

EVALUATION OF POSSIBLE CARRIERS TO BE USED FOR
SOYBEAN INOCULANT PRODUCTION IN SRI LANKA

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ABSTRACT

Although peat is the ideal carrier for rhizobia until now it has had to be imported as "Nitragin" the inoculant for the soybean [Glycine max (L) Merr.] crop. This study investigated for the first time in Sri Lanka the possibility of several indigenous materials as carriers for legume inoculant preparations.

Three substrates; local peat, filter mud and coconut shell powder were examined for their suitability as carriers. Physico chemical analyses indicated that filter mud, local peat and coconut shell powder could all be used for rhizobial inoculants. Filter mud received more attention because its quality was superior, on the basis of moisture characteristics and nutrients, when compared to the other two carriers.

Short term growth studies indicated that coconut shell powder could not be used as a carrier. The inoculants require an incubation period of two weeks at 28 C to get the maximum population of rhizobia to develop in the carrier.

Long term growth studies indicated that the local inoculants could be stored at 4 C without any change in the population or survival of the inoculum.

The effectiveness of R. japonicum strains for nitrogen fixation were studied by measurement of plant dry weight in a pot experiment and it was observed that effectiveness was not affected by the carrier. The effectiveness of strains in the field was also tested by using a mixed strain inoculant. No significant difference of plant dry weight were observed between local peat and filter mud.

A mixture of local peat and filter mud was found to be a suitable carrier for inoculant production in Sri Lanka.