

TOP 5 LIQUID BIOFERTILIZERS FOR PLANTS



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ABSTRACT

Liquid biofertilizer is increasingly available in the market as one of the alternatives to chemical fertilizer and pesticide. The present study deals with the effectiveness of growth of Mustard plant using liquid biofertilizers such as tea waste, carrot water, beetroot water and aloe vera water. The seedlings of mustard were transplanted in 5 pots with equal size. The seedlings of pot were treated with liquid biofertilizers. The morphological parameters such as increase in leaves, branches, shoot, root. To prevent the environment pollution from extensive application of chemical fertilizers the liquid biofertilizers could be recommended to farmers to insure the public health and a sustainable agriculture.

INTRODUCTION :

Biofertilizers technology is not a new concept . It involves inoculation of beneficial microorganisms help nutrient acquisition by plant through fixation of nitrogen, solubilization and mobilization of other nutrients. Multivarious advantages of bio fertilizers leads to its wide applicability in sustainable agriculture..

Liquid biofertilizers are special liquid formulation containing not only the desired beneficial microorganisms and their biological secretions , but also special cell protectants or substances that encourage the formulation of dormant spores or cysts for longer shelf life and tolerance to adverse conditions

LIQUID BIOFERTILIZERS:

Liquid biofertilizers are suspensions having agriculturally useful micro organisms ,which fix atmospheric nitrogen solubilize insoluble phosphates and make it available for the plant . Liquid biofertilizers is increasing available in the market as one of the alternatives to chemical fertilizers and pesticides ..



They supplement of chemical fertilizers for meeting the integrated nutrients demand for the crop. Liquid biofertilizers formulation

promising and updated technology which in spite of many advantages over the

left a considerable dispute among the farmer community in terms of several reasons major being the viability of the organisms..

MATERIALS REQUIRED:



TEA WASTE
BEETROOT
CARROT
ALEOVERA
RICE WATER
SOIL
POT
MUSTARD
SEEDS
WATER

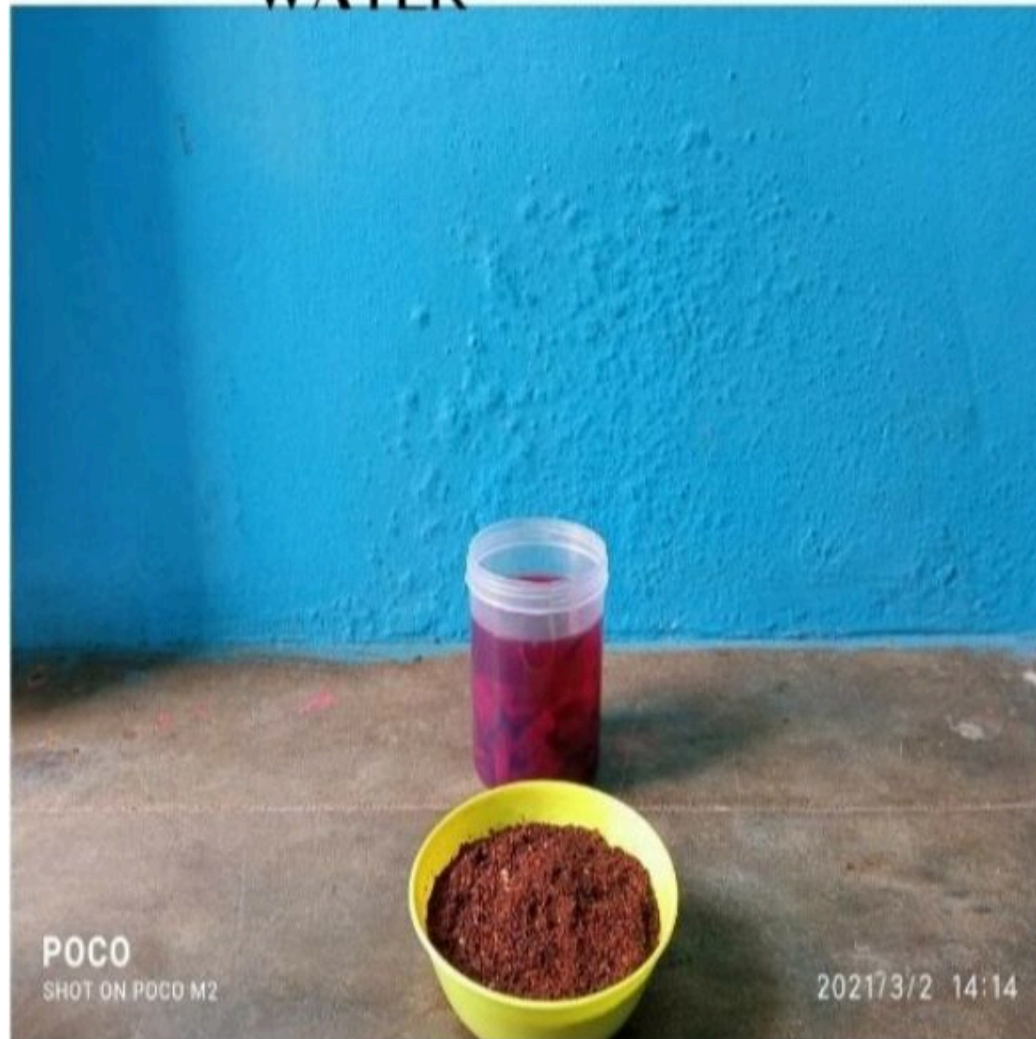
PROCESS: seed pot



I. tea waste –mustard

- Take a tea waste
- soak in water for 24days
- after 24 hrs,pour it in seed pot
- do not pour it in a single place
- pour the water weekly once

2.BEETROOT WATER



- Take one beetroot [cut into small pieces]
- soak in water for 24hrs
- after 24hrs , pour the beetroot water in seed po

3. CARROT WATER

- Take 3 carrot
- [cut into small pieces]
- soak in water for 24h
- after 24hrs,pour the carrot water in seed p



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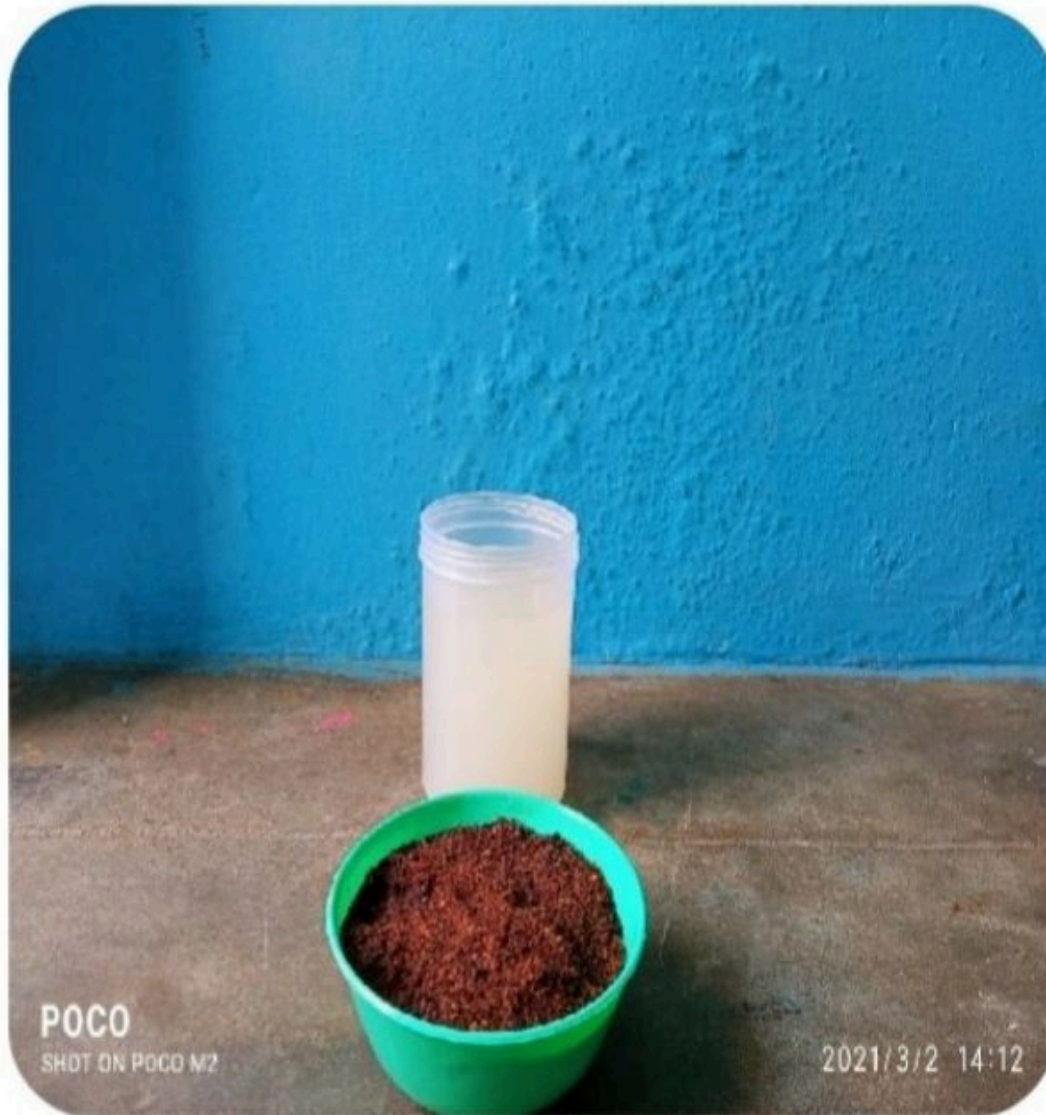
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4. RICE WATER

- Take a bowl of rice
- Soak in water for 24h
- After 24hrs, pour the r
- Water in mustard seed



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5.ALOEVERA WATER



- Take around 8-10 pieces of Aloe vera
- soak in water for 24hrs
- after 24hrs, pour the aloe water in seed pot



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BENEFITS OF LIQUID FERTILIZER

TEA WASTE

Tea leaves contain a high amount of tannic acid. When tannic acid is added to soil it lowers the soil's pH increasing acidity....Plants that like acidic soil: Ferns (excluding Maiden Hair fern) Rubber Plant. Spider Plant. Oxalis. Philodendron. Begonias (some varieties) African violets. Orchids (some varieties)

RICE LIQUID BIO FERTILIZER

Rice water is a mild fertiliser and consistent use could take the worry out of over fertilising. The starches from leftover rice water will help encourage beneficial soil bacteria, while the vitamins and minerals will add small amounts of NPK (nitrogen, phosphorus and potassium) to the soil.



CARROT LIQUID BIO FERTILIZER

Carrots should be fertilized when the tops have reached 3 inches tall. A granular type fertilizer will work well, if used in moderation. Choose a fertilizer that has little nitrogen and more potassium and phosphate 0-10-10 or 5-15-15 will work well.

BEET ROOT LIQUID BIO FERTILIZER

Beetroots grow best in fertile, well-drained soil. Prior to sowing, dig in a bucketful of well-rotted garden compost or other organic matter. Then rake in a handful per square yard of Growmore or other general-purpose fertiliser.

ALEO VERA LIQUID BIO FERTILIZER

Improves microbe multiplication in the soil and on the leaf. This can be further boosted when mixed with the Aloe Vera Fertilizer. Contains natural ingredients that promote cell replication (plant growth) with polysaccharides for high absorption of nutrients, Phytochemicals of Aloin, Salicylic Acid and Saponins.

CONCLUSION:

The liquid biofertilizers have great role in increasing the crop production. They improve the soil health Status and provide different growth promoting hormones And phytohormones to the plant . Also do not have residual effects like that of the chemical fertilizers . Hence the use of biofertilizer could be the proper option for sustainable Agriculture.

Result of fertilizer:

- Aleovera water:
- Using aleovera water in fenugreek seeds were germinated with in 5days
- It takes to long to grow.
- Carrot water Using carrot water in fenugreek seeds were germinated in 48hrs and grows with in 7days but plants are uneven

- Beetroot water Seeds germinated with in 48hrs and grows with in 1week.colourful green leaves are shown.
- Tea waste Seeds germinated with in 24hrs .Germination of seeds are very fast and easy to grow.Stems started elongated too fast.

- Grows in 5days Seeds
 - Rice water germinated with in 24hrs .Germination of seeds are very fast and easy to grow.Stems started elongated too fast.Grows in 5days
 - But plants are uneven
-

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