

## MORPHOLOGICAL CHARACTERIZATION OF WILD ACCESSIONS OF COMMON BEAN (*Phaseolus vulgaris* L.)

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Wild bean characteristics such as adaptation, disease and insect resistance provide excellent sources of genetic variability for plant breeding programs. The efficient use of such variability will depend on adequate characterization of this germplasm. Field and greenhouses experiments were carried out at Embrapa experimental farm in Goiânia, Goiás, Brazil on 1997/1998, to undertake the morphological characterization of 36 accessions of wild beans (*Phaseolus vulgaris* L.), with Mesoamerican and Andean origin, divided on 6 groups of 5 entries according their altitude of origin (710, 1040, 1420, 1770, 2300, and 2740 m). During the developmental cycle of the plants, the following morphological traits were evaluated: length and width of the central leaflet; number of floral insertions/raceme; length and width of the bracteoles of calyx; number of nervures/bracteoles of calyx; pod length and width; number of seeds/pod; and weight of 100 seeds.

There were significant differences among the wild bean accessions for all morphological traits studied (Table 1). The Andean accessions originated from 2740m of altitude showed bigger width of central leaflet and length and width of pods, whereas the weight of 100 seeds was bigger and the bracteole of calyx bigger and wider than accessions originated from lower altitudes. The Mesoamerican and Andean accessions, originated in altitudes from 1040 and 1420m, possess narrower leaflets, smaller seeds and pods, and smaller and thinner bracteoles than all others groups.

Analyzing the data within each group, it can be observed that accessions from the group originated at 2470 m high shown the highest variability for length of leaflets and pods, and weight of 100 seeds (Figure 1.). The accessions originated at 1770 m high were more variable for length and width of bracteoles, while the accessions originated at lower altitudes were more variable for number of floral insertions (Figure 1.).

In conclusion, this study has indicated that wild bean accessions posses very large variation for morphological traits and that the altitude of the origin has a greater influence on determining this variability, whether being Mesoamerican or Andean.

TABLE 1. Means for morphoagronomic traits in wild beans accessions originated from different altitudes.

ALTITUDE (m)	LCF (cm)	WCF (cm)	NFIRAC	LB (mm)	WB (mm)	NNB	LP (cm)	WP (cm)	NSP	W100 (g)
710	6,6c	4,5b	4,0a	5,3c	3,8c	7,0a	8,0b	0,56e	7,0a	7,0e
1040	6,3d	4,0d	5,0a	5,0c	3,1c	7,0a	7,1e	0,54f	7,0a	5,8f
1420	5,9e	4,1d	3,0b	5,3c	3,7c	6,0b	8,3d	0,60d	6,0b	8,4c
1770	6,4d	4,2c	3,0b	5,7c	4,0b	6,0b	7,6c	0,63c	7,0a	7,3d
2300	7,5b	4,8a	3,0b	6,4b	4,2b	6,0b	8,2b	0,66b	6,0b	10,6b
2740	7,7a	4,9a	3,0b	7,0a	4,7a	7,0a	8,5a	0,74a	5,0c	17,0a

<sup>1</sup>LCF- length of central leaflet; WCF- width of central leaflet; NFIRAC- number of floral insertions/raceme; LB- length of bracteoles; WB- width of central bracteoles; NNB- number of nervures of bracteoles; LP- length of pod; WP- width of pod; NSP- number of seeds/pod; W100- weight of 100 seeds.

Means in the columns, followed by the same letter, do not differ significantly at the 5% level of probability, according Scott-Knott test.

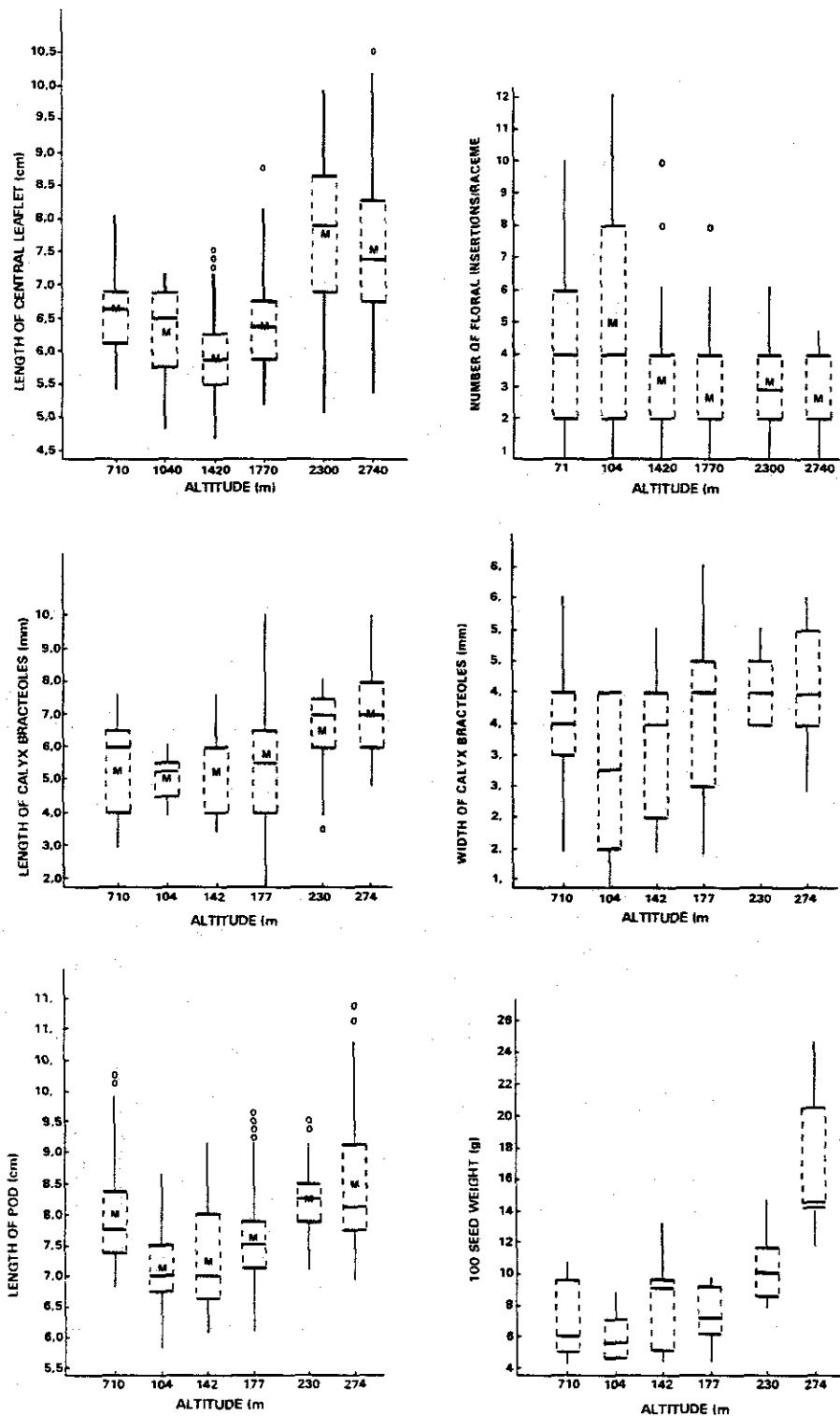


FIGURE 1. Distribution of length of central leaflet, number of floral insertions/racemes, length and width of bracteoles of calyx, length of pod and weight of 100 seeds, in wild accessions of common bean, from different altitudes.