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Health and Nutraceutical Products Developed at NIFA

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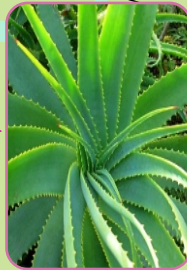
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Health and Nutraceutical Products Developed at NIFA



Aloe vera grown at NIFA



Aloe vera plant



Aloe vera leaf



Aloe vera gel



NIFA Aloe Juice

Aloe vera plant contains over 75 nutrients and 200 active compounds including 20 minerals, 18 amino acids and 12 vitamins. - All of which have been shown to be vital for a good health. The *Aloe vera* juice is a health blessing and a rejuvenating tonic.

Introduction

Though modern medicines have proved their worth in treatment of many diseases, however they have some limitations in curing the chronic and degenerative diseases such as heart ailments, immune disorders, cancers, arthritis, and AIDS etc. The patients are hesitant also to use these medicines because of the fear of number of side effects and for being beyond the reach of low income groups. Hence health authorities all over the world, are looking for alternatives and preventive approaches for the well being of humanity. For this reason, alternative medicines can now freely be seen available even in advanced countries as over-the-counter pharmaceuticals, dietary supplements, vitamins, minerals, and herbs.

The preference for natural and healthy diets is also growing globally in individuals due to increased public awareness about preventive approaches, especially for their ability to strengthen the immunity against many diseases. This public inclination is progressively leading the scientific communities to look for biologically active compounds from herbal plants. Therefore, the future of the herbal and nutraceutical industries is very bright and world markets today are eagerly prepared to accept health products of plant origin. Recognizing the efficacious role of herbal plants, WHO has declared traditional medicine as one of the efficient means to achieve the total health care coverage of the world's population. WHO has also developed comprehensive technical guidelines for the assessment of herbal medicine and fully supported the rational use of traditional plants for medicinal purposes.

Pakistan is gifted with a rich source of wild plants (around 6,000 species) most of which are believed to have medicinal value. Nearly 80% of these plants are found in NWFP and AJK. Currently only 400 to 600 plant types are being used in herbal medicines in the country. Unfortunately, not much information is available on the market potential and trading possibilities of most of the herbal plants. The valuable medicinal herbs are either wasted or used as fuel and fodder. No finished or intermediary pharmaceutical and nutraceutical products are made, while export of medicinal herbs is conducted at very low prices in the raw form and without any value addition. The real potential of medicinal plants has not been fully exploited by the governments or entrepreneurs.

The social and economic benefits for the country can be enhanced many folds, if these materials are commercially utilized for product development and value addition.

Keeping in view the natural abundance, industrial applications and trading possibilities of medicinal plants, we here at NIFA have started R&D to explore the value addition potential of these precious renewable plant materials. In this connection, a number of health, nutraceutical and consumer products have been formulated. Consumers acceptability trials indicated strong liking for these products due to their wholesomeness and efficacy. Maintenance of quality right from harvesting, collection, transportation, storage and processing of raw herbal materials up to finished product development is extremely essential to obtain the desired health benefits. Regrettably, harvesting and collection of these plants are mostly carried out raw handedly by unskilled labours, resulting in high microbial loads and pathogenic contamination. If untreated, these contaminated raw materials can cause the spoilage of the finished products and may pose serious safety and health concerns to the consumers. Addressing this issue, NIFA has optimized gamma radiations based sterilization technique to eliminate pathogens and overcome bio-burdens, thus fully assuring safety and quality of the raw materials as well as finished products. Thus NIFA phytoproducts are manufactured in full compliance of SPS standards and protocols. Sensoric evaluation and quality assurance are also carried out according to recommended international standards.

Commercial scale availability and utilization of the plant based products may contribute towards the general well being of Pakistani population from both health and nutrition point of view. Further, industrial application of these plant materials, will boost incentives for their cultivation on sustainable basis entailing in economical uplift of the growing communities and other stakeholders. NIFA can effectively play its role as a model setup in initiating such type of nation building activities for potential entrepreneurs of herbal medicines.

NIFA has the potential to develop and provide technical demonstration for the feasibility of the following product groups:

- Dried and fresh herbs
- Herbal teas
- Essential oils
- Capsules
- Liquid extracts and tinctures
- Herbal drinks
- Nutraceuticals
- Cosmetics

Why to prefer our products

Because

i) They are based on:

- Latest scientific investigation and traditional herbal knowledge
- Formulations that incorporate biologically active ingredients with proven medicinal and nutritional values
- Quality raw material that are natural, mostly organically grown and used in decontaminated forms
- Manufacturing process that complies with SPS standards and protocols
- Processing methods that are carried out according to international quality assurance principles, followed by sensoric evaluation and acceptability trails

ii) The finished products are:

- Wholesome and having synergistic effects
 - Well suited for human body conditions
 - Free from synthetic chemicals and pathogenic/spoilage microorganisms
 - Environment friendly
 - With no or less side effects
- Economically in reach of low income groups

Spray dried products



Egg powder



Garlic powder



Milk powder



Ginger powder



NIFA Immune Booster is a synergistic formulation of Klonji, Zaitoon, Sonf, Reyand, Chini Gulab etc.

It is rich in cancer-fighting carotenoids, antioxidants, flavonoids, essential fatty acids, minerals, detoxifying ingredients and antimicrobial compounds.

How does it work?

- Provide healthy nutrients
- Detoxify liver and kidney toxins
- Scavenge free radicals
- Provide natural disease fighting constituents
- Supply other active phytochemicals

All these lead to the strengthening of human immune system



NIFA Lemolive Tea

A herbal tea for nerve relaxation with numerous other health benefits.

Specifically good for cardiovascular and diabetic patients

NIFA Health Tea



It has light, sweet and delicate taste. Very popular for its soothing, therapeutic and relaxing effects.

It can:

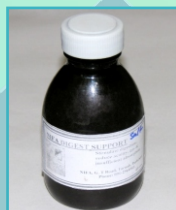
- Enhance blood circulation
- Boost human energy
- Strengthen immunity
- Ease the cold and flue symptoms
- Calm the nerves



Promotes physical and mental growth of kids by providing vitamins, minerals, amino acids, glycoproteins, triglycerides and carbohydrates etc.

Formulation ingredients include: apple, fig, mulberry & other tonic herbs

NIFA Kid Tonic



NIFA Digest Support

Formulated as an effective remedy for:

- Insufficient absorption
- Indigestion
- Bloating and feeling of fullness
- Gas problems
- Mild constipation
- Over eating

NIFA Eyewash



It is very effective, gentle and easy to use.

Formulated to clean, refresh and sooth eyes

NIFA Aloe Mouthwash



- Provides a natural soothing and cleansing action along with promoting the fresh Breath.
- Best for keeping the gums healthy and strong

Alcohol- and saccharin- free

NIFA Aloe Juice



**A
wonderful
dietary
supplement**



Aloe vera

- An amazing plant used in cosmetics since times immemorial
- It is also one of the leading ingredients in a number of nutraceutical and medicinal products.
- Enormously rich in minerals like Ca, Na, Fe, K, Mg, Mn, Cu, Zn and Cr etc.
- Good source of vitamins (A, B1, B2, B6, B12, C and E, folic acid and niacin etc.)
- Provides all essential amino acids to human body
- Rapidly pacifies the skin problems
- Aids in healthy digestion
- Supports immune system and body functions
- Regulates weight and energy levels
- Repairs and maintain collagen and elastin
- Have 12 compounds exhibiting anti-inflammatory properties
- Excellent for dental health and hygiene



NIFA dermacare

- An ideal natural skin care for whole family
- Contains **Aloe vera** and other skin friendly herbal ingredients
- Useful for radiation workers to shield against the hazardous effects of rays
- Its regular use can keep skin healthy and fresh

Glimpses of R&D activities on medicinal plants at NIFA



Raw materials



Gamma sterilization



Spray drying



Processing



GC analysis



Microbiological assessment



Quality assurance



Labeling



Briefing about HPLC applications



Product acceptability trials at NIFA



Chairman PAEC along with Member Bioscience on a visit to Phytochemistry Lab.

Services available at NIFA

Consultancy

- Establishment of small and medium size entrepreneurship for herbal products manufacturing
- Selection and cultivation of precious medicinal plants at community level for conservation, sustainable development and income generation activities
- Formulation of health and consumer products
- Formulation of dietary supplements, functional foods and nutraceuticals
- Application of appropriate technologies to meet the international standards for SPS agreements and quarantine requirements

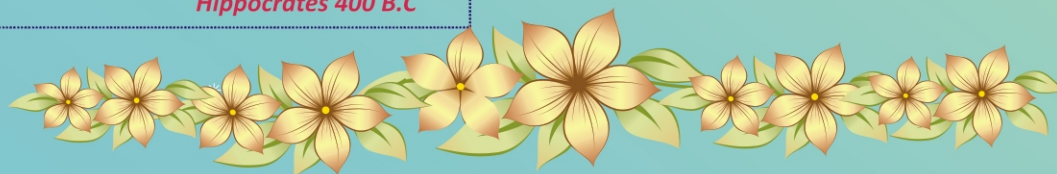
Facilities

- Sterilization by using gamma irradiation technology
- Physicochemical , phytochemical and proximate analysis
- HPLC and GC analysis of the active ingredients
- Spray drying
- Student internships
- Trainings
- Seminars
- Exhibitions



Let food be your medicine and medicine be your food.

Hippocrates 400 B.C



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