

“Peas at school”

The experiment requires the preliminary preparation of the following materials and equipment:

Hydrogen peroxide (3%);

Denaturated alcohol;

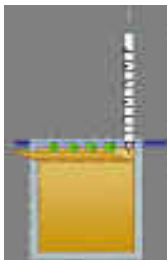
Natural still mineral water;

100 pea seeds;

Rhizobium from nodules of pea plants

Jensen solution which contains numerous salts except nitrogen.

Bags and box



-Take about 80 pea seeds, put them in a glass and add some oxygenated water (3 %).

Delicately shake the glass for 10 minutes. Eliminate the oxygenated water slowly and rinse the seeds with water.

-Take 4 peas (sterilyze your fingers with alcohol) and put them in the bag in equal distance one another.

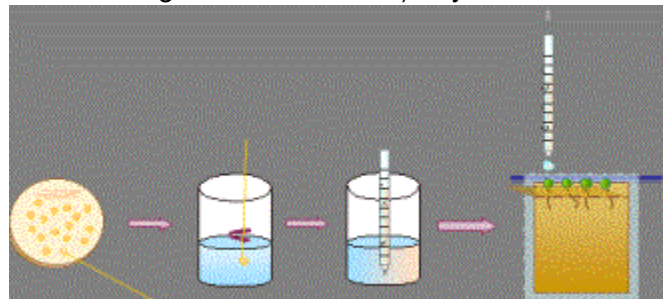
-Add in each bag 1ml of Jensen solution (use 2ml pipettes) and 19ml of water (use 25ml pipettes)

-Make sure that in the room where you incubate the beans there is enough light and the temperature is kept constantly at 20 degree C.

-Take nodulated broadbean uprooting them from the soil of the garden, take each separate nodule and squash them , then streak the suspension on tyr plate

After 4 days bacteria have grown and multiplied in colonies. The seeds have started to produce small roots (You can infect them when they reach the length of max. 3-4 cm). If you find some spoiled seed, just throw it away and give more room to the others!

For infecting the seeds with bacteria use plastic loops to first stir and then take the bacteria inoculated in glasses. Each glass (previously labeled) contains mineral water (20ml).



With 2ml pipettes inoculate the suspension

containing bacteria in 6 of the 12 bags and label them: in this way you can compare the difference between the infected and non-infected groups.

Leave the bags in the box for 45 days and make sure that each bag is constantly filled with water (20ml)

Your success depends on four simple actions:

1 - Check the bags daily;

2- Pour room temperature water, gently and sideways

3 - Use different pipettes for the two groups of bags to avoid contamination. First pour water into two different glasses and then use with the pipettes.

4 - Add the Jensen solution (1ml) in each bag once a week.

