

WRITTEN FINDINGS OF THE  
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD

Scientific Name: Gypsophila paniculata L.

Common Name: Baby's Breath

Legal Status: Class C

Description and Variation: A much-branched perennial herb up to 0.75m in height. The stems are erect or ascending at the base, single to many in number; the leaves opposite, lanceolate to linear-lanceolate, and covered with a dense bloom of hairs on both sides. An inflorescence of white flowers panicle-like. Seeds are black and 1.5-2.0mm long. As an adventive species, appears morphologically quite uniform. In Europe there are variations in plant pubescence and flower size.

Economic Importance: (a) Detrimental - It is a weed problem in submarginal, sandy farmlands with introduced perennial grasses or where the native grasses have been disturbed. It also is a problem in vacant lots and along fencelines where the weeds create an untidy appearance. The plant can reduce the crude protein content of hay in fields it infests. (b) Beneficial - The plant is used extensively by the flower industry in bouquets and as an ornamental. In Europe, the root is used for its saponin content. Livestock are known to graze the weed.

Geographical Distribution: Occurs in east and central Europe and from Asiatic USSR to western China. It is an adventive species in western Europe and between the latitudes 40° and 60° in North America.

Habitat: (a) Climatic requirements - can withstand considerable variation in both temperature and moisture. It occurs in areas where the mean number of degree days above 5.5 C range between 832 and 2,220 and the mean annual precipitation ranges between 25 and 112 cm. As an adventive species, it is most aggressive in areas of low rainfall. (b) Substratum - can grow in both fine and coarse-textured soils, but is most aggressive on the latter. Fine-textured soils retard root development. (c) Communities in which the species occurs - the weed grows in a wide variety of habitats. It occurs in lightly grazed pastures, roadside ditches, hay fields, and in abandoned fields.

History: Was probably first introduced into North America as a garden ornamental in the late 1800's. It is now widespread across Canada and the northern United States.

Growth and Development: The plant at maturity has a thick, deep-penetrating root system which allows it to survive in arid conditions. The plant survives by a persistent root system. The overwintering roots, with abundant food reserves, give rise to new

*Gypsophila paniculata* (cont.)

shoots from the caudex in the spring. The first shoots appear in late April. Lateral branches develop on the shoots in early May. The plants appear leafy at this stage. Flower buds appear in early June and occur in clusters. Buds break from early July into August. Fruits begin to form in mid-July and mature and split open by late July. Seedlings emerge in early May. The seedlings attain an average height of 6 cm after six weeks of growth. Only one shoot (with no lateral branches) develops per plant during the first year. The shoots remain green until killed by frost in the fall. Root growth during the first two years of growth is rapid. Flowers do not appear until the third growth year.

Reproduction: The mode of pollination is unknown. The floral structure suggests cross-pollination. A single plant averages 13,700 seeds. Wind appears to be the most important dispersal agent. Most seeds drop to the ground near the parent plant, but if the seed capsules do not open completely, seeds may be carried lengthy distances before being dropped. Seeds show little or no dormancy. Maximum germination occurs between 10° and 28° C. Soil texture, as well as seed depth, influence germination. Ideal conditions are a .25 cm depth in sandy soil; deeper planting or coarser soil reduce germination. The only type of vegetative reproduction observed is an increase in the number of shoots per plant associated with an increase in caudex diameter.

Hybrids: Under normal conditions no hybrids have been reported.

Population Dynamics: The weed is able to invade and compete with other species in a number of habitats. The life span of the plant is unknown. Once established, plants probably are long-lived. Mortality is high amongst immature plants. The greatest density of plants usually occurs on protected slopes and in ravines where the supply of moisture and opportunity to trap mature tumbling seed-bearing plants is greatest.

Response to Herbicides: The weed is susceptible to dicamba at 2.24 kg/ha or more and picloram at 1.12 kg/ha or more. Fenoprop at 1.57 kg/ha and mecoprop at 7.73 kg/ha also provide good control.

Response to Other Human Manipulations: Heavy and continuous grazing can suppress the growth of mature plants and prevent seedling establishment. The plant's vigor is little reduced by mowing or clipping or by light or infrequent grazing. Abandoned cultivated soils increased the density as well as standing crop biomass. Annual cultivation at a depth which severs the caudex from the root is very effective.

Response to Parasites: See Darwent 1975 for a listing of attacking organisms.

References: Darwent, A.L. 1975. The Biology of Canadian Weeds. 14. *Gypsophila paniculata* L. Can. J. Plant Sci. 55:1049-58

Darwent, A.L. and R.T. Coupland. 1966. Life History of *Gypsophila paniculata*. Weeds 14:313-18