

Pea gene *sym8* affects symbiosis both with *Rhizobium* and with endomycorrhizal fungi

Kolycheva, A.N., Jakobi, L.M.,
Borisov, A.Y. *, Filatov, A.A.,
Tikhonovich, LA, and
Muromtsev, G.S.

Research Institute for Agricultural Microbiology,
Podbelsky Chosse 3, St. Petersburg-Pushkin 8,
189620, Russia

Among the legume symbiotic mutations there are some which prevent not only nodule formation but also the establishment of the vesicular-arbuscular endomycorrhizal (VAM) associations in roots (2, 3). These results indicate the existence of common points in the genetic control of these two kinds of symbiosis. Thus new *sym* mutants should be evaluated for their effect on VAM symbiosis.

Several Nod⁻ and Fix⁻ mutants were used in our study. Mutants E2 (few or no nodules, *sym5*), R25 (Nod⁻, *sym8*) and E135f (Fix⁻, *sym13*) were isolated by mutagenesis from cv. Sparkle and kindly provided by Dr. T.A. LaRue (Boyce Thompson Institute for Plant Research, Ithaca, USA) (5). Mutants Sprint-2Nod⁻-2 (Nod⁻, *sym8*) and Sprint-2Fix⁻ (Fix⁻) were obtained after chemical (EMS) mutagenesis of the line Sprint-2 (1).

These mutants were evaluated for their ability to establish VAM. All the mutants, as well as the control lines (Sparkle and Sprint-2), were inoculated with *Glomus mosseae* (4).

The control lines and mutants E2, E135f, and Sprint-2Fix⁻ expressed a typical VAM. Both mutants at locus *sym8* (R25 and Sprint-2Nod⁻-2) showed an inability to complete establishment of VAM which was blocked at an early stage during the time interval corresponding to the apressorium formation.

These results suggest that the mutations at the *sym8* locus affect both nodule development and the establishment of vesicular-arbuscular endomycorrhiza. The development of both symbiotic processes has a common point controlled by the *sym8* gene.

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