
EVALUATION OF WHITE MOLD REACTION IN A NEBRASKA DRY BEAN NURSERY

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Numerous dry bean lines and cultivars have been evaluated in a furrow irrigated white mold (*Sclerotinia sclerotiorum*) nursery between 1978-1984 at the University of Nebraska Panhandle Research Station facilities at Mitchell, NE. These field screenings have included great northern, pintos, dark and light red kidneys, blacks, small whites, plant introductions, and selected lines of *Phaseolus coccineus*, *P. acutifolius*, and *P. lunatus*.

In these past 6 years, planting methods and management of this nursery have been consistent and the infestation of the pathogen has also been homogeneous. Although we have encountered some variable results from year to year in the incidence and severity of white mold disease, the overall consistency of this nursery has been invaluable in assessing field white mold potential.

When compared to standard susceptible cultivars, a number of lines and cultivars have repeatedly shown field resistance or architectural avoidance which has limited the severity of the disease in replicated three-to-four-row plots. Tacaragua, Venezuela 350, Midnight, Domino, Rabia el Gato, and Florida 72 have averaged less than 20% severity in each of three or more years tested, while A-55, PI 169787, PI 415966, and PI 415965 have averaged less than 5%. Susceptible great northern and pinto checks averaged greater than 80% severity. Although most of these materials have field resistance which has broken down in limited term inoculation tests, Dickson and Hunter (BIC 27, 196-197) have identified PI 415965 and Rabia el Gato as having some physiological resistance.

Two cultivars, Bunsi and Ex Rico 23, have been derived from a limited source of seed from CIAT and in many respects appear to be identical. However, we observed that Bunsi had a more porous, upright canopy than Ex Rico 23 and was considerably more susceptible to white mold. This implies that these varieties may be exhibiting genetic drift since our Bunsi came from J. Kelly, Michigan State, and the Ex Rico 23 came from J. Beversdorf, Ontario, CANADA. We intend to test this further in 1985.

In 1984, early flood damage created uneven areas in the nursery resulting in high disease ratings at locations where irrigation water was retained for longer periods of time and little or no disease at drier areas. This emphasizes the necessity of adequate replication and the caution which should be taken in interpreting results. Severe disease ratings in even one replication may reflect the potential of a variety to be infected by *S. sclerotiorum* under some field conditions. Average disease severity should be used cautiously, particularly if one replication shows severe disease.