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Czech J. Genet. Plant Breed.

Inflorescence blast and flower bud abnormalities of *Spiraea* × *vanhouttei* and their causes

Czech J. Genet. Plant Breed., 43 (2007):
135-143

In ornamental gardening, *Spiraea* × *vanhouttei* is a frequently planted spirea species in the Czech Republic. In 2003, there arose a suspicion of possible occurrence of fire blight caused by *Erwinia amylovora* on spirea shrubs in Prague and its environs. This suspicion was disproved for a certainty. The absence of the fire blight pathogen in symptomatic spirea plants stimulates a further effort to tackle the problem of a cause of conspicuous fire blight-like symptoms or inflorescence blast occurring on some spirea shrubs. The subject of this paper is: (i) to describe symptoms, incidence and severity of inflorescence blast, bud and flower abnormalities occurring in *Spiraea* ×

vanhouttei shrubs; (ii) to find out differences in the occurrence of blasted inflorescences between *Spiraea* species and cultivars with the intention of verifying the hypothesis that the blast inflorescence and sterility of some spirea species are associated with hybrid species.

Symptoms of inflorescence blast are every growing season. No seed is produced by blasted inflorescences.

Besides inflorescence blast, aborted floral buds appeared sporadically on a small scale. Spirea species were split into four categories according to the incidence of blasted inflorescences. Out of 52 species evaluated, 10% showed no or scarce incidence, 52% medium incidence, 27% high incidence and 11% very high incidence. The scarce incidence of blasted inflorescences was connected with the high seed production. And vice versa, very high incidence of blighted inflorescences was closely connected with no or low seed production or with high incidence of sterility. Fifteen out of the evaluated spirea species are the result of hybridization. These hybrids occur in each of the four categories of spirea species distinguished by the

incidence of blasted inflorescence. However, it is remarkable that the highest incidence of hybrid spireas occurs in the category with the highest incidence of blasted inflorescence (83.33%). In the remaining three categories of spirea species, the proportion of hybrids ranged from 18 to 21%. It might indicate some connection of spirea hybrids with sterility.

Keywords:

Vanhoutte spirea; hybrids; inflorescence blast; flower bud abnormalities, sterility

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