

Screening of birdsfoot trefoil introductions for
tolerance or resistance to fusarium wilt and root rot*

Ken ZEIDERS and William Templeton

U. S. Regional Pasture Laboratory, University Park,
Pennsylvania.

The following introductions have promise and need further evaluation because they showed resistance to fusarium wilt and fusarium root rot. These seven accessions had the most surviving plants out of 21 plants of each tested and are considered to be moderate to good sources of resistance: P.I. 255177, 262531, 290717, 285283, 213566, 277850, and 283621. Five birdsfoot trefoil introductions are considered as marginal sources of resistance to fusarium wilt. These are P.I. 249753, 255305, 226798, 303822 and 255302.

Fusarium wilt has been a problem on birdsfoot trefoil for several years in the Champlain Valley, N.Y. Severity of the disease is increased by prolonged periods of hot dry weather. Germplasm provided by the NE Regional Plant Introduction Station, Geneva, has been evaluated in a 1981 test. A total of 36 trefoil varieties, breeding lines and P.I. numbers were screened for resistance. Up to 40 plants of each entry were inoculated with virulent cultures of Oxysporum from Westport, N.Y. Data on the number of plants healthy, wilted and dead were recorded on four dates from August 12 to Dec. 21. By Dec. 21, only 176 out of 1,234 plants inoculated were free of wilt. These plants will be retained for use in breeding programs. The numbers of wilt free plants among entries range from 13 for A1A synthetic from Guelph, Ontario to 0 from P.I. 250571. The ten best entries in order of value are: LA synthetic, Viking, P.I. 255177, ES synthetic, P.I. 262531, P.I. 290717, FC 39604 and three other synthetics. Note that this list includes five of the six entries from Guelph. These plants were also among the most vigorous in the test. The capacity of the plants to survive was used as the criterion of resistance. Therefore, entries with the greater number of surviving plants are considered to have the best resistance. We plan to increase this material by making cuttings.

*Report to the Northeast Regional Plant Introduction Station, N.Y. State Agricultural Experiment Station, Geneva, New York.