

ORGANIC CULTIVATION FOR MEDICINAL DRUGS- LITERARY REVIEW

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ABSTRACT

Herbs plays an important part in Ayurveda treatment, number of plants are used by Ayurveda practitioner for treatment. These are collected from field's forest etc. In ancient era these drugs were collected in proper time, proper method from Mother Nature. But in today's scenario out these many drugs, many are unavailable and some are scanty. Due to scanty these drugs are adulterated with substitute or similar looking drugs. To overcome this malpractice of drugs, cultivation of medicinal drugs should be done to achieve market demand. In cultivation of medicinal drugs following technique of agriculture, organic cultivation etc is in use. In process of agriculture

many pesticides, herbicides are use, these chemicals may absorbed by the medicinal plant. It may lead to lower the potency of drug or may react with active principle. These may result in action of the particular drug. Further work stated a brief on organic cultivation and its merits demerits will be enhanced.

KEYWORDS: Organic, Medicinal drugs, Herbs.

INTRODUCTION

Organic farming does not mean going 'back' to traditional methods. Many of the farming methods used in the past are still useful today. Organic farming takes the best of these and combines them with modern scientific knowledge. Organic farmers do not leave their farms to be taken over by nature; they use all the knowledge, techniques and materials available to work with nature. In this way the farmer creates a healthy balance between nature and farming, where crops and animals can grow and thrive. To be a successful organic farmer, the farmer must not see every insect as a pest, every plant out of place as a weed and the solution

to every problem in an artificial chemical spray. The aim is not to eradicate all pests and weeds, but to keep them down to an acceptable level and make the most of the benefits that they may provide."Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved ".

Medicinal plants are now a day's grown in farms by farmers in conventional methods. But in conventional methods many pesticides, insecticides and chemicals are used in farms to protect plants from harmful organisms. Medicinal plants are used in treatment of humans and animal by *Ayurvedic and Unani* practitioners, these medicines should be in their natural form with highest potency for effective treatment. Plants that are grown by conventional method may absorb harmful chemicals used in insecticide, pesticides or improving soil quality etc. also these chemicals may react with the active principles, alkaloids etc present in plants. In such case these plants may yield low potency, and cause less effective in treatment. So to overcome these issues and to flourish a well effective treatment science, medicinal plants should be used that are grown in a natural way or by organic cultivation. It will have more potency less harmful chemicals used in farms.

In this article a brief focus is put on organic farming, and how it can be implementing in medicinal plants farming will be discussed. This will help to maintain demand and supply ratio of herbs in market.

What is Organic?

Organic farming refers to agricultural production systems used to produce food and fiber. Organic farming management relies on developing biological diversity in the field to disrupt habitat for pest organisms, and the purposeful maintenance and replenishment of soil fertility. Organic farmers are not allowed to use synthetic pesticides or fertilizers. All kinds of agricultural products are produced organically, including produce, grains, meat, dairy, eggs, and fibers such as cotton, flowers, and processed food products. By using technique of organic farming medicinal plants can be grown by farmers in bulk for market supply. Some of the essential characteristics of organic systems include: design and implementation of an "organic system plan" that describes the practices used in producing crops and livestock products; a detailed recordkeeping system that tracks all products from the field to point of

sale; and maintenance of buffer zones to prevent inadvertent contamination by synthetic farm chemicals from adjacent conventional fields. Organic farming works in harmony with nature rather than against it. This involves using techniques to achieve good crop yields without harming the natural environment or the people who live and work in it.

Why organic

Organic farming provides long-term benefits to people and the environment.

Organic farming aims to

1. Increase long-term soil fertility.
2. Control pests and diseases without harming the environment.
3. Ensure that water stays clean and safe.
4. Use resources which the farmer already has, so the farmer needs less money to buy farm inputs.
5. Produce nutritious food, feed for animals and high quality crops to sell at a good price.

Modern, intensive agriculture causes many problems, including the following

1. Artificial fertilizers and herbicides are easily washed from the soil and pollute rivers, lakes and water courses.
2. The prolonged use of artificial fertilizers results in soils with a low organic matter content which is easily eroded by wind and rain.
3. Dependency on fertilizers. Greater amounts are needed every year to produce the same yields of crops.
4. Artificial pesticides can stay in the soil for a long time and enter the food chain where they build up in the bodies of animals and humans, causing health problems.
5. Artificial chemicals destroy soil micro-organisms resulting in poor soil structure and aeration and decreasing nutrient availability.
6. Pests and diseases become more difficult to control as they become resistant to artificial pesticides. The numbers of natural enemies decrease because of pesticide use and habitat loss.

What are the certification bodies?

Involvement in organic cultivation requires certification which makes easy and proofed documentation for sale and its purity in the market. Following are some certification bodies involved in organic cultivation.

1. 'Ecocert' inspects and certifies the products on the basis of the regulations applicable in concern market.
2. 'INDOCERT' is a nationally and internationally operating, certification body established in India. It is accredited by National Accreditation Body (NAB), Government of India, as per National Programme for Organic Production (NPOP). {Furthermore, INDOCERT offers Organic certification as per USDA-NOP standards for products destined for export to the United States. DAkkS, the German Accreditation Body accredited INDOCERT as per ISO65/EN45011 to carry out certification of products according to INDOCERT Organic Standard (equivalent to EC Reg. No.834/2007 and 889/2008) for Non EU country operators in the field of Plant Production, Feed Production, Feed Processing, Aquaculture and the export of these products according to the regulation of importing countries. INDOCERT is listed as equivalent certification body by European Union for the purpose of equivalence as per INDOCERT organic standard for Non EU country operators (equivalent to EC regulation 834/2007& 889/2008).

INDOCERT is accredited as per ISO 17021 & ISO 22003 by National Accreditation Board for Certification Bodies (NABCB, QCI, India) for providing Food Safety Management System Certification based on ISO 22000:2005 and I.S.343:2000 HACCP Certification. Indocert is accredited from National Accreditation Board for education and Training (NABET, QCI, and India) for conducting Lead Auditor course for food safety management system (ISO 22000:2005) for auditors and issue certificate to successful participants. INDOCERT is approved by High field awarding body for compliance (HABC) to offer Food Safety Training Programmes from Foundation Level to Level 4 and also approved by Royal Society for Public Health (RSPH), UK to offer Food Safety Training Programmes from Foundation Level to Level 4.

Purpose of certification

Organic certification addresses a growing worldwide demand for organic food. It is intended to assure quality and prevent fraud. For organic producers, certification identifies suppliers of products approved for use in certified operations. For consumers, "certified organic" serves as a product assurance, similar to "low fat", "100% whole wheat", or "no artificial preservatives". Certification is essentially aimed at regulating and facilitating the sale of organic products to consumers. Individual certification bodies have their own service marks, which can act as branding to consumers—a certifier may promote the high consumer

recognition value of its logo as a marketing advantage to producers. Most certification bodies operate organic standards that meet the National government's minimum requirements.

The certification process

In order to certify a farm, the farmer is typically required to engage in a number of new activities, in addition to normal farming operations.

- 1. Study** the organic standards, which cover in specific detail what is and is not allowed for every aspect of farming, including storage, transport and sale.
- 2. Compliance:** farm facilities and production methods must comply with the standards, which may involve modifying facilities, sourcing and changing suppliers, etc.
- 3. Documentation:** extensive paperwork is required, detailing farm history and current set-up, and usually including results of soil and water tests.
- 4. Planning:** a written annual production plan must be submitted, detailing everything from seed to sale: seed sources, field and crop locations, fertilization and pest control activities, harvest methods, storage locations, etc.
- 5. Inspection:** annual on-farm inspections are required, with a physical tour, examination of records, and an oral interview.
- 6. Fee:** A fee is to be paid by the grower to the certification body for annual surveillance and for facilitating a mark which is acceptable in the market as symbol of quality.
- 7. Record-keeping:** written, day-to-day farming and marketing records, covering all activities, must be available for inspection at any time. In addition, short-notice or surprise inspections can be made, and specific tests (e.g. soil, water, plant tissue) may be requested. For first-time farm certification, the soil must meet basic requirements of being free from use of prohibited substances (synthetic chemicals, etc) for a number of years. A conventional farm must adhere to organic standards for this period, often, three years. This is known as being in *transition*. Transitional crops are not considered fully organic. A farm already growing without chemicals may be certified without this delay.

Demand and supply: If we see the market of medicinal plants and their manufactured products, there is a great demand for herbs, drugs and vegetative products in market. This demand does not meet the achievement of market, cause due to lack of supply, rareness, controversial drugs, traditional method of collecting drugs from nearby forest, lack of knowledge of cultivation of medicinal drugs and less interest taken by the government for motivation of such herbal cultivation projects.

Who are doing so for organic cultivation of medicinal plants?: Nagarjuna Social Service Society (NSSS) carries out the promotional activities related to Medicinal Plants begun by NRF, by preserving a big herbal garden as well as herbal nursery and is growing huge numbers of medicinal plant saplings in order to distribute to the common public at nominal prices. Varied efforts are being taken to make the cultivation of medicinal plants profitable.^[1]

Objectives of Organic cultivation of Medicinal Drugs

1. Steps to save endangered plant species
2. To promote in situ and ex situ conservation of medicinal plant diversity, including rare species.
3. Conservation of rare medicinal plants, those are under the threat of extinction.
4. Increasing the availability of the medicinal plants utilized in *Ayurvedic* and other sectors through scientific propagation and defined cultivation methods.
5. Creating awareness, on the importance of medicinal plants within the society.

Methods of organic cultivation

Organic farming is a form of agriculture that relies on techniques such as- Crop rotation, green manure, compost, and biological pest control. Following are the steps involve in organic cultivation, these steps can be followed in medicinal plants cultivation.

A] To keep and build good soil structure and fertility

1. recycled and composted crop wastes and animal manures
2. the right soil cultivation at the right time
3. crop rotation
4. green manures and legumes
5. mulching on the soil surface

B] To control pests, diseases and weeds

1. careful planning and crop choice
2. the use of resistant crops
3. good cultivation practice
4. crop rotation
5. encouraging useful predators that eat pests
6. increasing genetic diversity
7. using natural pesticides

C] Organic farming also involves

1. careful use of water resources
2. good animal husbandry

DISCUSSION

The key characteristics of organic farming of medicinal herbs include.

- Protecting the long term fertility of soils by maintaining organic matter levels, encouraging soil biological activity, and careful mechanical intervention
- Careful attention to the impact of the farming system on the wider environment and the conservation of wildlife and natural habitats
- Increases the quality of herbs
- Easy to follow the guidelines given in classical texts of *Ayurveda* for plantation collection and process of medicinal plants.
- Availability of rare and controversial drugs will be increased.
- Enhances treatment due to potent drugs

CONCLUSION

Cultivation of medicinal plants generates employment and income. These need encouragement at the right place. In case of marketing of the economic product like medicinal plants, organized marketing facilities are to be provided. The agronomy of these crops is not well known among the farmers, this needs urgent attention. Agro-processing of medicinal plants is to be perfected and popularized among the needy. This would help in enhancing employment and income of the rural people. Work on balanced use of plant nutrients in improving yield and quality of medicinal plants is lacking. Therefore, this kind of work needs urgent attention. Availability of rural credit at right place by right method can create miracles. The wealth creation through higher production and profit has to be encouraged by the cultivation of economically attractive crops like medicinal plants.

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