

Table 1. Reactions of germplasm during three seasons to halo blight in Kisii.

| Accessions | Reaction* | Accession | Reaction* |
|-------------------------|-----------|-----------------|-----------|
| GLP-2 | VS | NVBEC | S |
| GLP-24 | S | OSU 1604 | R** |
| GLP-1004 | VS | OSU 10163 | VR |
| GLP-16 | R | Pinto 111 | S |
| GLP-X.92 | VR | Pinto 114 | VS |
| GN Emerson | S | PI 150414 | R** |
| GN Nebraska No.1 | S | PI 181954 | S |
| GN Jules | S | Redcloud | S |
| GN Nebraska No.1 sel.27 | VR | Redkote | VS |
| GN Tara | R | Red Mexican UI3 | S |
| GN Valley | S | Sanilac | S |
| GN UI 59 | S | WIS HBR72 | VR |
| GN UI 1140 | S | 79-8625 N (HLR) | VR |
| Noorinbee | S | | |

* VR = highly resistant
 R = resistant
 S = susceptible
 VS = highly susceptible

** Reaction during long rains 1981: susceptible

Field Infection of Beans with Bean Rust

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The occurrence and importance of bean rust Uromyces appendiculatus (Pers.) Unger. in beans Phaseolus vulgaris L. has become disturbing particularly in french beans. In dry beans, this disease is considered number five in importance after bean common mosaic, halo blight, anthracnose and angular leaf spot. Serious outbreaks of bean rust on dry beans have been noted particularly at Thika and Kakamega, but the disease occurs also in Machakos, Kisii and most of the other bean growing areas (Gerlagh, 1982).

The main threat by bean rust is directed to french beans for which chemical control has been advised (Stoetzer and Ogunyini, 1983). In order to select french beans for commercial production and to reduce the cost of chemical control by the farmer, an attempt was made to screen bean cultivars under field conditions at Thika for resistance or tolerance to rust. The available cultivars along with the cvs. 'Monel', GLP-24 and GLP-69 as standards were tested using spreader

rows, during the long rains, 1983. The susceptible cv. GLP-69 was planted in the spreader rows between which other cultivars were planted about a month later. The rust attack on the spreader row plants was severe enough to render mechanical inoculation unnecessary.

All the cultivars were so heavily attacked by the rust (table 1) that even the cultivar 'Royalnel' which in an early stage was least attacked was no better than others in subsequent observations. These cultivars were all attacked at the secondary leaf stage, wilted and eventually died implying the absence of seedling stage resistance. However it is important to note that the cultivar GLP-24 has a good adult plant tolerance as compared to GLP-69 (unpublished data), indicating that probably the screening conditions can be so severe that no useful information can be obtained.

References

- Gerlagh, M., 1982. Report of a consultancy mission to the Grain Legume Project. National Horticultural Research Station, Thika, Kenya. May 14 - 28, 1982.
- Stoetzer, H.A.I. and Omunyan, M.E., 1983. Controlling bean pests and diseases. Kenya Farmer. August 1983 (Special issue: Food beans in Kenya): 22 - 24.

Table 1. Responses of bean lines to bean rust.

| Cultivar | Disease Score [*] 0 - 5 Scale ^{**} | Plants Killed ^{***} (%) |
|-----------|---|-------------------------------------|
| Nirda | 4.0 | 40 |
| Cesar | 4.5 | 35 |
| R 225 | 4.0 | 38 |
| Morgane | 4.5 | 67 |
| Morbel | 5.0 | 85 |
| GLP-24 | 4.5 | 48 |
| Monel | 5.0 | 62 |
| Aiguillon | 5.0 | 28 |
| Belna | 4.5 | 38 |
| Vernadon | 5.0 | 86 |
| Royalnel | 3.0 | 50 |
| Garonel | 4.5 | 44 |
| GLP-69 | 4.5 | 17 |

* 20 days - old plants

** 0 = no visible symptoms;

5 = large rust pustules, plant nearly wilting

*** 25 days - old plants