

Dodder (*Cuscuta*)

Identification

Dodder (*Cuscuta sp.*) is a parasitic plant, meaning that it uses nutrients from other plants. Three types of dodder are common in Afghanistan. Two types of dodder, *Cuscuta europaea* and *Cuscuta campestris*, affect vegetable crops (tomato, potato, eggplant, carrot, onion, etc.), legumes (chickpea, pigeon pea, fava, soy, etc.), and weeds. The third type (*Cuscuta reflexa*) is larger and mostly affects trees and shrubs. Cereals crops and other grasses are not affected by dodder. Dodder has twining stems that range from pale green to bright orange. Leaves look like small scales. Flowers are cream-colored and bell-shaped.



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Dodder on tomato

Life Cycle

Seeds that are within 5cm of the soil surface will sprout at temperatures above 10C. Dodder seedlings search for a host plant with their twines soon after sprouting, and prefer plants with higher chlorophyll content (darker green leaves). A small root supports the plant until it attaches to a host, after which the root is dropped. If dodder doesn't find a host within 5-10 days it will die. As dodder grows, it continually reattaches to the host and other plants nearby, forming a dense mat of intertwined stems. Affected crops have reduced strength and little or no seed and fruit development. Dodder typically has a one-year life cycle, but it can live multiple years on a perennial host and even regrow stems killed by winter frost. Each dodder plant may produce thousands of seeds. Seed production is highest in late summer and fall. Only about 5% of seeds germinate the year following their production, but seeds remain alive in the soil for more than 20 years.. The regional spread of dodder is limited by grasslands and areas with sparse vegetation.

Prevention and Control

Prevention

Use good quality, pure crop seed to prevent introducing dodder. Since dodder seed is rough, it can be separated from smooth crop seeds by using seed cleaners (felt or velvet covered rollers).

Cultural Control

Include cereals in the crop rotation cycle. Deep shade suppresses dodder attachment to hosts, so plant crops closer together to encourage a dense crop canopy. If the field is free of potential host plants, pre-irrigate about 2 weeks before crop planting to encourage dodder germination, and leave the seedlings on the soil surface to die. Dodder seed is heat resistant and can survive soil solarization and flame.

Mechanical Control

Destroy young seedlings with roots with shallow tillage before or after planting the crop; avoid deep tillage that could bring deeply buried seeds near the surface. Scattered infestations can be controlled by hand-pulling (trim the host plant below the point of attachment as well) or controlled flame. Dodder can survive for several days after being detached from the host, and regrowth can occur from stem fragments that are detached from the plant, so it is important to remove hand-pulled dodder from the field to avoid reattachment to a new host. Mowing or sheep grazing below the point of dodder attachment can control dodder in legumes.

Chemical Control

At this time no herbicide available in Afghanistan is known to be effective against dodder.