MODULE 5: DEMONSTRATION 3

INFLUENCE OF STORAGE CONDITIONS ON TEMPERATURE OF STORED INOCULANT

PURPOSE

- Legume inoculant consists of living rhizobia which can be killed by exposure to the sun or high storage temperatures. The purpose of this demonstration is to show that suitable storage temperature can be achieved, even in a hot climate, by taking special precautions.

CONCEPTS OF DEMONSTRATION

Inoculant should not be exposed to the sun or stored in a hot shed.

Inoculant may be wrapped in a moist towel or placed in a basket covered with a wet towel to keep it cool and sheltered from the sun.

A ceramic urn buried at a shady spot can keep inoculant safe and cool.

RECOMMENDATION TO FARMERS FROM RESULTS OF THE DEMONSTRATION

Always keep rhizobia away from sun and heat.

Make use of the storage suggestions shown in the demonstration or improvise your own methods.

When in doubt, use a thermometer to verify temperatures.

In the field, inoculate in the shade. When planting seeds, cover seeds with soil soon after sowing.

Inoculants must be kept in closed bags.

CONDUCTING THE DEMONSTRATION

Explain to the farmer that inoculants cannot be treated like fertilizer when transporting and storing them. Convince him that sunshine is not good for them. Storage in a hot shed must be avoided.

Make a small demonstration to show that it is possible to achieve lower temperatures by simple means.

Materials Requirements:

a sunny spot
a hot storage shed
two wet towels
four thermometers
one ceramic container with lid (8 liter or more capacity)
one digging tool
eight 10 g bags of inoculant

Place two bags of inoculant in the following locations:

1) Directly into the sun. A spot should be chosen which will remain unshaded for at least 1 hour.
2) Into a hot storage shed.
3) Into a basket after wrapping the inoculant in a moist towel. Cover the basket with another moist towel.
4) In a ceramic vessel buried in the soil in a shady spot. A thick wooden lid should cover the vessel.

Add a thermometer to each one of the four storage treatments and take readings after 1 hour.

Record the temperatures reached by the inoculant.