Jeevamrut

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Abstract-
Jeevamrit, a microbial culture, prepared especially from dung and urine of Indian cow is generally advocated for use in organic farming to meet the nutritional requirement of crops. Laboratory studies and field experiments were conducted to know the microbial composition and nutrient content of jeevamrit and its effect on the performance of rice (Oryza sativa L.)–wheat {Triticum aestivum (L.) emend. Fiori & Paol} and maize (Zea mays L.)– wheat cropping systems. The pH of jeevamrit prepared from buffalo, Indian cow and hybrid cow decreased from 8.32, 7.89 and 7.71 at the start to 3.86, 3.65 and 3.56, respectively after 5 days of incubation. The microbial count increased from its initial values in all the cultures. The bacterial count of jeevamrit prepared from Indian cow's dung and urine was highest followed by hybrid cow and buffalo, whereas the fungal count was highest in jeevamrit prepared from hybrid cow's dung and urine followed by Indian cow and buffalo. Jeevamrit prepared from Indian cow and hybrid cow's dung and urine did not differ much in the microbial count (bacteria and fungi). The nutrient contents were 0.22, 0.04 and 0.60 g nitrogen, 0.11, 0.04 and 0.06 g phosphorus, 1.09, 0.28 and 0.75 g potassium and 0.46, 0.43 and 0.39 g sulphur in each litre of jeevamrit prepared from buffalo, Indian cow and hybrid cow's dung and urine, respectively; showing relatively higher contents of these nutrients in case of buffalo. The carbon content was more in jeevamrit prepared from dung and urine of Indian cow followed by buffalo and hybrid cow. The field application of jeevamrit over two years (2009–10 and 2010–11) neither alone nor in combination with chemical fertilizers or farmyard manure influenced the grain yield of rice, maize and wheat in rice–wheat and maize–wheat cropping systems indicating its inability to supply nutrients to the crops in needed quantities either directly or indirectly through mobilization of native nutrients from the soil.

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INTRODUCTION

Jeevamrit, a microbial culture prepared from the dung and urine of Indian cows, has been widely advocated for use in organic farming to enhance crop nutrition. Its application is believed to meet the nutritional requirements of crops effectively. This microbial culture has been studied extensively in laboratory settings and field experiments to understand its microbial composition, nutrient content, and its impact on crop performance, particularly in rice-wheat and maize-wheat cropping systems. Research has shown that jeevamrit exhibits a significant decrease in pH and an increase in microbial count during the incubation period. Moreover, the nutrient content of jeevamrit varies depending on the source of dung and urine, with buffalo dung showing relatively higher nutrient content compared to Indian cow and hybrid cow dung. Despite these promising characteristics, field applications of jeevamrit, either alone or in combination with chemical fertilizers or farmyard manure, have not shown a significant influence on the grain yield of rice, maize, and wheat over two years, indicating its limited ability to supply nutrients to crops in the required quantities.

Although jeevamrit is rich in microbial activity and contains essential nutrients, its field application did not result in a significant increase in crop yield over the two-year study period. Despite the increase in microbial count and nutrient content during the incubation period, this did not translate into improved crop performance. The inability of jeevamrit to

enhance crop yield suggests that it may not be effectively supplying nutrients to the crops either directly or indirectly through the mobilization of native nutrients from the soil. This highlights the need for further research to understand the limitations of jeevamrit and to develop more effective organic farming practices that can truly enhance crop nutrition and yield.

LITURATURE SURVEY

1. Review on the Effect of Organic fertilizers, Biofertilizers and Inorganic Fertilizers (NPK) on Growth and Flower Yield of Marigold (Targets' erecta L.) African marigold is one of the medical plants which was native to South America especially Mexico and belongs to the family Asteraceae (Compositae). Like other crops the flowering plant also has different response to different rate organic manures and inorganic fertilizers as well as bio fertilizers, N12 P80 K40/ha has an effect on early flowering of marigold and the flowering stem height was affected significantly by the application of NPK fertilization, poultry manure give better yield as compared to other organic manures. Physiological parameters of marigold were greatly increased by the use of NPK fertilizer and bacterial inoculation (Table 1 and 2). Application of bio-fertilizer significantly improved quality and quantity features in marigold, both NPK and bio fertilizers have a significant effect on morphological traits and effect NPK on P & K traits of marigold (Table 3 and 4), the yield and economics of marigold as influenced by various treatments of treatments of organic fertilizers(Table 5). Azotobacter is the free living nitrogen fixing bacteria which fix the nitrogen equivalent to 30-40 kg ha-1. Organic manure has a role in improving the soil chemical as well as physical properties of soil. The role of bio-fertilizers containing symbiotic or non-symbiotic nitrogen-fixing bacteria in augmenting vegetative growth characters, yield and yield components, essential oil productivity and/or chemical composition (including chlorophyll a, b and carotenoids and/or N, P and K leaf percent and content.

2. Effect of Biofertilizers for soil microbial activity Using biofertilizer and selection of the best microbial strains have vital role when integrating human society with vulnerable ecosystems. Biological fertilizers, which are called biofertilizers, may be used in a way of to maintain soil fertility and soil improvement. Biofertilizers are products containing living cells of different types of microorganisms, which have an ability to convert nutrionally important elements (N, P,….) form unavailable to available from through biological process such as Nitrogen fixation an solubilization of rock phosphate. One possible way of achieving biofertilizers is to decrease dependence on use of chemical Nitrogen fertilizers by harvesting the atmospheric nitrogen through biological processes. The use of growth promoting bacteria, like a symbiotic nitrogen (N2) fixing bacteria, is known as bio-fertilizers and has recently gained importance in crop production. It is well known that these bacterial species, mostly those associated with the plant rhizosphere, are able to extra beneficial effect upon plant growth. Therefore, their use as bio-fertilizers for agriculture improvement have been a focus of numerous studies recently (kizikay R .2003). Fertilization is the most important and controllable factor affecting the nutritional value of vegetables.

AIM & OBJECTIVES

1. To analyze the microbial composition of jeevamrit prepared from dung and urine of different cattle sources.
2. To determine the nutrient content of jeevamrit prepared from different cattle sources.
3. To investigate the effect of jeevamrit application on the performance of rice-wheat and maize-wheat cropping systems.
4. To assess the potential of jeevamrit to supply nutrients to crops either directly or indirectly through soil nutrient mobilization.
5. To evaluate the efficacy of jeevamrit in enhancing crop yield over two years of field application...

MOTIVATION

The motivation behind this study stems from the increasing interest in organic farming practices and the need to explore sustainable alternatives to chemical fertilizers. Jeevamrit, a microbial culture prepared from the dung and urine of Indian cows, has been widely promoted as an organic input to enhance soil fertility

and improve crop nutrition. However, there is a lack of comprehensive scientific data on its microbial composition, nutrient content, and its actual impact on crop performance. Therefore, this study aims to fill this gap by providing a detailed analysis of jeevamrit, its microbial composition, nutrient content, and its effectiveness in enhancing crop yield in rice-wheat and maize-wheat cropping systems. Understanding the efficacy of jeevamrit is crucial for farmers looking to adopt organic farming practices and for policymakers promoting sustainable agriculture.

APPLICATION:

1. Analyze the microbial composition and nutrient content of jeevamrit prepared from dung and urine of different cattle sources.
2. Investigate the effect of jeevamrit application on the performance of rice-wheat and maize-wheat cropping systems.
3. Assess the potential of jeevamrit to supply nutrients to crops either directly or indirectly through soil nutrient mobilization.
4. Evaluate the efficacy of jeevamrit in enhancing crop yield over two years of field application..

CONCLUSION

Jeevamrutham helps to maintain the soil health and fertility. It provides varieties of benefits to user like less cost, easily adoptable to poor farmers, increase the crop productivity, environmental safety, and successful crop production. Generally, only the fresh preparations of liquid organic formulations are used by the farmers as they do not have information about the shelf life of liquid organic formulations. We can store jeevamrutham for many days or for weeks too. Stored material also has their own advantages like increase in nitrogen, micronutrients, EC, etc. To get good yield, healthy quality of crop, we must have to adopt this organic fertilizer application.

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