

A NEW GENE HETEROPHYLUS (het) ON CHROMOSOME 7

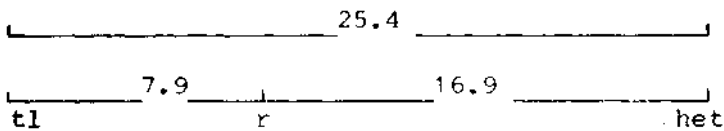
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A mutant, with changed morphology of the stipules was induced after seed treatment of line Wt 3527 by a combined dose of 200 r NF + 0.014% NEU (1). The stipules are strongly reduced at the base of stem, narrowed and opened at middle order nodes and different in size at the top nodes (Fig. 1). The mutant line Wt 11291 was included in the Wiatrowo pea gene bank in 1981.

Locus identity tests were made with five other mutation cases of similar type and type lines for stipules reduced (Wt 10232, st), stipulae asymetricae (Wt 11072, stia) and stipula imminuata (Wt 11520, stim). The F1 results showed that the character described above in line Wt 11291 is controlled by a locus different from any of the other genes in the comparison. For these reasons the name heterophylus and the symbol het is proposed.

In linkage studies, the F2 population of cross Wt 11291 (het) x Wt 11744 (tl wsp r) was analyzed in the greenhouse in 1988. Undisturbed monohybrid segregation was shown for het and tl with significant deviations for wsp and r (Table 1A). The data in Table IB show significant deviations from independent assortment for gene pairs tl-r, het-r and het-tl but no deviations for gene pairs involving wsp. The recombination fractions (Table IB) suggest the following gene order:



1. Swiecicki, W.K. 1984. PNL 16:84-86.

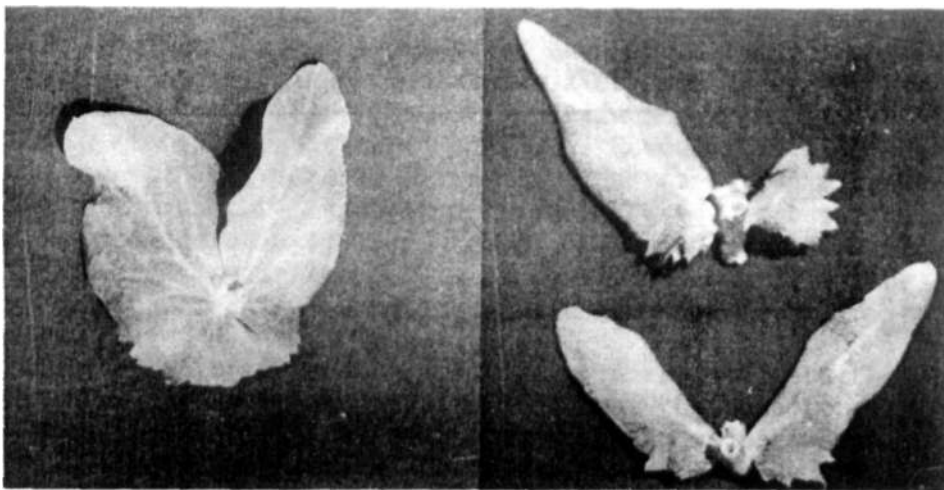


Fig. 1. A new gene het.

Table 1. Phenotypic distribution in an F2 population from a cross between Wt 11291 (heterophylus) and Wt 11744 (testerline).

A. Monohybrid F2 segregation				Total	Chi-square (3:1)
Phenotype					
Het	het			215	1.3
154	61				
Tl	tl			215	3.4
173	42				
Wsp	wsp			216	8.0
180	36				
R	r			222	10.1
187	35				

B. Joint segregation of Het with Tl, Wsp and R				Total	Joint Chi-square	Recomb. fract.	S. E.	Phase
Phenotype								
Het Tl	Het tl	het Tl	het tl	215	11.8	25.4	6.3	R
115	39	58	3					
Met R	Het r	het R	het r	215	13.7	16.9	6.6	R
121	33	60	1					
Tl R	Tl r	tl R	tl r	215	113.9	7.9	1.9	C
169	4	12	30					
Het Wsp	Het wsp	het Wsp	het wsp	215	0.2	51.8	5.0	R
129	25	50	11					
Tl Wsp	Tl wsp	tl Wsp	tl wsp	215	1.9	60.7	5.7	C
141	32	38	4					
Wsp R	Wsp r	wsp R	wsp r	216	2.2	61.6	5.7	C
149	31	33	3					

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