

A NEW MUTANT PRODUCING LOBATE LEAFLETS IN PEA (Pisum sativum L.)

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A new mutant producing lobate leaflets has been obtained by gamma irradiation (6 Kr) of seeds of cv. 'Neuga' (Fig. 1) (1). The line containing the new mutant gene was named MF-14 lol.

F1 plants of a cross of the original variety with mutant line MF-14 lol had two types of leaflets, most of them having a normal shape and some exhibiting a single small lobe or a slight sinuous margin.

Segregation in the F2 population (Table 1) showed that the inheritance of the lobate leaflets mutant character is monogenic recessive, but with incomplete dominance.

Since a similar mutant has not been described in the pea literature, we propose to name the new mutant lobate leaflets with the symbol lol.

Analysis of crosses between the MF-14 lol line and several lines carrying markers for different chromosomes revealed evidence of coupling phase linkage between lol and wlo on chromosome 6 (Table 2).

Since the individuals possessing the recessive mutant lol could be identified in the seedling stage, this mutant could be a valuable marker for genetic studies.

Table 1. Phenotypic distribution in F2 population from the cross Neuga x MF-14 lol.

| Normal | Lobate leaflets | Total | Chi-square (3:1) |
|--------|-----------------|-------|------------------|
| 138 | 48 | 18b | 0.0b |

Table 2. Analysis of joint segregation in F2 for gene Lol and different gene markers.

| C.ene pair | Xy | | | | Total | Chi-square | | | | Recomb. fract. | S.E. |
|------------|-----|----|----|----|-------|------------|---------|---------|-----|----------------|------|
| | XY | xY | xy | X | | Y | Linkage | | | | |
| Lol 1 | 254 | 89 | 78 | 29 | 450 | 0.36 | 0.36 | 0.05 | ns | | |
| Lol St | 165 | 48 | 52 | 24 | 289 | 0.26 | 0.00 | 2.52 | ns | | |
| Lol Le | 104 | 29 | 26 | 15 | 174 | 0.19 | 0.01 | 3.50 | ns | | |
| Lol Gp | 100 | 31 | 35 | 13 | 179 | 0.31 | 0.02 | 0.22 ns | | | |
| Lol Wlo | 176 | 2 | 4 | 42 | 224 | 2.38 | 3.43 | 142.51 | *** | 2.96 | 1.95 |
| Lol Tl_ | 164 | 50 | 54 | 20 | 288 | 0.07 | 0.07 | 0.40 | ns | | |

*** Significant at 0.001

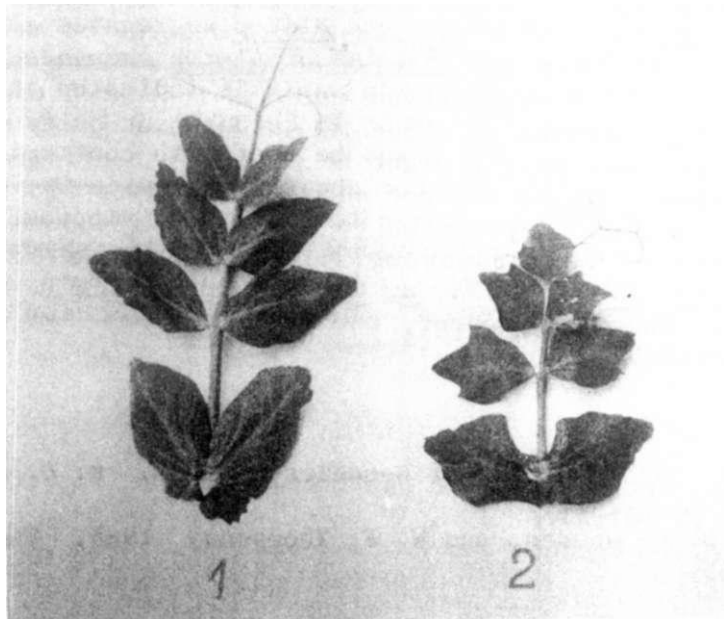


Fig. 1. Normal leaf (left) vs. leaf with lobate leaflets (lol)
