

HALO BLIGHT OF BEANS (PHASEOLUS VULGARIS L.):
DISEASE SYMPTOMATOLOGY AND RESISTANCE TO
PSEUDOMONAS PHASEOLICOLA (BURK) DOWS

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SUMMARY

Halo blight of beans caused by Pseudomonas phaseolicola has been found to be one of the most important diseases of beans (19). It was found to be widely distributed in Kenya and its attack on beans in the early stages resulted in very low yields. Identification of halo blight was very clear at its initial stages of attack when it formed characteristic halos on leaves of susceptible bean varieties.

Isolates of P. phaseolicola were obtained from diseased specimens collected from 12 bean growing districts. It was found that pure cultures of this bacterium could be obtained from fresh leaf lesions after 48 hours at 20⁰C on nutrient agar.

Resistant bean varieties reacted mainly with necrotic spots and partial chlorosis to P. phaseolicola race 2. Large water-soaked lesions and entire chlorosis formed the main symptoms on leaves of susceptible varieties.

Dipping peeled bean seeds in a suspension of P. phaseolicola has been found to be the most convenient method of inoculating beans in this study.

Races 1 and 2 were both found to exist in Kenya.

Out of 30 isolates 7 belonged to race 1 while 23 were of race 2. The latter was more frequent and caused severe drooping of primary leaves in Red Mexican U1 3 seedlings-

Resistance to P. phaseolicola race 2 in GLP 16 and GLP x92 could be governed by one recessive gene. A ratio of 1(Resistant) to 3(Susceptible) was obtained in the F₂ seedlings from crosses between three susceptible varieties and the two resistant ones mentioned above.