

COMUNICACIONES

Evaluation of *Phaseolus coccineus* Lam. germplasm for resistance to common bacterial blight of bean.

Resumen. Fueron evaluados once materiales provenientes de la especie *Phaseolus coccineus* Lam., para conocer su resistencia al anubio bacterial común causado por *Xanthomonas campestris* pv. *phaseoli* (Smith) Dye. Las líneas M 7701, G 35044, N. I. 520 y N.I. 15 fueron altamente resistentes y pueden servir como fuentes de resistencia en mejoramiento genético de frijol para anubio bacterial común.

The common bacterial blight of bean caused by *Xanthomonas campestris* pv. *phaseoli* (Smith) Dye is one of the important seed-transmitted diseases of dry bean (*P. vulgaris* L.) for which efficient chemical control measures are not available and also within the dry bean germplasm very few materials possess acceptable levels of resistance to this disease. In search of adequate sources of resistance to this disease several related *phaseolus* species were tested for blight resistance and the present report is related to the evaluation of *P. coccineus* Lam. germplasm for common blight resistance.

Materials and Methods

Eleven materials of *P. coccineus* obtained from the germplasm bank of CIAT, Colombia were planted in the green house pots in 3 replications along with two blight susceptible local cultivars of *P. vulgaris* as controls. In the third week after germination two pairs of trifoliolate leaves per plant were inoculated with isolate 822A-1 of *X. campestris* pv. *phaseoli* (Smith) Dows, at an approximate concentration of

10^6 cells/ml utilizing modified multiple needle inoculation method. The blight resistance of the inoculated material was recorded 15 days after inoculation on a scale 1-5 as described earlier(2).

Results and discussion

The blight reaction of the eleven *P. coccineus* materials and the susceptible *P. vulgaris* controls are presented in Table 1. As seen from the results M

Table 1. Levels of resistance of *P. coccineus* germplasm for common blight (*X. campestris* pv. *phaseoli* (Smith) Dye.

Identification of Material	Level of Resistance*
<i>P. coccineus</i>	
MITA 46-1	4
N.I. 520 (P.I. 201304)	2-
G 35022 (P.I. 165421)	2
N.I. 2 (P.I. 176672)	3
N.I. 229	2
G 35075	4
M 7701	2-
G 4834 (Puebia 56-C)	3
G 35044 (P.I. 201297)	2-
N.I. 15 (Blanc No. 5)	2-
G 35078 (P.I. 273-448)	2
<i>P. vulgaris</i> controls	
CV. 'Iguaçu'	5
CV. 'Carioca'	5

* Scale of evaluation 1-5 representing resistant to susceptible reaction.

7701, G 35044, N.I. 520 and N.I. 15 possessed high levels of resistance followed by G 35022, N.I. 229 and G 35078 which presented acceptable levels of resistance but with more distinct chlorotic border around the lesion than the earlier group of materials. The rest of the materials showed intermediate to susceptible reaction. Considering the efforts involved in obtaining useful hybrids with high fertility by interspecific crossing, only the first group of material possessing high levels of resistance are adequate for use in the breeding program aiming at incorporation of blight resistance in the commercial cultivars belonging to *P. vulgaris*.

Tolerance to common blight was reported in *P. coccineus* P.I. 165421 (3) and also in populations of *P. coccineus*. The advanced interspecific hybrid progenies of *P. vulgaris* x *P. coccineus* cross showed disease reaction varying from high tolerance to susceptibility (personal correspondence, D. P. Coyne, Univ. Nebraska, USA) and the preliminary results of our selfed and backcrossed progenies of *P. vulgaris* x *P. coccineus* cross confirm the above results. It is important to bring together the genes conferring resistance to common blight originating from different species in order to have higher and stable levels of resistance and as *P. vulgaris* and *P. coccineus* are considered to be closely related species (1) such transference is relatively easier as compared to the other interspecific crosses of the genus *phaseolus*.

Resumo. Onze materiais provenientes da espécie *Phaseolus coccineus* Lam. foram avaliados para resistência à bacteriose comum causada por *Xanthomonas compestris* pv. *phaseoli* (Smith) Dye. As linhas M 7701, G 35044, N.I. 520 e N.I. 15 foram altamente resistentes e poderiam servir como fontes de resistência no melhoramento do feijoeiro para resistência à bacteriose comum.

Summary

Eleven materials of *Phaseolus coccineus* Lam. were evaluated for resistance to common blight caused by *Xanthomonas compestris* pv. *phaseoli* (Smith) Dye. The accessions M 7701, G 35044, N.I. 520 and N.I. 15 were highly resistant and can serve as sources of resistance in breeding dry beans for common blight resistance.

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Peso e teor de óleo de sementes de Mamoneira (*Ricinus communis* L.): Efeito da posição de amostragem do rácmo

Summary. The seed weight and oil content of the castor-bean cultivar Guarani and the introduction IPP, were evaluated at the top, middle and lower parts of the raceme. The evaluations were done in order to verify differences along the raceme.

Significant variations were observed for such characteristics among plants, especially on the apex of the raceme. In general, the seed weight and oil content decreased from the lower to the upper part of the raceme. Significant differences were found in the IPP introduction in relation to "Guarani." IPP introduction has a long raceme with a greater number of fruits than the Guarani cultivar, and could increase the competition for plant metabolites among fruits on the top, middle and lower part of the raceme.

The oil contents must be considered as average values since they were obtained by solvent extraction of several seeds. Individual seed evaluations should present greater differences than the solvent extraction method. Therefore, a standard sampling procedure should be used to obtain representative measurements. The middle and lower part of the raceme appears to be the most suitable for seed sampling.

Despite the tendency of seed weight and oil content to decrease from the bottom to the top part of the raceme, no significant correlation was found between such measurements.