

## California Pest Rating Profile for

### Rice hoja blanca virus white leaf disease of rice

**Pest Rating: A**

Realm: Riboviria, Kingdom: Orthornavirae, Phylum:  
Negarnaviricota, Class: Bunyaviricetes, Order:  
Hareavirales, Family: Phenuiviridae, Genus:  
Tenuivirus

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**Comment Period: 04/16/2026 through 05/31/2026**

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#### Initiating Event:

This pathogen has not been through the pest rating process. The risk to California from rice hoja blanca virus is described herein, and a permanent rating is proposed.

#### History & Status:

##### Background:

Rice is grown on approximately 500,000 acres in California. Production is concentrated in the Sacramento Valley, where approximately 95% of California rice is grown, with the balance in a few counties of the northern San Joaquin Valley. The total value of rice production in 2023 was just short of \$1B ([CDFFA Ag Statistics](#)). California rice production yields can exceed 10,000 lbs./acre, which is 20% above the U.S. average for rice. Over 90% of the rice acreage in California is planted to medium grain varieties, with limited area planted to short and long grain varieties. California is unique among the U.S. rice-producing states in its geography, climate, and environmental regulations. The growing season is characterized by a Mediterranean climate with negligible rainfall, high solar radiation, and relatively cold night-time temperatures.

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Hoja blanca (white leaf) disease in rice was first documented in 1935 in the Cauca Valley of Colombia, described as a devastating, widespread disease causing chlorotic to completely bleached leaves, severe stunting, and (in some cases) plant death (Garces-Orejuela et al., 1958). Since then, it has spread across countries in South and Central America. Epidemics of RHB occur sporadically, but with catastrophic results, where yield losses reaching up to 75% have been reported (Morales and Jennings, 2010). In the United States, hoja blanca was first reported in Florida in 1957 (Atkins and Adair 1957), in Mississippi in 1958, and in Louisiana in 1959 (Atkins 1966), but it had disappeared from the United States by the mid-1960s.

The disease is caused by the rice hoja blanca virus (RHBV), a member of the genus *Tenuivirus* that is transmitted by the rice delphacid *Tagosodes orizicolus* (Muir) (Homoptera: Delphacidae). There are no records of either RHBV or *T. orizicolus* in California, but both are in Texas, where reports of the disease and yield losses have recently been published (Khanal and Zhou, 2025).

*Hosts:* *Avena abyssinica* (Ethiopian oat), *A. sativa* (oat), *Echinochloa colona* (junglerice), *Hordeum vulgare* (barley), *Oryza sativa* (rice), *Secale cereale* (rye), *Triticum* (wheat), *T. sphaerococcum* (dwarf wheat), *T. turgidum* subsp. *durum* (durum wheat) (CABI, 2026).

*Symptoms:* The symptoms of hoja blanca can be different depending on the specific rice cultivar and the age of the plant upon infection. Plant tissues that are already mature when infected remain symptomless, while immature tissues display a variety of symptoms. Approximately 4 days after infection, cream-colored spots ranging in size from 2–5 millimeters appear on immature leaves. As they mature, infected leaves become chlorotic and the spots expand, giving affected leaves a white appearance. RHBV infection is systemic to the plant, and subsequent leaves will emerge lacking in green color. Tillers infected by RHBV will be stunted compared to normal, non-infected tillers. The panicles of infected tillers may be sterile and often have malformed or discolored grains. Root size and number will reduce, with the roots eventually turning brown and dying completely (CABI, 2026).

*Transmission:* The planthopper *T. orizicolus* is both a host and vector of RHBV (Galvez et al. 1961). After the virus is acquired through feeding on infected plants, there is a period of 17–22 days of viral propagation before the planthopper becomes viruliferous (Galvez 1968). There is a high rate of trans-ovarian transmission to the progeny, and the nymphs can transmit the virus soon after they hatch from eggs. RHBV causes symptoms in its insect vector, infecting various organs and glands in the planthopper. Viruliferous insects laid only one-third as many eggs and hatched fewer nymphs than did virus-free insects. The survival of nymphs and the lifespan of adults were also reduced (Jennings and Pineda, 1971). In addition, even in the absence of hoja blanca, *T. orizicolus* can cause severe direct feeding damage (hopperburn) to rice (Morales and Jennings, 2010). RHBV is not seedborne or seed-transmitted (CABI, 2026).

*Damage Potential:* RHBV causes sporadic epidemics in rice (Morales and Niessen, 1985). Although it is often found as isolated infected plants in rice fields, when epidemics occur, significant yield losses of up to 100% have been reported (Jennings, 1963; Vargas, 1985).

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**Worldwide Distribution:** North America: *Belize, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Panama, Puerto Rico, Trinidad and Tobago, United States (Florida, Louisiana, Mississippi, Texas)*. South America: *Argentina, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela* (CABI, 2026).

**Official Control:** RHBV is on the EPPOs A1 list for the African Phytosanitary Program and Bahrain, the A2 list for the Pacific Plant Protection Organization, and a quarantine pest for Mexico. It is on the USDA-PCIT's harmful organism list for Cambodia, Guatemala, Hong Kong, Japan, Madagascar, Mexico, Oman, the Republic of North Macedonia, Taiwan, Thailand, and the United Arab Emirates (USDA PCIT, 2026).

**California Distribution:** none

**California Interceptions:** none

The risk that rice hoja blanca virus would pose to California is evaluated below.

### Consequences of Introduction:

- 1) Climate/Host Interaction:** Rice hoja blanca virus (RHBV) thrives in tropical and sub-tropical climates, requiring warm temperatures and high humidity for the survival and reproduction of rice delphacids. In California, rice is grown in northern areas, which may limit the ability of the vector to establish.

Evaluate if the pest would have suitable hosts and climate to establish in California.

**Score: 2**

- Low (1) Not likely to establish in California; or likely to establish in very limited areas.
- **Medium (2) may be able to be established in a larger but limited part of California.**
- High (3) likely to establish a widespread distribution in California.

- 2) Known Pest Host Range:** The primary plant host for this virus is rice, but its plant host range is broadly restricted to the family Gramineae (Poaceae). Its primary insect host and biological vector is the rice planthopper, *Tagosodes orizicolus*.

Evaluate the host range of the pest.

**Score: 1**

- **Low (1) has a very limited host range.**
- Medium (2) has a moderate host range.
- High (3) has a wide host range.

- 3) Pest Reproductive Potential:** This pathogen can reproduce in its host plants and vectors that can fly, and there is transmission between generations in the host, but it is not seed-borne.

Evaluate the natural and artificial dispersal potential of the pest.

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**Score: 3**

- Low (1) does not have high reproductive or dispersal potential.
- Medium (2) has either high reproductive or dispersal potential.
- **High (3) has both high reproduction and dispersal potential.**

- 4) **Economic Impact:** This disease lowers yield, sometimes drastically, it is spread by a plant feeding insect, and it is a quarantine pest for some trading partners.

Evaluate the economic impact of the pest on California using the criteria below.

**Economic Impact: A, C, E**

- A. **The pest could lower crop yield.**
- B. The pest could lower crop value (including increasing crop production costs).
- C. **The pest could trigger the loss of markets (including quarantines).**
- D. The pest could negatively change normal cultural practices.
- E. **The pest can vector, or is vectored, by another pestiferous organism.**
- F. The organism is injurious or poisonous to agriculturally important animals.
- G. The organism can interfere with the delivery or supply of water for agricultural uses.

**Economic Impact Score: 3**

- Low (1) causes 0 or 1 of these impacts.
- Medium (2) causes 2 of these impacts.
- **High (3) causes 3 or more of these impacts.**

- 5) **Environmental Impact:** Controlling the vector with insecticides to reduce disease spread could be necessary.

Evaluate the environmental impact of the pest on California using the criteria below.

**Environmental Impact: D**

- A. The pest could have a significant environmental impact such as lowering biodiversity, disrupting natural communities, or changing ecosystem processes.
- B. The pest could directly affect threatened or endangered species.
- C. The pest could impact threatened or endangered species by disrupting critical habitats.
- D. **The pest could trigger additional official or private treatment programs.**
- E. The pest significantly impacts cultural practices, home/urban gardening, or ornamental plantings.

**Environmental Impact Score: 2**

- Low (1) causes none of the above to occur.
- **Medium (2) causes one of the above to occur.**
- High (3) causes two or more of the above to occur.

**Consequences of Introduction to California for rice hoja blanca virus: Medium**

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Add up the total score and include it here. **11**

-Low = 5-8 points

**-Medium = 9-12 points**

-High = 13-15 points

- 6) Post-Entry Distribution and Survey Information:** Evaluate the known distribution in California. Only official records identified by a taxonomic expert and supported by voucher specimens deposited in natural history collections should be considered. Pest incursions that have been eradicated, are under eradication or have been delimited with no further detections should not be included.

***Evaluation is 'not established'.***

**Score: 0**

**-Not established (0) Pest never detected in California or known only from incursions.**

-Low (-1) Pest has a localized distribution in California or is established in one suitable climate/host area (region).

-Medium (-2) Pest is widespread in California but not fully established in the endangered area, or pest is established in two contiguous suitable climate/host areas.

-High (-3) Pest has fully established in the endangered area, or pest is reported in more than two contiguous or non-contiguous suitable climate/host areas.

- 7) The final score is** the consequence of the introduction score minus the post-entry distribution and survey information score: (Score)

***Final Score: Score of Consequences of Introduction – Score of Post Entry Distribution and Survey Information = 11***

### **Uncertainty:**

There is a pest rating proposal in progress for *Tagosodes orizicolus*. If it receives an A rating, this will help keep RHBV out of California.

### **Conclusion and Rating Justification:**

Based on the evidence provided above, the proposed rating for **rice hoyá blanca virus is A.**

### **References:**

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Morales, F.J., and Niessen, A.I., 1985. Rice hoja blanca virus. *AAB Descriptions of Plant Viruses*, No. 299. Wellesbourne, UK: Association of Applied Biology, 4 pp.

Morales, F.J. and Jennings, P.R., 2010. Rice hoja blanca: a complex plant-virus-vector pathosystem. *CABI Reviews*, (2010), pp.1-16.

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### **Responsible Party:**

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**\*Comment Period: 04/16/2026 through 05/31/2026**

### **\*NOTE:**

You must be registered and logged in to post a comment. If you have registered and have not received the registration confirmation, please contact us at [permits\[@\]cdfa.ca.gov](mailto:permits[@]cdfa.ca.gov).

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## **Comment Format:**

- ❖ Comments should refer to the appropriate California Pest Rating Proposal Form subsection(s) being commented on, as shown below.

### **Example Comment:**

Consequences of Introduction: 1. Climate/Host Interaction: [Your comment that relates to “Climate/Host Interaction” here.]

- ❖ Posted comments will not be able to be viewed immediately.
  - ❖ Comments may not be posted if they:
    - Contain inappropriate language which is not germane to the pest rating proposal;
    - Contains defamatory, false, inaccurate, abusive, obscene, pornographic, sexually oriented, threatening, racially offensive, discriminatory or illegal material;
    - Violates agency regulations prohibiting sexual harassment or other forms of discrimination;
    - Violates agency regulations prohibiting workplace violence, including threats.
  - ❖ Comments may be edited prior to posting to ensure they are entirely germane.
  - ❖ Posted comments shall be those which have been approved in content and posted to the website to be viewed, not just submitted.
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## **Pest Rating: A**

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