Mechanical Damage of Seed and its Genetic control in Common Bean. (C01-park070819-Oral)

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Abstract:

Combine harvest and subsequent handling of beans cause mechanical damage (MD) of beans and this results in reduced market value and processing due to split and cracked seed coat and reduced germination and seedling vigour. Two recombinant inbred populations (130 F 5 and F6) of crosses between MD resistant and susceptible lines grown in 2 yrs were subjected at 13% moisture to a simulation device (pedal machine). Frequency distributions of the crosses were fairly normal, suggesting that MD was under quantitative genetic control. Heritability (ns) estimated by the parent-offspring regression (h=0.50 and 0.64 for crosses 1 and 2) suggests that selection for MD tolerance may be effective at advanced generation. MD and maturity had significant negative correlations (r=-0.36 and -0.30 for C1 and 2) suggesting late maturing lines tend to be more tolerant than early lines though both tolerant lines were early maturing lines in Ontario.

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