WRITTEN FINDINGS OF THE WASHINGTON STATE NOXIOUS WEED CONTROL BOARD

Scientific Name: Kochia scoparia L.

Common Name: Kochia

<u>Family:</u> Chenopodiaceae

<u>Legal Status</u>: Class B (a) Skagit and Whatcom Counties of region 2.

- (b) Pend Oreille County of region 4.
- (c) King County of region 5.
- (d) Kittitas County of region 6.

<u>Description and Variation</u>: Annual, with taproot, reproducing from seeds. Stem are erect, muchbranched, 3-7 ft. tall, smooth but usually hairy above. Leaves are alternate, simple, pubescent to nearly glabrous, 1-2 inches long, lanceolate to linear with hairy margins, without petioles. The flowers are small, green, without petals, and found in clusters in the axils of upper leaves and in terminal spikes. Seeds are about 1/16 inch long, brown, flattened, and grooved on each side.

<u>Economic Importance</u>: *Detrimental* - In the Great Plains, where kochia is widespread, it is considered a serious pest of late-maturing crops such as sorghum, soybeans, and sugarbeets. It is also a problem in the fallow portion of the cereal-fallow systems. Kochia is an effective competitor for light, nutrients, and soil moisture and can reduce yield. There is a high variation in the flowering time of populations of kochia. Early populations can become a problem in cool-seasoned cereal crops. Montana considers kochia the fourth most important weed affecting cereal production.

Beneficial - Kochia may have value in reclamation of disturbed land and as livestock fodder.

<u>Geographical Distribution</u>: Kochia is native to Eurasia. It is now naturalized across the northern half of the United States and is spreading westward. It occurs in Washington, Oregon, and Idaho and is increasing its distribution in those states.

<u>Habitat</u>: Kochia is highly adaptable. It is very drought tolerant and can spread rapidly in these conditions. It will not flower and set seed if the mean temperature is less than 15.5 C. Kochia has a wide tolerance of soil types and is even adapted to salty soils. It is found on pasture, rangeland, roadsides, ditch banks, wastelands, and cultivated fields.

<u>History</u>: Native to south and eastern Russia, kochia was introduced to North America from Europe. It was grown as an ornamental hedge around gardens, or used as a backdrop planting because of its dense, conical shape and attractive red color in the late fall. It has since escaped cultivation and spread westward.

Growth and Development: Like many other species of the Chenopodiaceae, it becomes a tumble weed when mature. An abscission zone develops at the base of the stem in autumn. When winds reach velocities of 25 mph, the stem breaks and the plants tumble. Kochia overwinters as seeds. The seeds germinate very early in spring because of their frost tolerance. Kochia grows very rapidly through spring and summer and sends down a very long taproot (up to 16 feet). It flowers in late summer and sets seed.

<u>Reproduction</u>: The species typically produces around 14,600 seeds per plant. Seeds are dispersed in the fall when the plant becomes a tumbleweed. The plant tumbles with the wind, dropping seeds as it is blown about. Laboratory studies report germination rates of 76% or better over a temperature range of 39-106 F. Seeds buried in the soil have 5% viability after one year and 0% after two years. Kochia reproduces by seed only.

<u>Population Dynamics</u>: Kochia is able to spread long distances very rapidly. Its ability to tolerate drought also enables it to spread quickly. It was considered a rare plant in North Dakota and Kansas in the late 1920's, but with the drought during the 1930's it became abundant.

<u>Response to Herbicides</u>: Infestations of triazine resistant kochia has been found along railroad lines in eleven states. Research has shown that triazine resistant biotypes were more susceptible to 2,4-D ester than triazine susceptible biotypes. There are also biotypes resistant to 2,4-D or Banvel (dicamba). It is suggested that rotating herbicides would reduce the possibility of an increase in the proportion of plants tolerant to 2,4-D or Banvel.

<u>Response to Cultural Method</u>: Early tillage in the spring gives good control of the seedlings. Mowing or slashing the plants before flowering is effective in reducing seed production.

Biocontrol Potentials: None

References:

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