

INHERIANCE OF ABAXIAL LEAF PUBESCENCE AND ITS IMPLICATIONS TO RUST
RESISTANCE IN BEANS

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Leaf pubescence has long been considered generally a desirable trait in agricultural plants because of the protection it offers against insects (leafhoppers and bean flies) and plant diseases (Shaik and Steadman, 1988). There has been no report on the inheritance of leaf pubescence in Phaseolus vulgaris L. Intraspecific variation for abaxial leaf pubescence was detected among dry bean cultivars/ lines and was found to be associated with rust intensity (caused by Uromyces appendiculatus (Pers.) Unger appendiculatus) on leaves. Inheritance of pubescence (long, straight hairs) was studied in the dry bean crosses of pubescent Pompadour Checa (Dominican Republic) x eight glabrous cultivars/lines. Segregation for pubescence versus glabrous of F₂, F₃ and F₅ indicated that pubescence was controlled by two major complementary dominant genes (Pb₁ Pb₁ Pb₂ Pb₂). The environment did not influence the range in expression of leaf pubescence. High estimates of realized and narrow-sense heritability ranged from 0.47 to 1.00 for a wide array of 15 dry bean crosses. Simple inheritance and high heritability of leaf pubescence indicated that single plant selection would be effective for this trait.

References:

Shaik, M. and J. R. Steadman. 1988. Nonspecific resistance to bean rust and its association with leaf pubescence. Ann. Rept. Bean Imp. Coop. 31:62-63.