



The Connecticut Agricultural Experiment Station
Putting Science to Work for Society since 1875

123 Huntington Street
New Haven, CT 06511
Phone: (203) 974-8481
Fax: (203) 974-8502

caes@ct.gov
<https://portal.ct.gov/caes>

JUJUBE WITCHES' BROOM (*Candidatus Phytoplasma ziziphi*)

Jujube witches' broom (JWB) is a pathogen that can cause disease in plants such as, but not limited to, jujube, alfalfa, apple, apricot, peach, and cherry. In countries where it is established, it has caused severe economic loss due to reduction in fruit production.

Symptoms of JWB vary depending on the host. Symptoms in peach include leaf scorch, leaf yellowing, and leaf rolling, premature fruit drying and dropping, and tree decline and death. In apples, it can cause yellowing, small leaves, and leaf margins rolling up. In other plants such as cherry it can cause a witches' broom formation. These symptoms can resemble those caused by other pathogens and environmental factors. Molecular analysis is needed to differentiate JWB from other phytoplasmas.

JWS can be spread over long distances when infected plant material is transported to a new area. The plant material may be asymptomatic which prevents detection. Local spread occurs through insects infected by the pathogen.

JWS may be able to establish in plant hardiness zones 4-11. Orchards of apple, peach, apricot, plum, and cherry in the United States may be vulnerable to infection if the pathogen were allowed to become established. Prevention of the movement of infected plants and early detection is key to preventing its spread.

Monitoring for the presence of JWS is part of the 2024 and 2025 CAPS survey. Symptomatic plants may be taken for further testing.



Figure 1. Symptoms due to '*Ca. P. ziziphi*' infection include: tree yellowing, stunting, and decline (A); Witches' broom of shoots (B); dense root suckers (C); lack of defoliation in the winter (D) on jujube. Photos A and B are from Chen et al. (Chen et al., 2022), used under the terms of the [Creative Commons Attribution License](#); photos C and D are courtesy of Dr. Zhao (Agricultural University of Hebei) (Zhao et al., 2019).