

# Kochia, Fireweed, Summer Cypress

## *Kochia scoparia* (L.) Schrad.

**Life History/Identification:** Kochia is an annual herb that reproduces exclusively from seed. The main means of dispersal is by “tumble weed” action. The plant was originally introduced into the U.S. from Europe as an ornamental, and has been used in reclamation projects. It has since escaped cultivation and occurs widely in cultivated fields and waste areas throughout the country. Kochia is a member of the Goosefoot family, Chenopodiaceae. It has alternate, simple leaves, which are covered with hairs. The flowers are small, greenish, have no petals, are inconspicuous and tend to occur in the leaf axils. Kochia geminates from seed in the early spring and the seedlings tolerate frost. The plant is drought tolerant and salt tolerant, allowing it to spread into dry areas. The plants have deep taproots allowing them to find soil moisture unavailable to other plants.

**Status:** Kochia is not recognized as a noxious weed in Arizona. It is not recognized as a noxious weed on the Coconino, Kaibab and Prescott National Forests.

**Impacts:** Kochia is regularly grazed by animals, but may contain high amounts of nitrate if it grows under certain conditions and can be poisonous to grazing animals. The plant also contains saponins, alkaloids and oxalates. These compounds may cause photosensitivity, toxic nephrosis or toxic hepatitis. Although the plant is potentially toxic, it can provide adequate nutrition for most kinds of livestock. Wildlife such as deer and black-tailed prairie dogs are known to feed on the plant.

**Northern Arizona Localities:** This plant has been observed in old fields in the area northeast of Flagstaff and in the Verde Valley. It is unknown how widely distributed this plant is. Given the wide tolerance of environmental variables this species can endure, it probably occurs elsewhere within the area and may be present on the lands administered by the Coconino, Kaibab and Prescott National Forests. There have been no survey efforts conducted to document the distribution of this plant in Northern Arizona.

### **Control:**

#### **1. Cultural Control:**

Kochia appears in disturbed areas and cultivated fields. Disturbance seems to be a key factor in allowing this plant to become established in new areas. This factor should be considered when planning any activities in areas where infestations have the potential to spread.

#### **2. Mechanical Control:**

**Tilling** can be used to control Kochia plants in cultivated fields. Kochia seeds do not withstand burial. Many of the seeds lose their viability when buried in the soil. Regular tilling decreases the population substantially. This method may be useful in agricultural areas, but is not practical in forested areas.

**Mowing** can be used to control Kochia in pastures. Mowing should be done periodically to prevent seed formation.

**Crop rotation** and planting crops such as alfalfa can help control Kochia through plant competition. This method would not be useful on National Forest lands. It would require the introduction of one exotic to control another.

No information on controlling kochia with **fire** was found. Kochia is an offsite colonizer and can occupy a fire site through “tumble weed” dispersal of seeds.

**3. Chemical Control:** *Noted here are chemical control techniques in use in other areas. Always check with weed specialists or chemical suppliers to ensure correct dosage and application. Mention of these products does not imply endorsement by the Northern Arizona Weed Council, San Francisco Peaks Weed Management Area, the USDA Forest Service, nor the Nature Conservancy. Currently the use of herbicides is not allowed on lands administered by the Coconino, Kaibab and Prescott National Forests. Always check with your local land manager before using herbicides on public lands..*

Herbicides that can be used to control kochia include Atrazine, cyanazine, dicamba, diuron, EPTC, fluometuron, pendimethalin, simazine, trifluralin and terbacil (Lorenzi). All of these herbicides are labeled as effective in the control of kochia. However, not all of them may be appropriate for use in wildland settings. Always check to see if the herbicide you choose is approved for use in you area. Most states require registration of herbicides approved for use within the state. Never use any herbicide on public lands without consulting the land manager responsible for the area.

**4. Biological Control:**

There is currently no biological control agent approved for use on *Kochia scoparia*.

**5. Integrated Control:**

**Cultivation and herbicide treatment** have been used in combination for treatment of kochia in agricultural fields.

**Note: No single control method, or any one-year treatment program, will ever achieve effective control of an area infested with kochia. The fast growth, high seed viability, and effective dispersal systems of this plant require long-term cooperative integrated management programs and planning in order to contain and reduce kochia infestations.**

**References:**

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