Research Paper

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Study on the problems and need of the herbal industry in H.P.

Science

KEYWORDS : Herbal Industry, Raw Material, Processing, Management Problems

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ABSTRACT

Himachal Pradesh is rich in plant diversity. Due to congenial agroclimatic conditions, H.P. is suitable for cultivation of high value medicinal plants for income generation. Indian herbal market is likely to reach Rs.15, 000 crore by 2015. A sample of 42 herbal industries from four districts of H.P. was selected for the study to understand the problems regarding technology, management and research needs for boosting quality production of herbals. Suggestions emerged from survey data analysis and an interactive meet with the industry is also presented.

Summary:
Himachal Pradesh (H.P.) has enormous plant diversity. Based on the distribution and potential values of medicinal plants as an income generating resources, medicinal plants are cultivated in different agro- climatic zones of the state. A sample of 42 herbal industries from four districts i.e. Solan, Kangra, Sirmour and Mandi was drawn for the study. Problems faced by the herbal industries regarding infrastructure management, human resource, raw materials, processing, quality management, packaging, transportation, research need, IPR and policy issues were evaluated. Some suggestions like developing agrotechnology, creation of centralized market for raw procurement of raw material, establishment of centralized facility for quality analysis etc. emerged.

Introduction
Herbal medicines play a significant role in India. A similar practice is also prevalent in China, South East Asia and Africa. At global level, 80% population depends on traditional medicines for their primary health care need (Owolabi *et al*., 2007). The term "herbal drug" determines the part/parts of a plant (leaves, flowers, seeds, roots, barks, stems, etc.) used for preparing medicines (Anonymous, 2007a). The demand for plant based products are increasing in both developing and developed countries as they are generally considered as safe for consumption and use (Kalia, A.N., 2005).

The annual turnover of the Indian herbal industry is about Rs. 2,300 crore with a growth rate of 15% (Krishnan, R., 1998). Indian herbal market is registering a sustained growth and is likely to reach Rs.15, 000 crore by 2015 (ASSOCHAM). USA, Pakistan, Germany, Japan, UK, Spain, China, France, Vietnam and Mexico were the top ten export destinations for India's herbal exports over the last three years. USA remained the top constituting 35.7%, followed by Pakistan constituting 10.6 % of India's total herbal exports in 2009-10.

Himachal Pradesh is rich in plant diversity due to having different agro-climatic zones: Tropical and Sub-tropical Zone (< 1, 800m), Tropical and Sub-tropical Zone (< 1, 800m) and Sub-alpine and Alpine Zones (> 2, 800m). More than forty species, enlisted by the state forest department, are exported from the state. State Medicinal Plants Boards (SMPB), CSIR- IHBT, Other Government Research Bodies, Universities, NGOs, etc. are doing research for the purpose of promotional and commercial/ economic activity leading to cultivation and utilization of medicinal plants. As per information available from Ayurvedic department of H.P., there are 1141 traditional medicinal health care units (through1109 Ayurvedic dispensaries, 3 Unani systems, 4 Amchi (Tibetan), 25 Ayurvedic hospitals). There are 95 Ayurvedic Pharmacies in the State, which are manufacturing herbal medicines after getting the license from the Department (http://hpayurveda.nic.in).

Methodology:
The study on problems of herbal processing units in H.P. is based on primary data. Primary data was collected using a pre-tested structured questionnaire. Data was recorded after personally interviewing top management. Data collected was analyzed.

For primary data collection, four districts of H.P. were earmarked on the basis of the concentration of herbal processing units. As per the information available from Ayurveda department of H.P. (http://hpayurveda.nic.in) it was evident that that distribution of registered herbal industries are as follows: (i) District Solan: 41, (ii) District Kangra: 19 (iii) District Sirmour: 10 (iv) Distrct Mandi: 4 (v) District Una: 4, (vi District Bilaspur: 3 (vii) District Hamirpur: 2 (viii) District Kullu: 1 (ix) District Shimla: 2 (x) District Chamba: 1. In actual the number exceeds if we include the non-registered herbal industries. In our study we included both registered and non-registered herbal industries.

As most of the industries are concentrated in four districts of H.P. i.e. Solan, Kangra, Sirmour and Mandi, these districts were selected for the study. Hence a sample size of 42 industries was selected for data collection. Sample size of 42 herbal industries (registered and non registered) comprised of 11 industries from Kangra, 9 from Mandi, 11 from Solan and 11 from Sirmour districts.

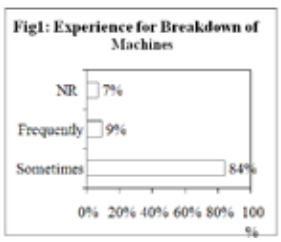
Results & Discussion:
Study on problems faced and need of the herbal industry in H.P. was evaluated on the basis of information collected on the following issues:

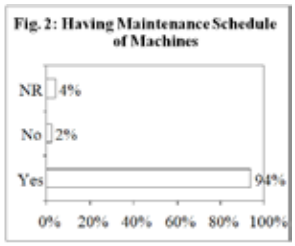
- Infrastructure management
- Human resource management
- Management of raw materials
- Processing management
- Quality management
- Packaging
- Transportation
- Research need
- IPR
- Policies

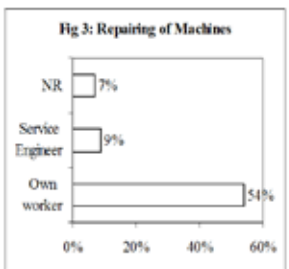
General points about herbal industry:
(a) Infrastructure Maintenance
The majority of the industries (86%) have indigenous machines. The responses received from the survey depicts that there is no serious problem with respect to the breakdown of machines (Fig 1). Most of the industries (94%) have the practice of routine maintenance (Fig 2) which aids in upkeep of machines in right state. Also, it has been observed that incase of breakdown, the repair is first attempted by the workers of the company and if the problem still persists then service engineer is called upon (Fig 3). Since most of the machines are locally available (Fig 4) in the country, procurement and its repair is not a major prob-

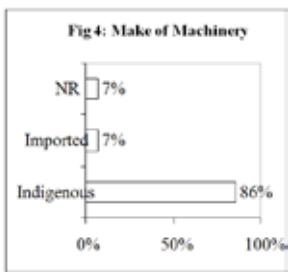
lem. It may be considered that for establishing herbal industry, procurement of desired machinenaries and their repair are not a problem.

Maintenance schedule of machines

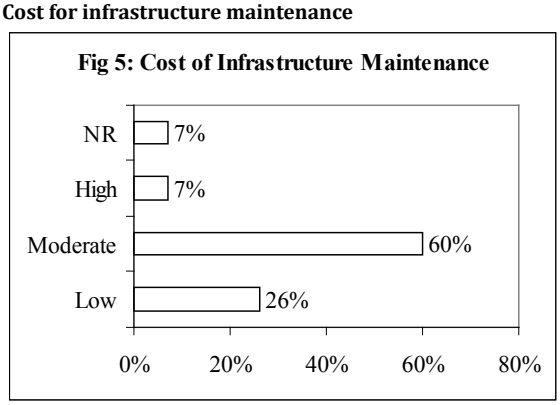






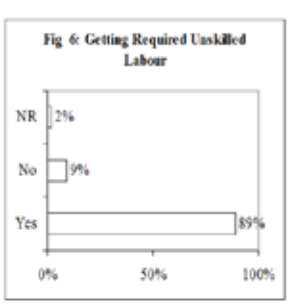


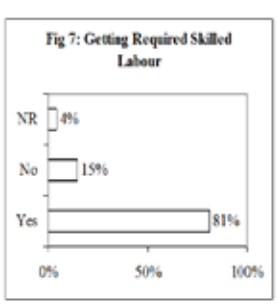
Cost for infrastructure maintenance

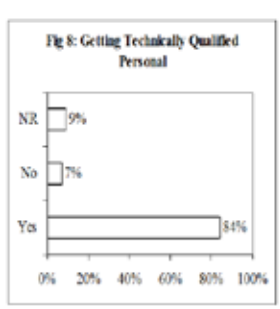


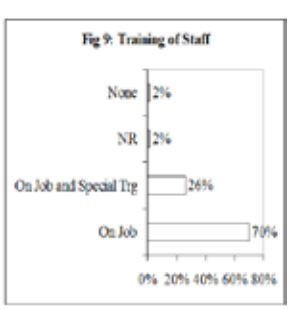
About 86% of the companies expressed that the charges of infrastructure maintenance is low to moderate (Fig 5) and they did not mind in spending as it is in the interest of the company.

(b) Human Resource



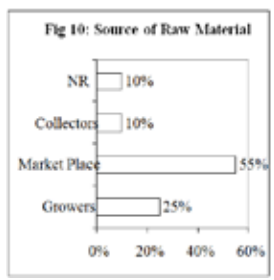


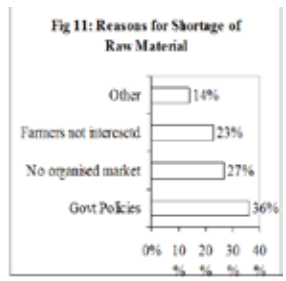


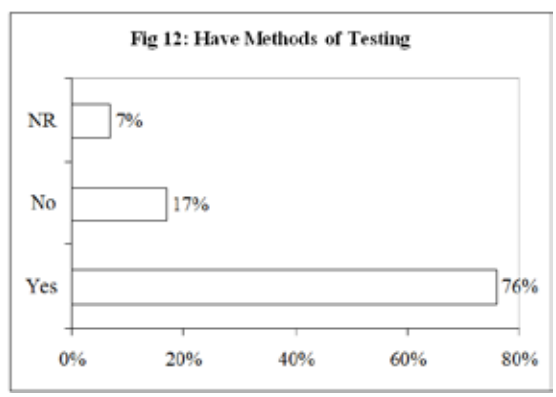


Survey results indicate that initially getting manpower including unskilled (Fig 6), skilled (Fig 7) and technically qualified (Fig 8) competent person is not a problem. However, striking revelation is that the staffs are trained "on job" by the organization (Fig 9) and they are rarely sent for specialized trainings once inducted. It indicates that tremendous scope exist in motivating the management of herbal industry to send their technicians and staff for training to upgrade their skills and encourage innovation in the organization.

(c) Raw material







Maintaining a sustained supply of good quality raw material is a challenge for herbal industry. Presently, majority of the raw materials are procured from Amritsar and Delhi markets (Fig 10). Also, the industries greatly depend on the collectors. Only a few selected industries procure their materials from the planters/ farmers and that too only for a few selected crops. Agrotechnology package with techno-economics data of large number of medicinal crops are still not readily available. During the discussions it emerged that farmers are not ready to take up cultivation of medicinal plants (Fig 11) as they don't not have assured markets and there is great degree of cost fluctuations. Further, the delay in renewal of forest land for cultivation of medicinal plants also adversely affects the interest of the farmers. Though majority of industries agree that they have a check on the quality of raw material (Fig 12) being procured, but on direct interaction it was found that physical appearance was the major criteria of selection and chemical characterization is not done prior to processing. It was felt that since there is no organized market of raw material that could fulfill the need of the industry, it is not stringent on quality issues as they do not have many alternatives. The survey results indicate that raw material management is a grey area in herbal industry. Due to shortage of raw materials several industries fail to run to the maximum capacity.

(d) Processing:

During interaction it was observed that industry follows the routine way of manufacture and do not deviate much form the existing protocol. However, certain process improvements are made from time to time but these are neither systematically recorded nor protected through IPRs. During personal interaction it emerged that managers and other officials attend meetings and seminars to keep themselves updated (Fig 13) but innovation is not followed as a way of practice. Hence, it was felt that industry has a great scope to introduce innovative practices but no serious thought has been given in this direction.

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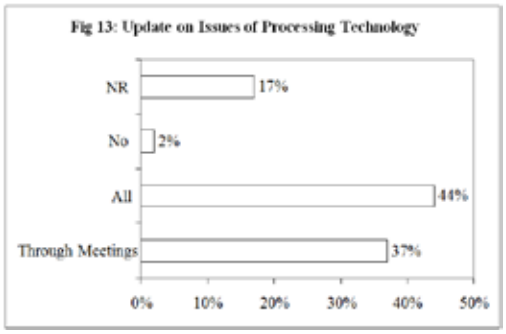
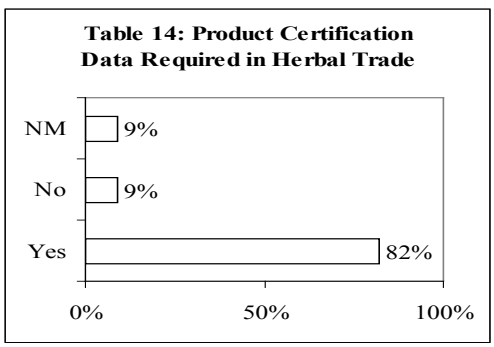
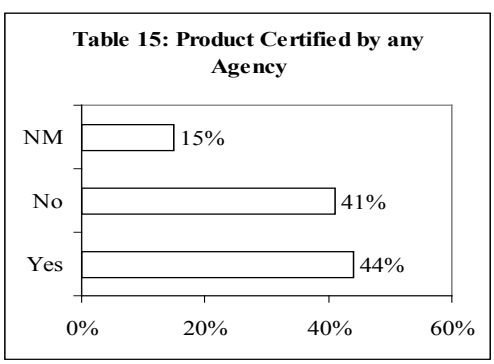


(e) Product Quality

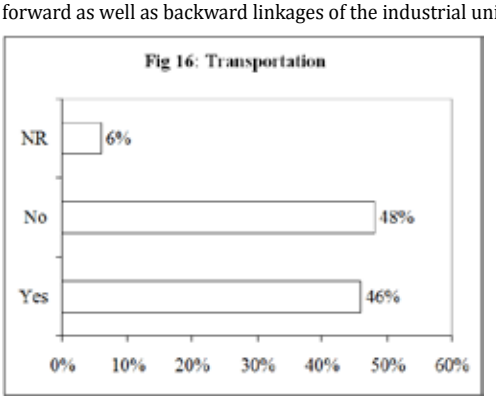




It was observed that almost all the herbal units are conscious of the quality of the end product (Fig 14) and have certain means to analyze their products. However, on closer discussion it was observed that only a few units get their products assessed by recognized organizations or institutes and rest depend on their own lab (Fig 15). It was also found that much emphasis is not laid on batch to batch consistencies by the smaller units.

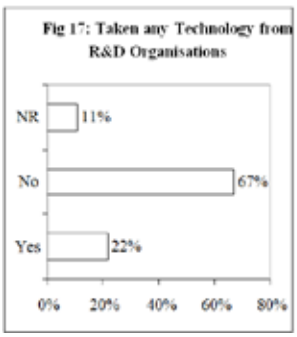
(f) Transportation Network

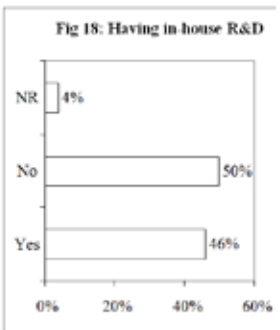
It was observed that due to remote geographical location, there was lack of adequate transport network (Fig 16) for inward as well as outward transportation. This creates hindrance for making both forward as well as backward linkages of the industrial units.



(g) R&D

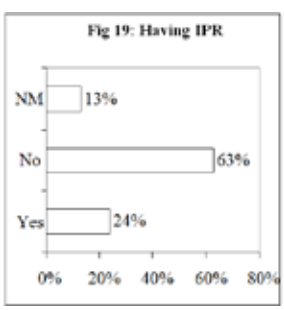
When asked about the expectations industry have from research institutions it was expressed that R&D institute does not often understand the need of the industry. Also, many a time's right information with respect to technological advancement does not reach the industry at right time. To make the matter worse there is lack of interaction between industry and R&D organization and they seldom meet on common platforms.

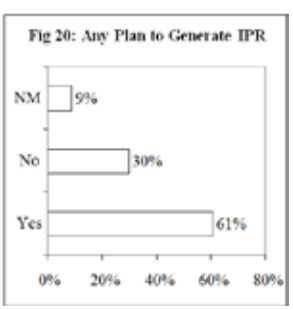




Most of the CEOs felt that industry is not aware of the developments made by the research organizations. In some cases it was found that industries availed services of R&D organization (Fig 17) in chemical analysis of their products. It was felt that though majority of the industrial units understands the importance of in house R&D (Fig 18) but only very few are actually ready to initiate research. The major limitation being high cost and lack of trained manpower.

(h) IPR





Though none of the herbal industry had their own IPR (Fig 19) but with changing times certain large companies felt that they should have their own R&D units and IPRs (Fig 20).

Suggestion:

In addition to the survey an interactive meet was also organized by the institute to understand the R&D and management needs of the herbal industry. Twenty four herbal industries from Punjab and Himachal Pradesh participated in the meet. Following points emerged during the discussion:

- **Developing agro and processing technology:** Commercial **c**ultivation of medicinal and aromatic plants is difficult. Research need to be done to understand the reproductive biology of these plants. Also, protocol needs to be developed for large scale multiplication of these plants through micropropagation. Availability of elite planting material is a major limitation and standardized package of practices is not available to farmers.
- **High quality products**: It was felt that research institutes should organize training programmes on processing technologies so that industry could follow Good Manufacturing Practices such that the final products find acceptability in international market.
- **Centralized facility for quality analysis:** It was expressed that Govt. could facilitate in setting up of centralized certified analytical labs in each cluster equipped with high throughput equipment and expert manpower so that interested herbal industries could utilize the facility for quality analysis of their products rather than having

- Developing a suitable model for the sustainable cultivation of some important medicinal plants
- To strengthen the collaboration between Industry and Research Institutes for carrying forward the research regarding cultivation, value addition of medicinal plants having market potential
- To improve and enhancing the testing facilities for raw material as well as for the final product for creating more export potential
- Motivating the industrial units for having IPRs for their novel products to have a market niche.
- It was also felt that Govt should take priority for creating better infrastructure for easy transportation to create forward and backward linkages.

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Note:
The views expressed in the article are those of the authors and not of the Department of Scientific & Industrial Research, under whose support a Diagnostic Study to assess technology and management needs of Herbal Industry was carried out.

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