TM 1890 – ALEKSANDROW BROTH

INTENDED USE

For isolation and detection of potassium solubilizing bacteria from soil sample.

PRODUCT SUMMARY AND EXPLANATION

Soil potassium supplementation relies heavily on the use of chemical fertilizer, which has a considerable negative impact on the environment. Potassium-solubilizing bacteria convert insoluble potassium in the soil into a form that plants can access. A wide range of bacteria namely *Pseudomonas*, *Burkholderia*, *Acidothiobacillus ferrooxidans*, *Bacillus mucilaginosus, Bacillus edaphicus, B.circulans* and *Paenibacillus* sp. has been reported to release potassium in accessible form from potassium bearing minerals in soils. Potassium-solubilizing bacteria have been reported to exert beneficial effects on growth of cotton, pepper and cucumber, sorghum, wheat and Sudan grass. Therefore, potassium solubilizing bacteria are extensively used as biofertilizers.

COMPOSITION

Ingredients	Gms / Ltr
Magnesium sulphate	0.500
Calcium carbonate	0.100
Potassium alumino silicate	2.000
Dextrose (Glucose)	5.000
Ferric chloride	0.005
Calcium phosphate	2.000

PRINCIPLE

Salts present in the medium support the growth of potassium solubililizing bacteria by providing the essential nutrients. The source of potassium salts is potassium alumino silicates.

INSTRUCTION FOR USE

- Dissolve 9.60 grams in 1000ml of purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
- Mix well and divide into sterile tubes.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Cream to light yellow coloured solutionl with white precipitate forms in tubes.
pH (at 25°C) : 7.2±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	Inoculum (CFU/ml)	Growth	Potassium solubilization	Incubation Temperature	Incubation Period
Potassium solubilizing isolate	50-100	Good-luxuriant	Positive reaction	35-37°C	24-48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 10-25°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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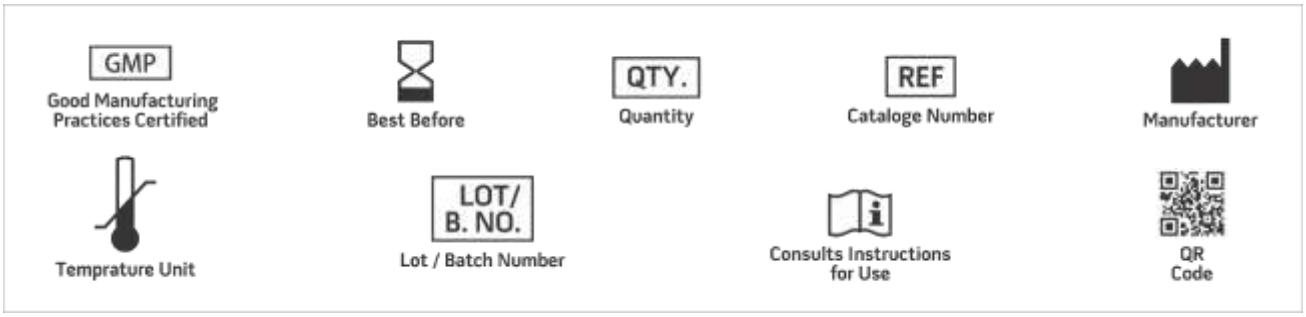
2. Basak, B.B. and Biswas, D.R., 2008, Influence of potassium solubilizing microorganism (Bacillus mucilaginous) and waste mica on potassium uptake dynamics by sudan grass(Sorghum vulgare Pers) grown under two Alfisols. Plant Soil, 317, 235-255.
3. Han, H.S., Supanjani and Lee, K.D., 2006, Effect of co-inoculation with phosphate and potassium solubilizing bacteria on mineral uptake and growth of pepper and cucumber. Plant Soil and Environment, 52, 130-136.
4.Sheng, X.F., 2005, Growth promotion and increased potassium uptake of cotton and rape by a potassium releasing strain of Bacillus edaphicus . Soil Biology and Biochemistry, 37, 1918-1922.
5. Sheng, X.F. and He, L.Y., 2006, Solubilization of potassium bearing minerals by a wild type strain of Bacillus edaphicus and its mutants and increased potassium uptake by wheat. Canadian Journal of Microbiology, 52, 66-72.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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