Selection of Carrier Materials for Biofertiliser Application into Seedlings in Organic Rice (Oryza sativa L.) Nurseries

Priyanga Dissanayake,
Sustainable Agriculture Research and Development Centre, Department of Agriculture, Sri

Chandi Rajapaksha
University of Peradeniya, Fac. of Agriculture, Sri Lanka

Milani Gunathilake, Sanjeewani Ginigaddara,
Rajarata University of Sri Lanka,Fac. of Agriculture, Sri Lanka

"Towards shifting paradigms in agriculture for a healthy and sustainable future"

Rice

- Staple food crop in Sri Lanka
- Nitrogen is the main yield limiting factor
- Mainly grow under submerged condition
- More nutrient losses.
- Encourage to use organic nutrient sources

Biofertilizers

Substances containing living beneficial microorganisms

Acetobactor sp.,
Azotobactor sp.,
Rhizobium strains,
Pseudomonas sp. etc.

Alternative nutrient sources

- Solid fertilizers and nutrient inputs
- Liquid fertilizers
- Biofertilizers (Solid & Liquid)

Biofertilizer inoculation

- Seed dipping
- Seedling dipping
- Soil and Foliar application (more losses under submerged conditions)

Parachute seedling broadcastingis the best suited method for organic rice farming

Advantages

- low Seed paddy requirement
- Low labour requirement
- Reduce Weed problem
- Develop high plant vigor

Objective

To identify efficient and effective way of inoculation usingsuitable carrier materials in to the root zone is important

Selected carrier materials.

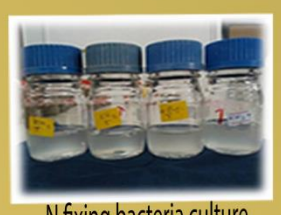
Cattle manure

Compost

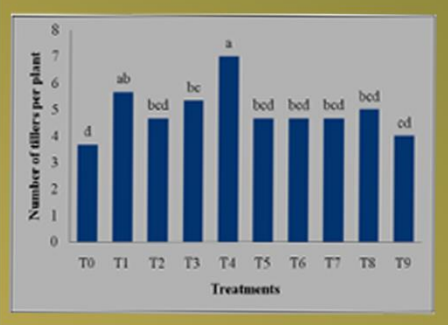
Partially burnt paddy husk (PBPH)

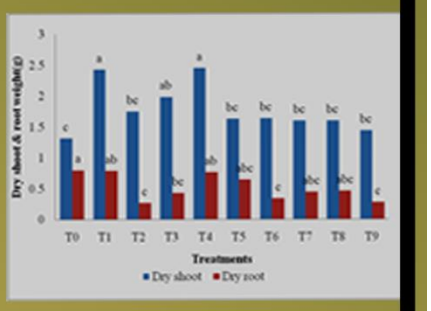
Objective.

biochar can be identified as suitable carrier material in parachute for biofertiliser withnitrogen fixing bacteria using parachute seedling trays for paddy cultivation



N fixing bacteria culture





- PBPH showed significant difference ($p < 0.05$) in plant height, dry shoot weight, plant nitrogen percentage and number of tillers per plant over

- Biofertiliser with biochar (T4) gained the highest significant ($p < 0.05$) mean number of tillers per plant (7) and higher average dry shoot weight

- mean tissue nitrogen percentage (2.47 %)