

**WRITTEN FINDINGS OF THE  
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD**  
(Updated December 1999)

Scientific Name:        *Crupina vulgaris* Cass.

Common Name:        Common crupina

Family:                    Compositae (Asteraceae)

Legal Status:    Class A in Washington; also on Federal Noxious Weed List

Description and Variation: Common crupina is an erect winter annual, 1 to 3 feet tall. Cotyledons are large, thick, shiny and dark green, with a prominent mid-rib that may be purple to red. The species overwinters as a rosette. Plants have alternate leaves that are finely divided into lace-like leaflets (pinnatifid or bipinnatifid). Both the leaves and stem have short stiff spines. Flowers are lavender to purple and grow in ½-inch long heads. Each plant can have as many as 40 flowering heads; individual heads produce 1 to 5 seeds. Flowers partially protrude through a whorl of bracts. Seeds (achenes) are 1/8 to ¼ inch long, and are cylindrical, tapering to a blunt end. The seed coat is covered with tiny hairs, giving the seeds a black to silvery beige appearance. The apical end of the seed has dark, stiff, barbed hairs (pappus) (Thill et al. 1987).

Two varieties of *Crupina vulgaris* are found in the Pacific Northwest. Washington's infestation is *C. vulgaris* var. *brachypappa*. The infestations found in Idaho, Oregon, and California are *C. vulgaris* var. *typica*. The two varieties can be distinguished by their achenes. Var. *typica* achenes are 4-5 mm long; the longest pappus silk is 7-8 mm. Var. *brachypappa* achenes are 3.5-5.0 mm, with pappus silk of 4-5 mm (Couderc-LeVaillant and Talbott Roche 1993).

Two additional species of *Crupina* are native to Eurasia, but are not known from North America: *C. crupinastrum* and *C. intermedia*. *C. intermedia* is a hybrid of *C. vulgaris* and *C. crupinastrum*. It is larger and more competitive than either parent and has replaced its parents in parts of the Mediterranean region (Couderc-LeVaillant and Talbott Roche 1993).

Economic Importance: *Beneficial:* None known.

*Detrimental:* Adapted to a wide range of soil and climate conditions, common crupina can form solid stands, which decrease forage productivity and livestock carrying capacity (Miller and Thill 1983; Thill et al. 1987). Although it is not toxic, livestock tend to avoid common crupina. The stem and leaf margins develop short, stiff spines as the plant bolts. Therefore, it is only palatable to livestock in the rosette stage (Thill et al. 1987).

Geographical Distribution: Common crupina is native to Eurasia (Thill et al. 1987). In North America, it has been introduced to Idaho, California, Oregon, and Washington. These

introductions represent two different varieties. Washington's infestation is *C. vulgaris* var. *brachypappa*. The infestations found in Idaho, Oregon, and California are *C. vulgaris* var. *typica*. In its native range, *Crupina vulgaris* var. *brachypappa* is known from France, Switzerland, Spain, Greece, and Romania (Couderc-LeVaillant and Talbott Roche 1993).

Washington's lone infestation occurs in the Lake Chelan area, between Prince Creek and Hunts Bluff: T31N, R18E, sections 2, 3, 12, 13; T31N, R19E, sections 18, 19, 29, 30; T32N, R18E, section 28, 33, 34. Of the 480 acres estimated in 1991, 210 acres were private land, 255 acres were in the Lake Chelan Sawtooth Wilderness (Wenatchee National Forest), and 15 acres were on National Forest land outside the wilderness (Ohlson et al. 1991).

Habitat: Common crupina is capable of vegetative growth and reproduction under a wide range of temperature and photoperiod conditions (Patterson and Mortensen 1985). In Idaho, infestations occur mostly in deep canyons on south-facing slopes at elevations of 1000 to 3200 feet. The well-drained, slightly acidic soil is rocky to silt loam. Precipitation in the area is 15-30 inches (Thill et al. 1987).

History: The source and means of crupina's introduction into the U.S. is not known (Couderc-LeVaillant and Talbott Roche 1993). The first North American population was discovered in Idaho in 1969 (Stickney 1972). This initial 40-acre infestation spread to 23,000 acres by 1981 (Thill et al 1987). Washington's infestation was discovered in 1984 by a hiking botanist. Control work began in 1988. Initial efforts focused on hand-pulling along rights-of-way.

Growth and Development: Common crupina is a true annual (Roche et al. 1997b). After dispersal in mid-summer, seeds usually remain dormant until fall rains and cool temperatures. Seedling recruitment through winter is dependent on temperature and moisture near the surface. 1° C is the lower limit of where development starts (Roche et al. 1997a). The warmer temperatures and longer days of spring cause the plant to bolt (Roche et al. 1997b). Plants generally flower during May and June and disperse seed in June and July (Roche et al. 1997a). Seed production decreases with increased plant density. Larger plants compete more successfully and leave more seed (Roche et al. 1997b). Seeds are distributed by moving water, upland game birds, wildlife, and domestic livestock; they are too large to be wind-dispersed (Thill et al. 1987). Seeds can pass through cattle, deer, horses, and Chinese pheasant, but not sheep (Thill et al. 1986).

Reproduction: Common crupina can produce large amounts of viable seed. Typical seed production values have been estimated at 23 seeds/plant and 1000 seeds/m<sup>2</sup>. An estimated 83% of plants reproduce successfully (Zamora et al. 1989a). Estimates of seed germination rates are high, ranging from 85% to 99% (Roche et al. 1997a; Thill et al. 1987; Zamora et al. 1989a). The greatest germination rate occurs at around 10.5° C (Roche et al. 1997a). Common crupina does not have a persistent soil seed bank; seeds survive in the soil for approximately 25-26 months after the last seed production (Zamora and Thill 1989).

Response to Mechanical Control Methods: Since common crupina is an annual plant, hand-pulling or hoeing can be effective. However, these tactics require many visits to find all plants (Zamora et al. 1989b).

Response to Herbicides: Belles et al. (1981) obtained effective control of common crupina with glyphosate, dicamba, and picloram. Treatment timing is important. Residual herbicides should be applied no earlier than June to compensate for emergence of plants in late June (Zamora and Thill 1989). For specific herbicide recommendations, consult the *Pacific Northwest Weed Control Handbook*.

Biocontrol Potentials: Several natural enemies have been identified on common crupina in southern France and are under investigation as possible biological control agents (Sobhian et al. 1996). No biocontrols are currently approved for use in the United States.

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