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1. Protein differences in reciprocal crosses.

Reciprocal crosses were made between three inbred lines, 38-11, CI21E, and Oh7A, and Illinois High Protein (IHP) in the summer of 1966. The per cent protein was determined using the Kjeldahl method.

The mean per cent protein for each cross and the per cent difference between reciprocal crosses are listed in Table 1. Ten reciprocal crosses were made involving 38-11 while seven each were made with the other two lines. Using individual reciprocal crosses as a basis for pairing, each line crossed with IHP showed a highly significant difference in per cent protein using the paired t test.

Table 1

Cross (1)	Protein Content	Difference between reciprocal crosses
38-11 x IHP IHP x 38-11	13.77% 27.29	13.52%
CI21E x IHP IHP x CI21E	11.07 26.17	15.10
Oh7A x IHP IHP x Oh7A	10.71 27.08	16.37

(1) Female listed first.

Gene dosage effects associated with the endosperm, effects of cytoplasm contributed by the female parent, and maternal effects attributable to the female sporophyte could possibly explain the above differences. Related experiments are planned to study the cause of these differences.

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