AgriCos e-Newsletter
ISSN: 2582-7049
www.agricosemagazine.com
Volume: 01 Issue: 02 June 2020 Article No: 48

Panchgavya: Organic Fertilizer and Crop Protectant

Dilip Kumar Chaurasiya[1*], Siddharth Singh[2] and Mohit Kumar[1]
[1]Ph.D. Research Scholar, Plant Pathology, College of Post Graduate, RPCAU, Pusa, Bihar
[2]Ph.D. Research Scholar, Department of Plant Pathology, BCKV, Mohanpur, West Bengal
Corresponding Author*: dilipkchaurasiya39@gmail.com

SUMMARY

Panchagavya or panchakavyam is prepared by five products of cow in which cow dung, urine, and milk are three direct constituents and curd and ghee are the two derived products. These are mixed in appropriate ratio and then permitted to ferment. Additionally the mixture contains yeast as a fermenter, bananas, and therefore the water of tender coconut, which are an organic products having the potential to play the significant role in plant growth promotion and providing immunity in plant system.This also been founded useful in rhizome of turmeric, ginger and sugarcane and they yielded more. Panchagavya can also be used to soak the seeds or dip the seedlings before planting into field. It helps to reduce the evaporation of water.

INTRODUCTION

The Sanskrit word *Panchagavya* means "mixture of five cow products". Panchgavya is also used as fertilizers and pesticides in agricultural operations. “Panchagavya is an organic product having the potential to play the role of promoting growth and providing immunity in plant system’’. It consists of products viz. cow dung, cow urine, milk, curd, jaggery, ghee, ripe banana, tender coconut and water. When appropriately mixed and used, these have astounding effects. Panchagavya enhance organic contains in soil and moreover having the efficacy to restore the yield level of all crops.

Scientific Evidence:

Scientific studies have been performed to test the efficacy of Panchagavya and cow dung as a medical intervention which are pointed below:-

- A common usage as a fertilizer and pesticide.
- Can be used to treat seeds before sowing.
- This was found useful in increasing the yield sugarcane as well as rhizome yield of turmeric, ginger.
- Also help in plant growth promotion and its immunity.

How to prepare Panchgavya

Table.1: Ingredients (for 30 liters solution)

S.N.	Ingredients	Quantity
1.	Cow dung	7 Kg
2.	Cow urine	3 L
3.	Ghee	1 Kg
4.	Cow milk	2 L
5.	Yogurt	200 g
6.	Water	10 L
7.	Sugarcane juice or jaggery solution	3 L / 500g jaggery / 3 L water
8.	Coconut water	3 L

(Note: Care should be taken during the preparation and do not to mix buffalo products.
The products of local breeds of cow is said to have more potency than exotic breeds.)

Steps of Preparation

1.Initially make a mixture of fresh cow dung (7 kg) and ghee (1 kg) and keep it in a shady place for 2-3 days.
2.After 3 days again, add cow urine (3 L) and water (10 L) into previously prepared mixture.
3.Stir this mixture with the help of wood stick in the morning and evening hours for 7 days and cover the mixture with a clean cloth.
4.After that mix sugarcane juice (3 L) or jaggery (500 gm per 3 L of water) and mix it well. Simultaneously, add cow's milk (2 L) and curd (200 g/2 L water) and 1 dozen of mashed ripe bananas with clean hands.
5.Now mix 3 liter of coconut water in the obtained mixture and keep it in a shady place for 3 weeks and observe the mixture daily and mix it with any wood stick twice a day (morning and evening).
6.This mixture can be used up to 6 months before its preparation date.

Recommend Dosage

- Spray system: 3% solution of pachgavya is most effective compared to the higher and lower concentrations.
- Flow system: The solution of Panchagavya can be mixed with irrigation water at 50 L per hectare either through drip irrigation or flow irrigation.
- Seed/seedling treatment: 3% solution of Panchagavya can be used to soak the seeds or dip the seedlings before planting. Soaking for 20 minutes is sufficient. Rhizomes of turmeric, ginger and sets of sugarcane can be soaked for 30 minutes before planting.
- Seed storage: 3% of Panchagavya solution can be used to dip the seeds before drying and storing them.

Table. 2: Application time of Panchgavya for Various Crops

Crop	Time of Application
Rice	10,15,30 and 50th day of transplanting
Sunflower	30,45 and 60 days after sowing
Black gram (rainfed):	After the first flowering and 15 days after the second flowering
Black gram (Irrigated):	15, 25 and 40 days after sowing
Green gram Seed treatment with 1% for 12	15, 25, 30, 40 and 50 days after sowing
Peanuts	25 and 30 days after sowing
Okra	30, 45, 60 and 75 days after sowing
Tomato	Seed treatment with 1% for 12 hours: nursery and 40 days after transplanting
Onion	0, 45 and 60 days after planting
Rose	At the time of pruning and budding

Beneficial Effect of Panchagavya on Different Plant Parts

Leaf

Plants reliably produce bigger leaves and grow thicker canopy if being treated with Panchagavya. It helps through enhance the biological efficiency of plants by activating the photosynthetic system, enabling the synthesis of more metabolites and photosynthates.

Stem

Stem produces lateral shoots, which are firm and capable of carrying more fruits till the maturity. They produce more branching relatively.

Roots

The rooting is abundant and dense. Additionally, they will remain fresh for a longer time. The roots spread and grow into deeper; such roots help maximum absorption of mineral nutrients and water.

Yield

The dynamic feature of Panchagavya is its efficacy to reinstate the yield level of all crops when the land is converted from inorganic cultural system to organic culture from the very first year. The harvest is advanced by 15 days in all the crops. It not only augments the shelf life of vegetables, fruits and grains but also improves the taste.

An active Pest Repellant

It also acts as an effective repellent. Use of it is highly effective against the fruit fly menace in mango trees.

Beneficial Effects of Panchagavya on Commercial Crops

Mango

- Induces dense flowering with more female flowers.
- It helps in reducing irregular or alternate bearing habit and continues to fruit regularly.
- Enhances keeping quality up to 12 days in room temperature.

Turmeric

- Treated rhizoms can produce extra-long fingers
- Reduces drainage loss
- Helps survival of dragon fly, spider etc which in turn reduce pest and disease load
- Produce can sell at premium price as mother/seed rhizome
- Enriches the curcumin content in turmeric

Banana

- Additionally mix with irrigation water and spraying, 3% solution was tied up at the naval end of the bunch after the male bud is removed
- The bunch size becomes uniform.

Vegetables

- Yield enhancement witnessed and in few cases like Cucumber, the yield is doubled
- Wholesome vegetables with shiny and appealing skin
- Extended shelf life

CONCLUSION

As the concern of environmental safety and incline of peoples towards the pesticide residue free food has tend to grow crops using eco-friendly products. Application of panchgavya can also play vital role in organic crop production as it enhances the biological efficiency of plants and stimulates their growth through the actions of microorganisms and micro nutrients contained in it. Therefore, enlightening people about the beneficial properties of panchagavya can offer the solution to problems of shortage of food grains, nutrition and soil health etc. Although, for specific agro-ecological and farming systems advanced research and recognizing optimum combinations is needed.

REFERENCES

Dhama, K., Rathore, R., Chauhan, R.S., and Tomar, S., (2005) Panchgavya: An Overview. International Journal of Cow Sciences: 1:1-15.

Sinha, K., (2014) Panchagavya: Low Cost Organic Input for Agricultural and Horticultural Crops. Popular Kheti: 2(4): 47-49