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# Center for Smart Agriculture

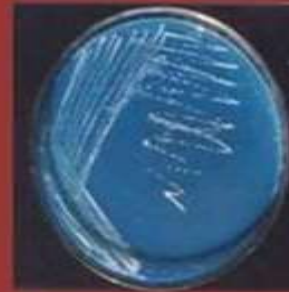
## Course: Organic Farming



*Rhizobium*



*Azotobacter*



*Azospirillum*



PSM



*Azolla*



*Cyanobacteria*



**Topic:** Roles of biofertilizers,  
seed treatment and use of biofertilizer



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# Bio - fertilizers application methods

There are three ways of using these N-fixing/P.S.M. bacteria.

**Seed treatment**

**Root**

**dipping**

**Soil**

**applications**



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# Seed Treatment

Seed treatment is a most common method adopted for all types of inoculant. The seed treatment is effective and economic.

Seed treatment with *Rhizobium*, *Azotobacter*,  
*Azospirillum*

along with *P.S.M.*

seed treatment can be done with any of two or more bacteria.

no side effect.



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Important things has the seeds must be coated first with *Rhizobium* or *Azotobacter* or *Azospirillum* when each seeds get a layer of above bacteria then the P.S.M. inoculant has to be treated on outer layer of the seeds.

This method will provide maximum number of population of each bacteria required for better results.

Mixing the any of two bacteria and the treatment of seed will not provide maximum number of bacteria of individuals.



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# Root dipping

Application of *Azospirillum* with the paddy/vegetable plants this method is needed.

The required quantity of *Azospirillum* has to be mixed with 5-10 ltr of water at one corner of the field and all the plants have to kept for minimum  $\frac{1}{2}$  an hour before sowing .



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# Soil application

P.S.M. has to be used as a soil application use 2 kgs of P.S.M. per acre. Mix P.S.M. with 400 to 600 kgs of Cowdung along with  $\frac{1}{2}$  bag of rock phosphate if available. The mixture of P.S.M., Cowdung and rock phosphate have to be kept under any tree shade or ceiling for over night and maintain 50% moisture.

Use the mixture as a soil application in rows or during leveling of soil.



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# Precautions

Store biofertilizer packets in cool and dry place away from direct sunlight and heat.

Use right combination of biofertilizers

*Rhizobium* is crop specific, so use in specified crop Do not mix with chemicals

Use the packet before expiry, only on the specified crop, by the recommended method.



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