Multiplication of Some Phytopathogenic Fungi In Relation To Testing the Disease Resistance of Vegetable Crops (A Summary)

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When parasitic fungi are grown for long periods on agar their virulence gradually diminishes. The spore production of Colletotrichum lindemuthianum frequently decreases in favour of the formation of more mycelium. The infection of the plants only occurs after germination of spores. For reliable selection of resistant seedlings a surplus of spores has to be available, particularly for those fungi, which have specialized biologic races. The appearance of less virulent forms in the cultures is not infrequent. The occurrence of more virulent mutants has been feared in tests for selection of resistant plants. To conserve the virulence of the cultures the following precautions have to be taken:

1. Store the cultures at low temperatures.
2. When making subcultures use only spore suspensions in sterile water.
3. Avoid the penetration of smoke of burning cotton or wool into the tubes.
4. In large glass tubes the cultures produce spores in large quantities and last more than one month.
5. Use these large tubes for multiplication of infection material for plant breeders.

Fragrant Bean Flowers

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A cross was made between a bush plant Phaseolus vulgaris and a dwarf P. multiflorus (P. coccineus). The female parent was an F_3 white-seed stringless or snapbean (green round pod) of our own breeding and had been derived from an F_4 of Greencrop x Knox white-seed stringy pole bean from New Zealand that had been pollinated by Royalty. Pollen parent was Hammonds Dwarf Scarlet Runner Bean. Both parents had non-fragrant flowers. The one F_1 plant grown in the field had non-fragrant dark pink or dilute red colored flowers. Six plants of Hammonds Dwarf Scarlet Runner were grown next to the F_1 and 2 rods away short rows of P. vulgaris varieties: Royalty (purplepod snapbean) and Scarlet Beauty horticultural bean. Three rods away, 2 hills each of Kentucky Wonder Champagne, and Martin (from West Virginia) pole beans were grown; also several short rows each of Shelleasy and NH #HR2 bush horticultural beans. Some flowers of the F_1 were tripped and hand-pollinated with pollen of Hammonds D. S. Runner; the others were open-pollinated. Pods of the F_1-hybrid were stringless at all stages of maturity. There were never over 2 seeds to a pod, mostly only one, and many pods were empty. Of 129 dry seeds that were harvested, some seeds had poorly-developed abnormal embryos. A markedly variable population of 100 second-generation plants has been grown in the greenhouse during the winter of 1962-63. Of particular interest is a plant that has strongly fragrant flowers. Sufficiently so, that the pleasant odor is noticeable as one walks by the bench in the greenhouse. The fragrance has been described by several persons as similar to red clover only more spicey, Chinese orchid, and sweet pea. It is ephemeral and has vanished by noon of the day that the flowers reached anthesis. Several other plants had flowers with fragrance so slight as to be just barely detectable. We are interested in receiving seeds of these two species from anyone who has beans with fragrant flowers.