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INFLUENCE OF AGE AT TRANSPLANTING ON SEED YIELD OF  
A POLE BEAN (*Phaseolus vulgaris* L.)

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The influence of trasplanting in the yield and components of *Phaseolus vulgaris* L. was study by three years. Two varieties of pole bean were used: Flor de Mayo X-16441 (1981 y 1982) and Negro 150 (1982 y 1983). The treatments consisted in transplanting at 15, 30 and 45 days of age (1981 and 1982, 1983 the two last, only), the control was directly planted in the field.

The tendency encountered by effect of treatments were permanent for the study's years. Only, the plants of transplanting at 45 days, showed delay for days to beggining flowering and physiological maturity. The response on the yield and its component was different in the varieties. For flor de Mayo, reductions until 8% in the yield wasn't significantly different. In contrast, Negro 150 showed reductions until 46%. The best correlations with yield were obtained for number of seeds and for number of pods per square meter. This results indicate what varieties of similar growth habit can to show different plasticity under stress situations.

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Bean Selection for Cold Tolerance Based on Freezing  
Germinated Seeds and Seedlings

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In Western Poland severe damage in bean crops have been reported due to susceptibility of this species to cold. Selection methods developed to improve this character in beans include crosses among cultivated and wild species, gene introducing and selection based on several physiological characters.

Experiments with bean lines and cultivars were carried out for four years in the laboratory and field. Selection for cold tolerance can be made using seed germinated for 48 hours at 20°C or three weeks old seedlings. Both seeds and seedlings were frozen for two hours at -6°C and -4°C, respectively, with a temperatrue drop 5°C per hour. Capacity of the studied plant material to survive freezing was measured on the basis of seedling observation and sowing seeds of selected lines in the laboratory under optimal (25°C, 12 hr photoperiod) and in the field under suboptimal (sown on May 7) conditions. For cultivar survival test unfrozen seeds were sown in the field 35 days earlier than usual. In the other test used a percentage of damaged embryo cells was calculated on the base of two conductivity measurement. Check seeds were sown unfrozen at optimal time (May 20). Significant linear correlations were found for the test results obtained using conductivity and survival test, both for selections and cultivars. The tests made possible to select two common bean cultivars with positive response to low temperatures (Table 1). Colored-seeded bean cultivars in comparison with white-seeded ones had always better cold tolerance.