

# Procedures of growing bean seeds in pouches using plexiglass

Modified by Bob Snyder  
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## A) Bean seed preparation:

- 1) Sterilize the seeds with 50% chlorox + 0.1 ml of Tween 20.
- 2) Wash the seeds several times with distilled water to remove the chlorox solution.
- 3) Scarify with a blade the portion of the seed close to the micropylar end. This helps entry of solution into the seeds.
- 4) Then lay out the seeds (4/5 in one brown germination paper) at the top of the paper approximately 2" down from the top edge and then roll the brown germination paper. Orient the bean seeds vertically on the paper.
- 5) After the rolls are ready, place upright in a beaker containing either low P or high P solution.
- 6) The beaker containing paper rolls are then placed inside the growth incubator at 28C for 24 hours.
- 7) Next day peel off the hilum portion of all the seeds.
- 8) Put the seeds back again in growth incubator for another 24 hours at 28C.
- 9) Next day take the beaker out of the growth incubator. The seedlings now have 1-3 cm primary root.

## B) Bean Pouch Setup:

- 1) Take one blue germination paper inside the plastic growth pouch and make an angular hinge at one side of the paper. Soak the paper with little amount of solution.
- 2) Then put the seedling in the hinge with primary root on one side and the seed on the opposite side the hinge.
- 3) Then place a plexiglass panel (same size as the pouch) affixed to the side of the pouch where the tap root can be seen and hold the plexiglass tight with paper clip on the top.
- 4) Hang the pouch + plexiglass in the growth cans (ie; plastic trash cans) with file holder ( cut off the hanger top of a hanging type file folder to get the hanger). The growth cans have nutrient solution where the bottom of the pouch will immerse.

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