

SEED SCIENCE & TECHNOLOGY



A photograph of a woman wearing a white headscarf and a patterned top, bending over to harvest tall, golden-brown grass in a field. The background shows more vegetation and a clear sky.

Reclamation and utilization of the arid land for medicinal herbs and spices as crops: the way forward on seed technology interventions for poverty alleviation

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Agricultural Research

Solving Problems for the Growing World

IMPORTANCE OF SEEDS

- Undoubtedly one of nature's most magnificent inventions.
- Without seed our agriculture would be vastly different.
- In fact, our survival depends upon seed?
- In short, Seed is nature's method of replenishing the earth's surface with vegetative growth.

**Saving
Seeds
for Our
Future,
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Pakistan is a developing country

- 70 % of its population lives in rural areas
- Allopathic system of medicine are limited/expensive
- Homeopathic system of medicine as house hold remedies against several diseases
- Scientific research and extension services to provide guide line for the sustainable cultivation and conservation

Agriculture today is faced with great challenges than ever before because of:

- **Changing technologies**
- **Environmental considerations.**
- **Government regulations and policies.**
- **Financial feasibility.**
- **All of these present new challenges to farmers and agricultural product suppliers.**





- Medicinal and spices plants have been used and traded since ancient times
- Traditional medicine and herbs for the maintenance of health in most developing countries
- Extraction and development of drugs in the industrialized countries
- Rural herbal remedies for minor ailments
- High cost of personal health maintenance

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- A close-up photograph of an Aloe vera plant growing in a dry, rocky, and sandy environment. The plant's thick, green, ribbed leaves are prominent, with some showing small brown spots. The background consists of light-colored, cracked soil and scattered small green weeds. The text is overlaid on the right side of the image.
- Around 2000 medicinal plants species are estimated to be existed how ever few of them are exploited in the north western region of Pakistan
 - Knowledge and information only confined to the tribal societies
 - Medicinal herbs are important local cures for the rural population
 - About 50000 traditional herbal practitioners are involved in herbal medicinal business
 - Some species are over exploited and others are under exploited which is a problem in the plant management

MISSING OPPORTUNITIES

- Minimum investment in research for potential new species
- The cultivation and conservation of medicinal herbs are neglected
- The attractive prices of herbs both nationally and internationally demands for herbs farming
- Contribution to the foreign exchange reserves depend on development and commercialization of medicinal based industries



We deemed to look at :

- The regulation and policies governing the conservation and exploitation of the medicinal herbs
- Research needs for sustainable cultivation and quality control
- The value of the medicinal market
- Analytical approaches in assessing the current and potential of medicinal herbs

Note: Our aim is to promote and contribute to the knowledge on the cultivation and exchange between interested collaborators



How to proceed further:

- Development of cropping technology for higher medicinal value crops
- Environment friendly activities
- Efficient cultivation practices
- Economic yields
- High quality products
- Seed technology and business enterprises management.



The key points of establishing medicinal plant based bio-industry

- Transformation from extensive to intensive large scale production
- From self-sufficient management to international market competition
- From mutually separated practice of scientific researches and production to an integrated management of seed breeding.
- Multiplication and marketing be integrated and the seed in the field to be commercialized.



- Taking the elite seed processing as a break through in order to upgrade the seed supply level.
- Reforms in order to establish a seed managerial system adopted to the market economy
- Strengthening the exchange and cooperation among provinces and regional countries.



- **Pay attention to the work of introduction and upgrade the level as a whole**
- **Utilize the advantages fully and broaden the cooperative fields.**
- **improved reliability of yield and raw materials of uniform and standard qualities**
- **Documentation of local health traditions**

Note: Activities will increase income as well as ensure the sustained supply of quality raw material to the drug industry

The impact of seed quality on medicinal crop development:

- Variety identification (genetic purity).
- Freedom from weeds and other crop contaminants (physical purity).
- Freedom from diseases (pathological quality).
- Seed germination and vigor (physiological quality).



Recommendations

- Targeted contribution to develop medicinal production rapidly.
- Seed research and management as a system
- Ultimate achievements in genetics and breeding
- The construction of basic facilities in shape of cooperatives and corporations.
- The seed managerial systems have to be perfected day by day.

THANKS FOR YOUR PATIENCE