

# Chinese cabbage seed

*Brassica campestris* (Cruciferae)

## Fast Facts:

Acres in Washington:	less than 50 acres
Per Acre Value:	\$1,000-\$2,000
Value of Production in Washington:	\$50,000-\$100,000
Number of Growers:	less than 5

## Description Of Crop:

Most, if not all U.S. Chinese cabbage seed production is located in Washington. Chinese cabbage seed is a direct-seeded annual that is planted in March or April and harvested in August or September. Approximately 80 percent of the acreage is hybrid seed. The crop is hand-hoed to remove weeds and rogued to remove plants not displaying true varietal characteristics. At harvest, the crop is cut, windrowed and dried in the field for 10 to 14 days. After drying, the crop is threshed and the seed is sent to a conditioning plant, where it is cleaned to 99 percent purity.

## Key pests:

In eastern Washington, cabbage maggot is the most severe pest. Other insect pests include sugar beet leafhopper, cabbage aphid, turnip aphid, loopers and cutworms. Weed pests include nightshades, pigweeds, lambsquarter, wild buckwheat, volunteer crops, foxtail and barnyard grass. Weeds are serious pests due to two issues. The seeds that the weeds produce are often very difficult to sort out of the seed crop. If the contaminating seeds are too costly or impossible to sort out, the seed crop is considerably lowered in value or rendered unmarketable. Sclerotinia is the only disease of the crop. Pest problems in western Washington are more extensive. Cabbage aphid, turnip aphid, seedpod weevil and cabbage maggot are severe pests. Other insect pests include cabbage looper, springtails, webworms, diamondback moth, cutworms, symphylans and wireworms. Weed pests include shepherdspurse, mustards, lambsquarter, pigweeds, smartweed, henbit, groundsel, chickweed, wild turnip, quackgrass, wild oat, Canada thistle, bolt thistle, vetch, nightshades and bed straw. Shepherdspurse, groundsel and henbit are the more problematic weeds. The most serious diseases are powdery mildew, Alternaria, and Sclerotinia. Additional diseases are caused by Cladosporium, Fusarium, Rhizoctonia, Stemphyllium, Pythium, and Phytophthora.

## Key pesticides:

In eastern Washington disulfoton, acephate, malathion and diazinon control aphids. Cabbage maggot is controlled with Lorsban before

planting, and sugar beet leafhopper is controlled with Asana. In western Washington, Lorsban and Ambush/Pounce are used for insect control and broadleaf weeds. Fusilade is applied occasionally after harvest to control grasses. Hoeing supplements weed control. Growers concentrate on longer crop rotation periods and increased sanitation practices to reduce pathogen build up in the soil. Iprodione is applied to control Alternaria and Sclerotinia. Ridomil controls downy mildew, Pythium and Phytophthora, and chlorothalonil is used for general disease control. Copper hydroxide is applied also to prevent disease.

**Critical pest**

**Control issues:**

Fusarium wilt has no control at this time. There has been not chemical that has replaced Benlate. The loss of dimethoate was significant. Mitigation to comply with urbanization, salmon and water buffer issues are expensive. Efficacious herbicides are critical for seed production. Weeds not only compete with the seed crop but act as host for insects and diseases. Weed seeds if they cannot be easily sorted out from the seed crop will cause the value of the seed crop to drop or even cause the crop to be unmarketable.

**Expert contacts:**

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Chinese cabbage seed is grown in Grant and Adams counties and in the Skagit County.

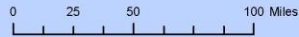


Chinese Cabbage  
(Photo courtesy of AVRDC)

## Chinese Cabbage Seed Production in Washington State



Deborah Bahs - April 2007



### Counties Producing Chinese Cabbage Seed\*

\* Includes only those counties with significant crops acres.  
The crop may also be produced in counties not highlighted on the map.