

California Pest Rating Proposal for

Septoria carthami Murashk. 1926

Septoria leaf spot of safflower

Current Pest Rating: none

Proposed Pest Rating: C

Kingdom: Fungi, Phylum: Ascomycota,
Class: Dothideomycetes, Order: Mycosphaerellales,
Family: Mycosphaerellaceae

Comment Period: 07/07/2026 through 08/21/2026

Initiating Event:

This pathogen has not been through the pest rating process. It is an important pathogen for export seed certification for safflowers. The risk to California from *Septoria carthami* is described herein, and a permanent rating is proposed.

History & Status:

Background:

Safflower, *Carthamus tinctorius*, is an annual oilseed crop in the family Asteraceae. It is adapted to dry environments and is grown for edible oil, birdseed, meal, and specialty uses. California has historically produced safflower as a field crop, especially in the Central Valley, where dry summer conditions are generally less favorable for foliar diseases than humid or rainy production regions.

Septoria is a large genus of polyphyletic coelomycetous fungi that includes many leaf-spotting pathogens of herbaceous and woody plants. Many are highly host-specific. Species traditionally placed in *Septoria* produce pycnidia and hyaline, septate conidia, and many are associated with leaf spots, blights, and premature defoliation (Agrios, 2005). The taxonomy of *Septoria* and related genera has changed substantially with the use of molecular data, and many species historically assigned to *Septoria* have been transferred to other genera in Mycosphaerellaceae (Quaedvlieg et al., 2013).

However, *Septoria carthami* is still listed as the preferred name by EPPO and USDA ARS resources (EPPO, 2026; USDA ARS, 2026).

Septoria carthami was described by Murashkinskij in 1926 and is associated with Septoria leaf spot, also called white leaf spot, of safflower (*Carthamus tinctorius*) (Murashkinskij, 1926; Punithalingam, 1980; Dunlap, 1941). The American Phytopathological Society lists *Septoria* leaf spot among the fungal diseases of safflower, although the APS common names list identifies the disease as caused by *Septoria* spp. rather than only *S. carthami* (Klisiewicz, 1993). This broader wording is appropriate because older reports of safflower leaf spots may not have been confirmed with modern diagnostic methods.

Hosts: *Carthamus tinctorius* (safflower) and *Carthamus mareoticus* (Punithalingam, 1980; Farr et al., 2026).

Symptoms: Early symptoms appear as small brownish lesions that enlarge into circular to irregular spots, sometimes reaching approximately 6 mm in diameter (Punithalingam, 1980). Symptoms alone should not be considered diagnostic because safflower is affected by several foliar leaf spot pathogens with overlapping symptoms, including *Alternaria carthami*, *Ramularia carthami*, *Cercospora* spp., and other *Septoria* spp. (Klisiewicz, 1993).

Transmission: Published information on the epidemiology of *S. carthami* is limited. Like other pycnidial leaf spot fungi, it is expected to produce conidia in pycnidia on infected leaf tissue, and local spread is likely favored by splashing water, rain, overhead irrigation, and movement of infected plant debris. There are no primary studies demonstrating seed transmission of *S. carthami* in the literature, and it is not listed as a seed-borne pest by ASTA PeSD (2026). Unless seed transmission is supported by additional evidence, seed should be described as a possible regulatory pathway rather than a proven biological transmission pathway.

Damage Potential: The specific damage potential of *S. carthami* is poorly documented. Leaf spot diseases of safflower can reduce photosynthetic area and may reduce plant vigor, seed yield, or crop quality when severe (Agrios, 2005). Quantitative yield loss data specific to *S. carthami* were not found in the sources reviewed. Because safflowers are grown under relatively dry conditions in California, disease development may be limited in many production areas. However, unusually wet conditions, overhead irrigation, seed production fields, or dense plantings could increase disease risk. Economic impact would likely be greatest if the pathogen affects phytosanitary certification or export markets for California-grown safflower seed.

Worldwide Distribution: Australia, Bulgaria, China, Romania, Russian Federation, United States (Indiana) (Farr et al., 2026).

Official Control: *Septoria carthami* is on the USDA PCIT's harmful organism list for the Republic of Korea (USDA PCIT, 2026).

California Distribution: none

California Interceptions: none

The risk that *Septoria carthami* would pose to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** Safflower is grown in California, especially in dry field production areas. Dry summer conditions may limit the development of foliar leaf spot epidemics, but disease could develop under wet conditions, overhead irrigation, or in seed production fields.

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

Score: 1

- **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 known host range appears limited to safflowers and one other *Carthamus* species.

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:** *Septoria carthami* produces asexual spores on infected leaves. Local spread is likely favored by splashing water and the movement of infected plant debris. A seed pathway is possible for phytosanitary purposes but not confirmed.

Evaluate the natural and artificial dispersal potential of the pest.

Score: 1

- **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:** The pathogen could lower safflower crop value if leaf spot symptoms are severe or if detections affect seed certification or export.

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

Economic Impact: B, C

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: 2

- 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:** The known host range appears limited to nonnative *Carthamus*. No evidence was found that *S. carthami* affects native California plants, threatened or endangered species, natural communities, or critical habitat. It could affect ornamental or small-scale safflower plantings if present.

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

Environmental Impact: E

- 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:

- 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 *Septoria carthami*: Low

Add up the total score and include it here. **7**

- 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 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 = 7

Uncertainty:

The importance of seed as a pathway is uncertain. If seed transmission is confirmed by primary literature or regulatory records, the reproductive potential and economic impact scores may increase because safflower seed is a phytosanitary commodity. Conclusion and Rating Justification:

Based on the evidence provided above, the proposed rating for *Septoria carthami* is **C**.

References:

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Farr, D.F., Rossman, A.Y., and Castlebury, L.A. 2026. United States National Fungal Databases. USDA ARS Mycology and Nematology Genetic Diversity and Biological Laboratory. <https://fungi.ars.usda.gov> Accessed 6/19/26

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USDA Phytosanitary Certificate Issuance and Tracking System, Phytosanitary Export Database (PEXD) Harmful Organisms Database Report. *Septoria carthami*. Accessed 6/19/2026.

Responsible Party:

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***Comment Period: 07/07/2026 through 08/21/2026**

***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).

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.

Proposed Pest Rating: C
