California Pest Rating Profile for

***Lepidium coronopus* (L.) Al-Shehbaz, swinecress, greater swinecress, creeping wartcress**

Family: Brassicaceae

Previous Pest Rating: B

Pest Rating: B as of 04/29/2021

Synonyms: *Coronopus squamatus* (Forssk.) Asch., *Lepidium squamatum* Forssk., *Cochlearia coronopus* L.

Comment Period: 03/15/2021 through 04/29/2021

Initiating Event:
Lepidium coronopus has been assigned a B-rating by the California Department of Food and Agriculture, Plant Health and Pest Prevention Services. The species is designated as a noxious weed as defined by the California Food and Agricultural Code Section 5004 and is listed in Title 3, California Code of Regulations, Section 4500. A pest rating proposal is required to evaluate the current rating and status of the species in California.

History & Status:

Background:
Lepidium coronopus is a low-growing, spreading, annual to biennial herbaceous plant. It produces a single taproot that can reach up to 30 cm in length. It forms a basal rosette of deeply pinnately divided leaves. The leaf blades are approximately 3-15 cm in length, with the lobe margins entire to toothed. Stems are typically branched from the base of the plant, up to 25 to 35 cm long, procumbent to decumbent (Al-Shehbaz, 2012; Bell, 1991). Lower stem leaves are tightly clustered and nearly opposite, while the more distal leaves are clearly alternately arranged (DiTomaso and Healy, 2007). Flowers are small, with 1-2 mm long clawless white petals, and are arranged on very dense racemes that emerge from leaf axils. The indehiscent silicle fruits are laterally flattened and kidney-shaped to ovate-cordate, approximately 2-3.5 mm long by 3-4.5 mm wide (Al-Shehbaz and Gaskin, 2010). The fruit wall is thickened and reticulate and prominently ridged, with a wrinkled and warty appearance as the fruits develop. The two seeds enclosed in the indehiscent fruit are oblong and approximately 1.2-1.6 mm long.

Worldwide Distribution: *Lepidium coronopus* is a plant of open or disturbed habitats, considered to be native in Europe, southwestern Asia and the Caucasus, and north Africa, and is naturalized in Macaronesia (Canary Islands, Madeira, and the Azores), South Africa, North America, South America (Chile), Australia, and New Zealand (Al-Shehbaz and Gaskin, 2010; Bell, 1991; USDA/GRIN, 2020).

The earliest California record of the plant is from the area of Oakland in Alameda County in 1922 (Consortium of California Herbaria, 2020) and the species was also initially introduced into eastern United States seaports (date not specified; Bell, 1991). The species has been reported from Oregon, Texas, Missouri, Louisiana, Alabama, Tennessee, Florida, Pennsylvania, Connecticut, New Jersey, New York, Massachusetts, and the Canadian provinces of Ontario, Quebec, New Brunswick, and Nova Scotia (Al-Shehbaz and Gaskin, 2010; USDA/NRCS PLANTS database, 2020).

Official Control: *Lepidium coronopus* is a noxious weed as defined under California Food and Agricultural Code Section 5004 and listed in Title 3, California Code of Regulations, Section 4500. It is listed as a restricted noxious weed seed under the California Seed Law (California Food and Agriculture Code, Division 18, Chapter 2, Section 52257). Agricultural or vegetable seed lots contaminated with restricted noxious weed seeds are subject to labeling specifications and regulatory action if the number of seeds exceeds established tolerances.

Lepidium coronopus (under the synonym *Coronopus squamatus*) is listed by the state of Arizona as a noxious weed and as a prohibited noxious weed seed (NPB, 2020; USDA/AMS, 2020).

California Distribution: In addition to the 1922 collection from Alameda County, the species has been collected in the San Francisco Bay region and southern California over 50 times from 1956 to 2015, with collections per county as follows: Contra Costa (4), Fresno (1), Imperial (29), Los Angeles (1), Napa (2), Solano (2), Yolo (12) (CalFlora, 2020; CDFA/PDR Database, 2020; Consortium of California Herbaria, 2020).

California Interceptions: No interceptions at border inspection stations have been recorded in the CDFA PDR database (2020).

Consequences of Introduction

1) **Climate/Host Interaction:** Score is **Medium (2)**

In its introduced range, *Lepidium coronopus* occurs in open or disturbed habitats including vegetable crop fields, alfalfa pastures, orchards, gardens, turf, roadsides, and ditch banks, including areas of heavy grazing (Bell et al., 1990; DiTomaso and Healy, 2007). It grows best on heavy, compacted, nutrient-rich soils with periodic moisture availability, and has been recorded growing at elevations up to 300 meters above sea level in California (DiTomaso and Healy, 2007). The species grows well in warm temperatures and is thus well suited to growing in the Imperial Valley of California, with warm winters and fertilized, irrigated soils (Bell et al., 1990).

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

2) **Known Pest Host Range:** Score is **High (3)**

Lepidium coronopus can occur wherever general ecological conditions exist that are conducive to its survival.

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

3) Pest Dispersal Potential: Score is Medium (2)

Lepidium coronopus reproduces only by seed. Observations between 1982 and 1987 of infestations of the species in seed onion fields in the Imperial Valley indicate that swinecress seeds can be dispersed within a field on farm equipment, and between fields via movement of contaminated onion bulbs ("sets") used for propagation (Bell et al., 1990; Bell, 1991). The source of early introductions of the species in the Imperial Valley is believed to be from contaminated onion sets imported from Europe (Bell, 1991).

Evaluate the natural and artificial dispersal potential of the pest.

- 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: Score is **High (3)**

Bell (1991) notes that infestations of the species in the Imperial Valley of California resulted in increased production costs and changes in cultural practices, including the disking-under of contaminated crops and the abandonment of contaminated fields. The species is also reported to be an asymptomatic host of tomato spotted wilt virus in Eurasia (DiTomaso and Healy, 2007).

A. The pest could lower crop yield.
B. The pest could lower crop value (includes increasing crop production costs).
C. The pest could trigger the loss of markets (includes 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:
- Low (1) causes 0 or 1 of these impacts
- Medium (2) causes 2 of these impact**s**
- **High (3) causes 3 or more of these impacts**

5) Environmental Impact: Score is **Medium (2)**
Lepidium coronopus infestations may result in treatment efforts.

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:
- 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 *Lepidium coronopus:* **Medium (12)**

Low = 5-8 points
Medium = 9-12 points
High = 13-15 points

1) Post Entry Distribution and Survey Information: Score is **Medium (2)**

-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) Final Score: Medium 10 (12-2=10)

Uncertainty: Because the species has been found in Imperial County since the early 1980's and in San Francisco Bay and Sacramento Delta regions since the 1950's there is little uncertainty about its continued occurrence in California.

Conclusion and Rating Justification: *Lepidium coronopus* is a serious pest of vegetable crop fields in the Imperial Valley of California and in Arizona. A "B"-rating is recommended.

References:

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***Comment Period: 03/15/2021 through 04/29/2021**

***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.

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.

Pest Rating: B
