatic plants in health systems, solving the health care problems of the world (Badalingappanavar *et al.* 2018) <sup>[9]</sup> The value chain concept involve various intermediaries involve in the chain of the pants to create the value for the customer or end market. The aloe vera plants provides good remunerative return it has several medicinal properties and use of aloe vera herbal products increasing. The crop can be grown in dry region and sandy soil but adequate watering facilities gives high gel contain in leaves and yield of the crops. The successful cultivation of the crop are economically attractive and medicine prepared from its leaves (Biswas, 2010) <sup>[3]</sup>. Isabgol is one of the important medicinal crop in India and it is largest exported medicinal plant commodity of the India. The arid and semi-arid region is the suitable for the crop. The use of Isabgol and its value added products increasing in national and international market due to its medicinal properties. The demand of Indian Isabgol is increasing due to its high value addition potential. The husk of Isabgol contain mucilage which is used in preparation of medicine and used in various system of medicine (Jain, 2014) <sup>[11]</sup>. The concept of value chain activities involve series of activities different phase production, marketing and delivery to the end consumers and it performed how value is created (Kaplinksky and Morris, 2000) <sup>[12]</sup>.

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## Review of literature

Hishe *et al.* (2016) <sup>[10]</sup> concluded the market of medicinal herbs often dominated by small players and value chain of medicinal plants has some unique characters. The quality and availability of medicinal products vary all over world. The quality product and others requirements has impact on value chain of medicinal plants. The quality standard for the export of medicinal herbs are impact on value chain. Bali *et al.* (2015) <sup>[6]</sup> revealed the leaves of the plant highly perishable in nature the quick post-harvest management are required the processing of the leaves required to extract gel immediately to reduce the post-harvest losses and it required series of processing techniques. The average yields of the plants is 200 quintal leaves per hectare in India. Alam and Belt (2009) <sup>[2]</sup> revealed the demand of medicinal plants is high in pharmaceutical industry for its actives components. The collection and marketing of medicinal plants is very important source of livelihood. The government and NGO playing important role in promoting the cultivation and marketing of medicinal plants. Marshal (2011) <sup>[15]</sup> studied distribution of medicinal plants involves series of activities it involve primary collector, producer, local wholesaler, specialized marketers etc. The most of the plants traded locally and in small quantities. Exporters collect medicinal plants from the local traders. Medicinal plants producer, wholesalers, retailers involves in the supply chain on medicinal herbs. Moghadam Z., (2016) <sup>[16]</sup> found that arid and semi-arid region has economically advantage of producing medicinal plants. Governmental support also helps in enhancing the medicinal plant cultivation. Bukar *et al* (2016) <sup>[8]</sup> revealed procurement and distribution of medicinal plants has difficulties due to lack of experience and also poor legislation. The low income country should identify suitable research to sustain the medicinal plant economically. Malik and Zarnigar (2013) <sup>[14]</sup> Aloe vera particular popular for its medicinal properties. It has variety of uses, in India it is cultivated in Rajasthan, Gujarat, Madhya Pradesh, Andhra Pradesh and Tamil Nadu. It is commercially cultivated in South Africa, United States India etc. Thamsai and Praveena (2016) <sup>[18]</sup> revealed in their study the total marketing cost of the product was Rs.5800 out of transportation cost involved Rs.4000 and few cost involved in marketing of aloe vera products. Balram *et al.* (2012) revealed that the herbal industry playing important role in the cultivation of medicinal herbs. The industry procuring medicinal plant through the network of traders who collected from the collector or producers. The study also concluded the contract farming with industry helps in market access and high return for the medicinal herbs.

## Methodology

The paper based on secondary data and information the secondary data and information related to medicinal plants are collected from various literatures and published sources reports magazines and various research papers.

## Result and discussion

### Aloe vera (Ghrit Kumari)

(i) Climate and Soil- loam to sandy loam soil is best, aloe vera grown in some part of Rajasthan thrives best growth and maximum yield. The soil pH range from 6.5-8.5 ideal for aloe vera cultivation. (ii) Propagation- aloe vera propagated through the small plant suckers which around the main plants the plant height 15-20 cm is best for propagation of aloe vera. (iii) Manure and irrigation- The 150-200 quintals well compost FYM or manure before transplanting or at the time of land preparation required for high yield and better growth of the plants. After transplanting immediately irrigation required (iv) Harvesting- After 10-12 months after transplanting crop is ready for harvesting. Fresh leaves yield 100-200 quintals may get from first harvesting and it increased in next year (Aush Gyanya, 2016) <sup>[5]</sup>.

### Isabgol

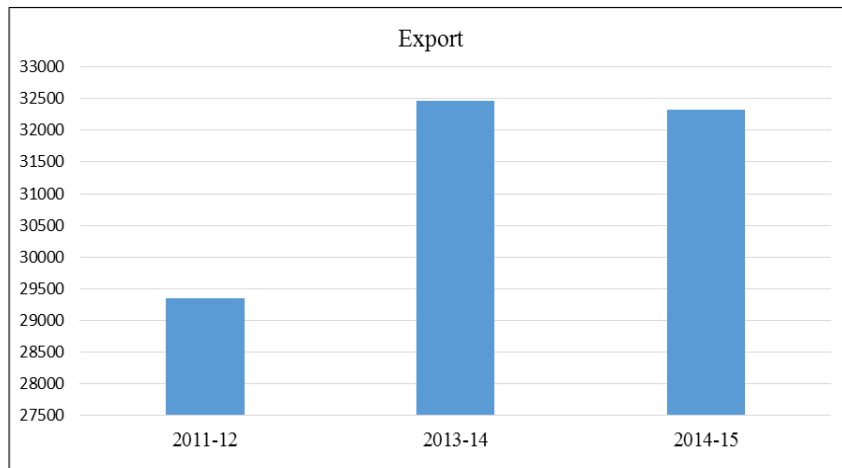
(i) Uses- husk use as laxative, constipation, chronic diarrhea, and uses in various industry bakery products. (ii) Soil and Climate- arid and semiarid region. Sandy loam to loamy soil is best suitable for Isabgol crop. (iii) Land preparation and sowing- direct seed sowing in the month of Oct-Nov. land should be plough and level before sowing of the crop. The 4 kg seed is required in hectare for optimum plant. (iv) Manure and Fertilizer-100-200 quintal compost FYM and 20-25 kg NPK required for better growth and yield of the crops. (v) Irrigation- Timely irrigation is required, after sowing the crops 20-30 days, first irrigation is required. The 6-7 irrigation required in dry region. (vi) Harvesting- Harvest the crop in 4 months and threshing is required to separate the husk from the seed. Average 80-100 quintal seed yield may obtain from good Isabgol crop. (vii) Post harvesting processing- Post harvest processing is usually the most critical stage in determining the quality of the product. The harvested Isabgol should be prevented from any contamination, or damage at any stage during processing of Isabgol (Anonymous, 2015) <sup>[4]</sup>.

**Table 1:** Area, Production and Productivity of Medicinal and Aromatic plants in India

Year	Area ('000 ha)	Production ('000 MT)	Productivity (Tone/ha)
2004-05	131	159	1.2
2016-17	664	972	2.2
2017-18*	650	1037	2.2

(Source: Annual report, Agriculture welfare, Ministry of Agriculture, India. agricoop.nic.in)

Isabgol is most and exported medicinal crop of the country in the year 2011-12 the crop exported 29343 tons, and it increased to 32325 tons in the year. The year wise export of Isabgol shown in graph below.



(Source: DGFT 2016, <https://www.thehindubusinessline.com>)2013-14

**Graph 1:** Year wise exported Isabgol from India

**Marketing**

**Channel involve in marketing of aloe vera**

Farmers/ Producer→ local traders→processing unit  
 Farmers/Producers→local traders/ Wholesaler→processing unit  
 Farmers/Producer→processing unit

**Channel involve in marketing of Isabgol**

Farmers/Producer→Wholesaler→Retailer→Consumer  
 Farmers/Producer→Wholesaler→processing unit→Retailer→Consumer

(i) Farmers/Producers- The farmers or producers cultivated or produce crop and sell to the local traders or to the wholesaler. The value chain start form the producers and end with end consumers. The producer are the source of supply the raw material in the value chain of the crop. (ii) Traders- Traders or local traders buy the raw material from the producer in agree pricing. The generally lack of ready market for aloe vera is main difficulty faced by the farmers. (iii) Processing unit- Processing unit play major role in processing the raw material. The processor also buy the raw material direct from the farmers or to the wholesalers and extract gel and juice in case of aloe vera crop and added value to the crop for better pricing of the products. (iv) Wholesaler- Wholesaler buy the raw material direct to the farmers and act as main intermediaries of the marketing and value chain of the crops. Wholesalers supply products to the retailers. (v) Retailer- buy the products from the wholesalers and supply in retail to the end consumer at the few profit margin.

**Table 2:** Value added products of aloe Vera

Value added products	Benefit
Aloe crack cream	Healing effects
Aloe moisturizer	Make skin smooth
Aloe candy,	Shelf life is more them six months
Aloe jelly	rich source of polysaccharides

(Source: CAZRI)

**Table 2:** Major Private Companies of medicinal herbs in India

i.	Dabur
ii.	Himalaya
iii.	Patanjali
iv.	Zandu
v.	Emami
vi.	Vicco
vii.	Baidyanath

Source: Agriculture today, the national agriculture magazine

**An efficient marketing and value chain system**

1. Post-harvest management- Aloe vera leaves are perishable in nature and after harvesting immediately it should processed otherwise spoilage chance of the leaves increased. The proper and quick post-harvest management or reduction in post-harvest loses helps in efficient marketing and value chain at different stages of marketing.
2. Grading, cleaning and processing- The cleaning and processing is needed to get good return in the market of the produce. The cleaning is important process after harvesting of the Isabgol and processing of the leaves of the aloe vera is important process to get pulp and gel for various important aloe products.
3. Value addition-The value addition helps increase the value and price of the produce and various value added medicinal product demanded by the consumers. Post-harvest loses can be minimize by the value addition.
4. Export promotion- The medicinal plants products demanded in the national and international market. The proper value chain explores the opportunity for export. The demand of the medicinal herb product in the international market is increasing, the export of the product demand can be overcome and it is opportunity for foreign exchange.

**Measure of improving value chain of medicinal herbs**

(i) Establishing more processing unit helps in reduction in post-harvest losses and also helps in creating value to the products (ii) Public private partnership helps in infrastructure development for the market and supported to the marketing of the produce (iii) Favorable government policies support needed for enhancing the cultivation and value chain of the medicinal herbs (iv)Efficient marketing information system helps in efficient dissemination of the marketing information to the stakeholder involve in value chain (v) Vertical integration of farmers through cooperatives, contract farming and retail chains of medicinal plants growers.

**Conclusion**

The demand of medicinal herbs has increased in pharmaceutical and cosmetic industry due to its medicinal properties. The efficient marketing and value chain helps in more production and supply of the crops. Due to insufficient marketing facilities the amount of post-harvest loss has intensified. The efficient marketing information system and

government support encourage the farmers producer to engage in more cultivation of the crops. The cooperatives and contract farming system is helpful in good price for the farmer's producer for their produce. The processing unit play important role in reduction of post-harvest losses. Aloe vera and Isabgol both are important medicinal herbs due to its medicinal uses and both can be grown well in arid and semi-arid region of the country and the area and production for its cultivation may increase by developing good marketing and value chain system in the country.

## References

1. Agriculture today, The National Magazine. Agriculture Year Book, 2018, 68-69.
2. Alam G, Belt J. Developing a medicinal plant value chain, lessons from an initiative to cultivate Kutki (*Picrorhiza kurroa*) in Northern India. Royal tropical institute. KIT working paper, 2009, 1-14. [www.fao.org/3/a-at334e.pdf](http://www.fao.org/3/a-at334e.pdf)
3. Biswas BC. Cultivation of Medicinal Plant Success Stories of Two Farmers. Fertilizer marketing news. 2010; 41(3):1-4.
4. Anonymous. Good Agriculture Practice for Isabgol. Director of Medicinal and Aromatic Plants research, Boriavi, Anand, 2015.
5. Aush Gyanya. Handbook of medicinal and aromatic plants cultivation. Central Institute of Medicinal and Aromatic Plants Lukhnow, 2016, 20-22.
6. Bali B, Meghawal D, Lal J, Chandrawat KS. *Aloe vera*, Cultivation Practices and its Human Benefits. Popular Kheti, 2015; 3(3):53-56.
7. Balram C, Goyal A, Sukhbir K, Pawan K, Navgeet K. Contract Farming of Medicinal Plants in India. International Journal of Pharmaceutical Erudition, 2014; 2(2):40-44.
8. Bukar B, Dayom D, Mary Uguru1 O. The Growing Economic Importance of Medicinal Plants and The Need for developing countries to harness from it: A Mini Review. IOSR Journal of Pharmacy. 2016; 6(5):42-45.
9. Badalingappanavar R, Hanumanthappa V, Shashikala K, Gajendra K. Organic fertilizer management in cultivation of medicinal and aromatic crops: a review. Journal of Pharmacognosy and Phytochemistry. 2018; SP3:126-129.
10. Hishe M, Asfa Z, Giday M. Review on value chain analysis of medicinal plants and the associated challenges. Journal of medicinal plant studies. 2016; 4(3):45-55.
11. Jain L. Economics and gap analysis in Isabgol cultivation through frontline demonstrations in western Rajasthan. International Journal of Agricultural Extension. 2014; 2(2):109-114.
12. Kaplinsky R, Morris M. A Handbook for Value Chain Research, Prepared for the IDRC, Institute for Development Studies, Brighton, UK, 2001.
13. Keshari P, Pradeep. A review of conservation and sustainable use of medicinal plant with special reference of *Tecomella undulata* (Sm.) Seem. Journal of Pharmacognosy and Phytochemistry. 2018; SP3:09-13.
14. Malik, Zarnigar. Aloe vera a review of its clinical effectiveness. International Journal of Pharmacy. 2013; 4(8):75-79.
15. Marshall E. Health and wealth from Medicine and Aromatic Plants. FAO. Rome, 2011.
16. Moghadam Z, Mohkami Z, Badihbarzin H. Analysis Economic of Medicinal Plants production in tropical area. Bulletin de la Society Royale des Sciences de Liege. 2016; 85:1308-1315.
17. Nagaraju K, Vishwanath M, Aruna K. Seed quality enhancement techniques in medicinal and aromatic crops. Journal of Pharmacognosy and Phytochemistry. 2018; SP3:104-109
18. Thamsai T, Praveena S. An analysis of production and processing of *aloe Vera*. International Journal of Agriculture Science and Research. 2016; 6(6):51-56.
19. Value added products from aloe Vera, effective skin care products. Institute Technology Management Unit Central Arid Zone Research Institute (CAZRI). Jodhpur. [www.cazri.res.in/itmu/pdf](http://www.cazri.res.in/itmu/pdf).