CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Profile for

Senecio squalidus L., Oxford ragwort

Family: Asteraceae tribe Senecioneae

Pest Rating: B

Comment Period: 12/19/2022 through 02/02/2023

Initiating Event:
Senecio squalidus has been previously assigned a B-rating by the California Department of Food and Agriculture (CDFA), Plant Health and Pest Prevention Services. *Senecio squalidus* is designated as a noxious weed as defined by the California Food and Agricultural Code (FAC) Section 5004 and is listed in Title 3, California Code of Regulations (CCR), Section 4500. A pest rating proposal is required to evaluate its current rating and status in the state of California.

History & Status

General Description
Senecio squalidus is an herbaceous, taprooted, annual, biennial or short-lived perennial in the sunflower family (James and Abbott, 2005; Barkley, 2006). It has straight, distally branching stems that reach approximately 60 centimeters (cm) in height. Leaves are evenly distributed, deeply lobed to pinnately compound, and have dentate margins toward the leaf tips. The flower heads are arranged in open cymes. Each flower head is subtended by black-tipped bracts and bears approximately 13 bright yellow peripheral ray flowers and a larger number of central disc flowers. The cylindrical single-seeded achene fruits are 2-3 mm long, usually hairy along the longitudinal ribs, and have a pappus of fine bristles (Barkley, 2006).

Senecio squalidus was collected in the early 1700's from an area of rocky, volcanic soils on Mount Etna in Italy and was grown at the Oxford Botanical Garden in England and escaped from cultivation as a weed, leading to its common name of Oxford ragwort. It is now a relatively common weedy species in Europe (Barkley, 2006), where several subspecies or varieties have been recognized (Plants of the World Online, 2022). The species has been reported to hybridize with *Senecio vulgaris* and several other related species in Europe.

Worldwide Distribution
Senecio squalidus is reported to be native to many countries of Europe south of Scandinavia and in northern Africa (Algeria, Morocco, and Tunisia), but given the weedy behavior and complex infraspecific

variation within the species there is disagreement about where in Europe it is native versus naturalized (Plants of the World Online, 2022; USDA GRIN, 2022). In North America, it has been reported as naturalized in the Canadian province of Nova Scotia (USDA GRIN, 2022) and has also been reported from British Columbia and New Brunswick (Barkley, 2006).

Official Control:
Senecio squalidus is listed on CCR Section 4500 as a noxious weed defined by California FAC Section 5004. The Department is mandated by California FAC, Division 1, Chapter 3, Section 403 to prevent the introduction and spread of noxious weeds. *Senecio squalidus* is listed as a restricted noxious weed seed in California subject to stringent tolerances when found in commercial seed lots.

California Distribution:
There is one reported locality for *Senecio squalidus* in Alameda County, California, collected in the 1970's at the University of California Botanic Garden in Strawberry Canyon, Berkeley (CalFlora Database, 2022; CCH, 2022). This population is reported to have been subsequently eradicated (DiTomaso and Healy, 2007).

California Interceptions:
There are no recorded interceptions of *Senecio squalidus* in the CDFA Pest and Damage Record (PDR) Database.

Consequences of Introduction

1) **Climate/Host Interaction:** Score is **Medium (2)**
In continental Europe, *Senecio squalidus* is a species of woodland and scrub and rocky or disturbed areas (Chater and Walters, 1976). In Great Britain it is described as a ruderal species and grows on disturbed ground in areas such as such as railways, roadsides, pavements, gardens and on walls (Allan and Pannell, 2009). *Senecio squalidus* is typical of regions with cool, damp climates, but is also considered low water tolerant. In Great Britain it was recorded as growing at temperatures between 8° and 20° Celsius.

-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)**
Senecio squalidus 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)**
Senecio squalidus reproduces by seed, but the plant is self-incompatible and requires insect-mediated outcrossing for reproduction (James and Abbott, 2005). Allan and Pannell (2009) reported the production of 18-57 flowering heads per plant when *Senecio squalidus* was grown

experimentally at different locations with varying temperatures, moisture levels, and elevations. Individual plants can potentially produce over 1000 seed units, depending on pollinator effectiveness. Fruits of the genus *Senecio* have an easily detached pappus of fine bristles, which can aid in wind dispersal, usually at short distances from the parent plant. In Great Britain, the spread of the species has been facilitated by railroad and roadway corridors.

- 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 **Medium (2)**

As a restricted noxious weed seed in California, the species is subject to stringent tolerances when present in commercial seed lots, but the species is not currently present in California and has not been an agricultural seed contaminant in the United States. The genus *Senecio*, including *S. squalidus*, produces pyrrolizidine alkaloids, which are highly toxic to livestock including horses and cattle, though likely to be avoided due to their bitter taste.

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 impacts**
- High (3) causes 3 or more of these impacts

5) **Environmental Impact:** Score is **Medium (2)**

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 *Senecio squalidus*: **Medium (11)**

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

1) **Post Entry Distribution and Survey Information**: Score is **Not established (-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) **Final Score: Medium (11-0=11)**

Conclusion and Rating Justification:
Senecio squalidus was introduced into a single locality in California in 1971 and has been reported to be extirpated from the state. If the plant is reintroduced, it has the potential to spread into rocky or disturbed habitats. A rating of "B" is recommended.

Uncertainty:
The showy flower heads might lead this species to be grown as an ornamental plant, but this is strongly discouraged in California by its status as a listed noxious weed species.

References

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***Comment Period:** **12/19/2022 through 02/02/2023**

***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