

Japanese Dodder Detection and Treatment

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Japanese dodder, *Cuscuta japonica* is listed as both a California and federal noxious weed, and as such is subject to eradication when found in the state. In California, *C. japonica* seed was initially detected at a retail business in Redding, in 2004. The confiscated seed was not sterile and was destroyed under USDA, (United States Department of Agriculture) authority. Subsequent to this interception, in June 2004, a specimen of dodder from Shasta County was submitted to the California Department of Food and Agriculture (CDFA), Botany Laboratory. This specimen was tentatively identified as *C. relfexa*, giant dodder, a closely related noxious weed, also from the eastern Asian seaboard. Each of these weeds belongs to a group of dodders known as 'giant dodder' because of their robust stems, unlike other dodders that are thin stemmed. In October 2005 a specimen from Shasta County, growing on citrus was submitted to the CDFA Botany Laboratory. This specimen had well-developed flowers and was positively identified as *C. japonica*. Subsequent surveys found no other infested properties. The infested citrus tree was removed and disposed at an approved landfill. In the spring of 2005, the initial residential site was re-inspected for evidence of any return of the dodder. As no evidence of the plant was found, it is thought that it succumbed to winter temperatures since this is not a cold tolerant species.

In its native range, Japanese dodder is an annual parasitic plant that uses specialized roots called haustoria that allow the plant to obtain water and nutrients from its host. *C. japonica* can infect a wide variety of hosts. In its native tropical range it grows, sets seed, and dies in a single season. Japanese dodder plants are robust, rapidly growing plants that can survive for prolonged periods without a host. In addition to its wide host range, some cultivation by certain ethnic groups is possible. Flowering of *C. japonica* has been observed in California, but seed production has not. Seeds pose an extreme threat to California as they can live in excess of 20 years. In California it is unknown if the plant will adapt and establish in the varying climates found in the state. In late 2005, the CDFA decided to survey areas in the state where Japanese dodder was likely to occur. These surveys detected one site in Los Angeles County. In 2006, a sharp increase of *C. japonica* sites were detected throughout. Emergency funds were made available and the Japanese Dodder Survey and Eradication Protocol was developed. The six components of the protocol are detection, eradication, post-treatment monitoring, outreach and education, and regulatory.

Annual detection surveys begin in spring and last through late fall. Each of the fifty-eight counties in California is assigned a 'Tier' based on likelihood of harboring infestations of *C. japonica*. Tier I is "highest risk," Tier II is "moderate risk," and the remaining counties are either infested or determined to be unsuitable for establishment of *C. japonica*. Each of the Tier I counties and a majority of the moderate risk counties were surveyed by CDFA crews in 2007. Over 20,000 net miles comprising 4.8 million primarily urban and some rural residential properties were surveyed for the presence of Japanese dodder in 2007, only one site was found infested. In January 2007, almost the entirety of the state experienced a prolonged period of below freezing temperatures. This event appears to have decimated existing infestations of

Japanese dodder in most areas and, decreased the viability of other infested sites, except in some coastal environments.

Currently 206 infested sites in 14 counties have been detected and treated. The primary method of ‘treating’ infested sites is total host removal or severe pruning to eliminate infested material. Post-treatment monitoring occurs on a regular basis, with eradication declared after two years. CDFA will continue its outreach and education efforts and enlist the public’s assistance in locating previously undetected sites.