A review on importance of Panchagavya in Vrikshayurveda

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Introduction

- *Ayurveda* is based on principles of nature and *Vrikshayurveda* is based on principles of *Ayurveda* and nature.
Vrikshayurveda

- Is an ancient treasure of knowledge in India which deals with every aspect related to the life of plants. The Sanskrit term 'Vrikshayurveda' means "The Science of Plant Life". Divided into twelve chapters, dealing with the natural resources in Agriculture that balances between plants, animals and humans.
At a glance

- It was written by *Surapala*, a royal physician in the court of king *Bhimapala between 6th to 12th century A.D.1* and was awarded with a title "*Vaidyavidyavarenyna*", for his multifaceted talent.

- Though a vast literature is available in a scattered form, *Surapala’s Vrikshayurveda* can be considered as a comprehensive compendium on plant-life and provides the knowledge of physiology, pathology, horticulture and treatment of the plants.
Vrikshayurveda & Plant

- The manuscript written in a form of Sanskrit since extinct runs into 60 pages containing 325 well-knit verses, describing characteristics of about 170 plants.

- Surapala’s work puts forth authoritative opinions on several issues concerning plant life such as procuring, preserving, treating of seeds before planting; preparing pits for planting saplings; selection of soil; method of watering; nourishments and fertilizers; plant diseases and plant protection from internal and external diseases, remedies there to; layout of a garden; agricultural and horticultural wonders; groundwater resources; etc.

- It is a comprehensive and a systematic compendium on all issues of plant life and environment.
Vrikshayurveda & Plant

- Chemical fertilizers and pesticides are the most accepted parameters in present days to increase quality and quantity of plants, affecting health hazardous issues. To this organic farming is the recent trends followed by scientists and farmers to get crop in its pure forms.

- *Vrikshayurveda* is the oldest and ancient techniques that deals with all aspects of plants and to increase its potency naturally where *Panchgavya* plays the major role.
Panchagavya

- *Pancha* means five and *gavya* means substance obtained from Cow. That is the mixture of 5 products of cow such as Milk, Curd, Cow dung, Cow’s Urine and Ghee (Clarified Butter) in a proper ratio that allows it to ferment and the end product is known as *Panchagavya*. 
Properties of *Panchagavya*

- pH 6.02
- Calcium - 1000 ppm
- Phosphorous - 4310 ppm
- Nitrogen - 6650 ppm
- Sodium 4310 ppm
- IAA : 8.5 ppm
- GA : 3.5 ppm

http://www.greenmylife.in/panchagavya/
Importance

- *Panchagavya* is known to contain millions of microbes and adds life to soil thus considered to be effective organic manure.
- It is flower inducer and provides rich and attractive colors to crops, above all its proper use can increase production and reintroduce/increase beneficial bacteria into the most important part of 'The Soil'.

Impact of Panchagavya in Plant Parts

- The effect of Panchagaya on different plant parts are as follows:
- **Leaves:** Plants sprayed with Panchagavya produce bigger leaves; it also enhances the photosynthesis process.
- **Stem:** It improves branching, and helps in producing more off shoots, which are sturdier.
- **Roots:** Roots grow deeper, increasing the intake of nutrients and water. They also become denser and remain fresh for a longer time.
- **Yield:** It has been usually observed that when farms are converted from inorganic to organic, their yield reduces; Panchagavya ensures that the yield is restored after the conversion.
- *Panchagavya* also enhances the shelf life, aroma and taste of the produce.
- **Reduction in water consumption:** Panchagavya causes a thin layer of oil to form on the leaves and stems. This reduces water loss due to evaporation during the day. Also as Panchagavya cause the roots to grow longer, plants can withstand longer periods of dry. This way water consumption of the plant reduces by 30%.
Preparation/Formulation

- With combination of nine products viz. cow dung, cow urine, milk, curd, jaggery, ghee, banana, tender coconut, and water, following is the method used to prepare formulation.

- The cow dung and ghee are thoroughly mixed in the morning and evening, and kept for 3 days. After setting, it is mixed regularly for another 15 days, and then added to the other ingredients, and left as such for another 30 days. Finally it is stored in a wide-mouthed earthen pot or concrete tank in open. Sufficient shade is usually provided. It is sometimes diluted before use.
Usage

- As fertilizer and pesticide.
- As plant growth regulator, promotor and immunity enhancer.
- Cow urine, is practiced in Ayurveda, curing several diseases, including certain types of cancer.
- In animals it stimulates the production of antibodies hence building the immune system.
- In humans, it has been reported to increase appetite, heal wounds and cure diseases like Psoriasis and white patches.
- It is sometimes used as a base in cosmetic products.

http://www.greenmylife.in/panchagavya/
Beneficial effects of Panchagavya on commercial crops

- **Mango**
  - Induces dense flowering with more female flowers
  - Continues fruit regularly
  - Flavour and aroma are extraordinary

- **Acid lime**
  - Continuous flowering is ensured round the year
  - Fruits are plumpy with strong aroma
  - Shelf life is extended by 10 days
Beneficial effects of Panchagavya on commercial crops

- **Turmeric**
- Enhances the yield by 22%
- Extra long fingers
- Helps survival of dragon fly, spider etc which in turn reduce pest and disease load
- Enriches the curcumin content
Beneficial effects of Panchagavya on commercial crops

- Vegetables
- Yield enhancement by 18% and in few cases like Cucumber, the yield is doubled
- Wholesome vegetables with shiny and appealing skin
- Extended shelf life
- Very tasty with strong flavour
National acceptance

- Mentioned in purification of many herbal drugs (such as ‘Kupilu, Gunja etc), metals and minerals in the process of medicine preparation. Certain medicines are even being fortified with Gomutra too.

- Number of institutes/ pharmaceutical units manufacturing Ayurvedic Medicines including Panchagavya is maintained by the State Governments. The quality standards of Panchagavya Ghrita has been published in Ayurvedic Pharmacopoeia of India, Part-II, Vol.I by Department of AYUSH.

- A study titled ‘Evaluation of the immunomodulatory activity and safety/toxicity of Panchagavya Ghrita’ has been conducted by Central Council for Research in Ayurvedic Sciences CCRAS, AYUSH observed is safe, non-toxic and an effective immuno-stimulant.

http://pib.nic.in/newsite/erelease.aspx?relid=87162
Council of Scientific and Industrial Research (CSIR) has conducted some basic research on cow urine and registered following patents:

**Use of Cow Urine Distillate (Go-Mutra) as Bioenhancer of Anti-Infective and Anti-Cancer Agents.**

**Pharmaceutical Composition containing cow urine Distillate as an Anitoxidant**

The above information was given by the Union Minister for Health & Family Welfare Shri Ghulam Nabi Azad in a written reply in the Lok Sabha.
Conclusion

A paradigm shift has been observed globally from allopathic system to Ayurved in last decade so as in Good Agricultural Practices as they are changing gradually from synthetic fertilizers and manures to organic pharmacy using ‘Panchagavya Products’.