Sunflower Broomrape (*Orobanche cumana*), a serious parasitic weed identified for the first time in the U.S.

Sunflower Pathology Working Group

- Charles Block, Seed Sci. Center, Iowa State, Ames
- Thomas Gulya, USDA-ARS (retired)
- Bob Harveson, University of Nebraska-Scottsbluff
- Sam Markell, North Dakota State University, Fargo
- Malcom Ryley, Univ. of Southern Queensland, Australia
- Susan Thompson, Univ. of Southern Queensland, Australia
- Tatiana Antonova, VNIIMK, All Russia Research Institute of Oil Crops, Krasnodar, Russia

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WSDA SEEKS HELP FROM SUNFLOWER GROWERS AFTER FIRST NORTH AMERICAN DETECTION OF SUNFLOWER BROOMRAPE CONFIRMED IN YAKIMA

October 1, 2025

Yakima, WA — The Washington State Department of Agriculture (WSDA) has confirmed the first-ever North American detection of *Orobanche cumana*, commonly known as sunflower broomrape, in Yakima, WA. This marks the first known occurrence of this destructive and highly invasive parasitic weed in North America.

The parasitic plant was discovered by a homeowner and later confirmed by the WSDA State Plant Pathology and Molecular Diagnostic Lab and USDA Animal and Plant Health Inspection Service (APHIS). Confirmation included both morphological and molecular analysis.

Sunflower broomrape is a devastating root parasite of sunflower (*Helianthus annuus*) and other members of Asteraceae (the sunflower family), leading to significant crop losses. The plant is incapable of photosynthesis and relies entirely on the host plant for water and nutrients.

This detection is especially concerning due to the aggressive nature of this parasitic weed and its potential to spread rapidly if left unmanaged. Sunflower broomrape poses a serious threat to commercial sunflower production and could cause significant impacts to growers, processors, exporters and the agricultural economy if not swiftly contained.

The WSDA Pest Program is working closely with USDA and local stakeholders to investigate the source, assess the extent of the infestation, and implement response measures to protect North American agriculture.

Reporting suspected sightings of sunflower broomrape

WSDA is seeking help from the public to identify the other possible introductions of this invasive pest. If you suspect you have seen sunflower broomrape, **do not disturb it** as doing so may cause the seed to spread. Instead, photograph the suspected sighting and report it to WSDA immediately.

Report suspected sightings to WSDA immediately by emailing pest@agr.wa.gov or calling 1-800-443-6684 (option 1). Reports should include the reporting party's name, location of the suspected weed, date encountered, and photos.

Where and when was it found?

- Yakima, WA, Oct-2025
  - On volunteer SFs in a blueberry patch near homeowner's vegetable, perennial and cut flower gardens; 3' X 15' area.
  - Distant from any commercial seed production (CA) or oilseed crop field
  - First noticed by homeowner; confirmed by WA State Dept. of Ag. and by USDA.

- Broomrape source – unknown.
- Seed planted in previous year was purchased at local store.
- Broomrape noticed in year 2.
- Remnant seed in packet tested negative.

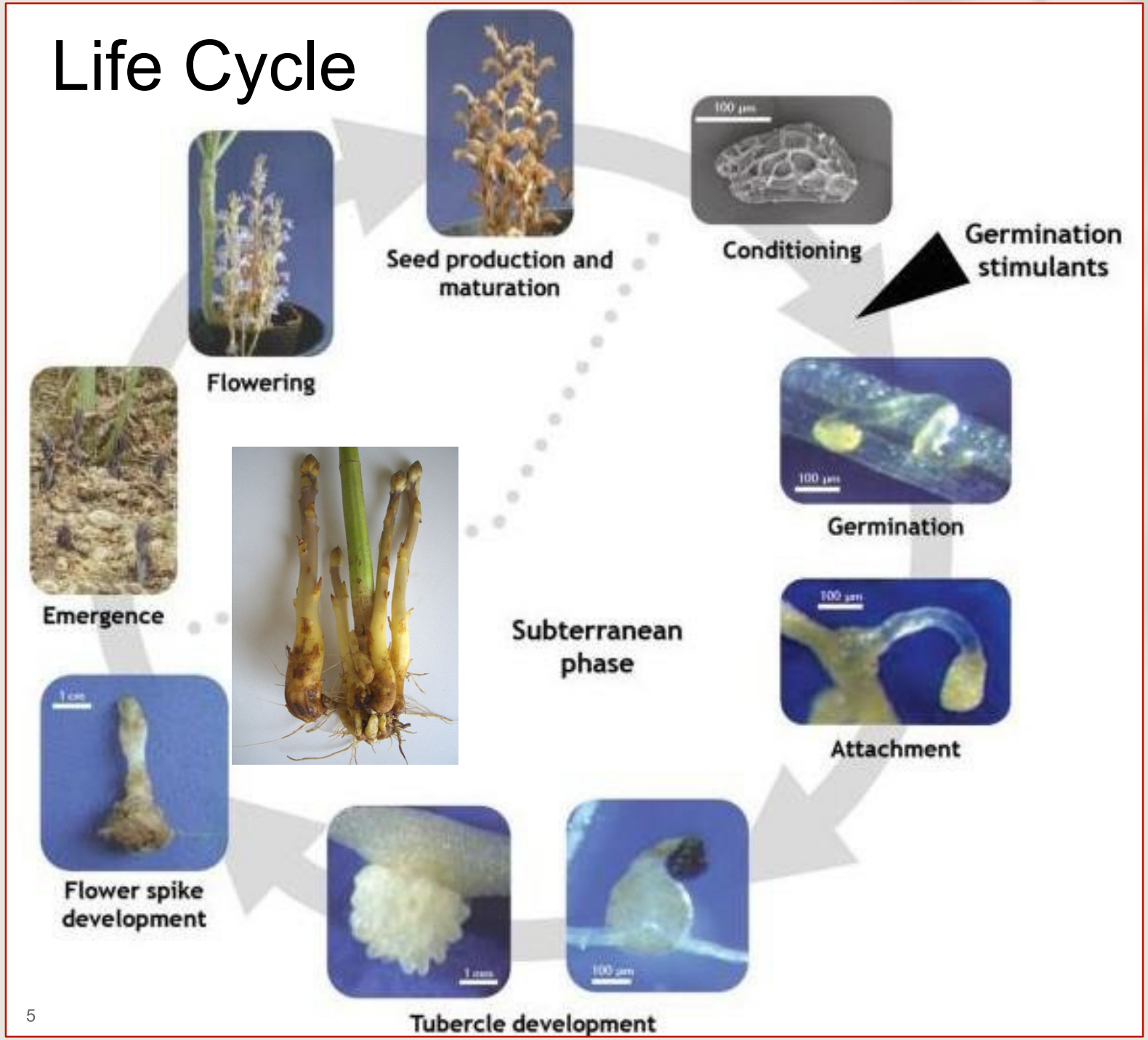
Yakima valley – 70% of U.S. apples, 42% of U.S. pears; 38% of the U.S. Concord grapes, 75% of U.S. hops (20% of the world hop supply), 50% of Washington State's wine grapes.

What is *Orobanche cumana* (sunflower broomrape)?

- host – almost exclusively sunflower
  - has been found on tomato
- holo-parasitic – obligate parasite
  - completely dependent on its host … no leaves … no chlorophyll ... no photosynthesis.
  - ~200 *Orobanche* species worldwide, ~ 10-12 species known in U.S. (none native to crop plants).
- native to Russia and Eastern Europe
  - Spread of *Orobanche cumana* followed expansion of SF production across Ukraine, Moldova, Romania, Bulgaria, and Hungary. Now present in all countries where sunflowers are grown around the Black Sea and Southern Europe.
  - Europe: Widespread in major SF-growing areas, including Spain, France, Italy, Romania, Hungary, Bulgaria, and Ukraine, causing significant yield losses.
  - Asia: Present in India, aggressive populations in China.
  - Africa: Detected in Tunisia.
  - South America; Discovered in Bolivia in 2023.
  - North America: Discovered in Yakima, Washington in 2025.

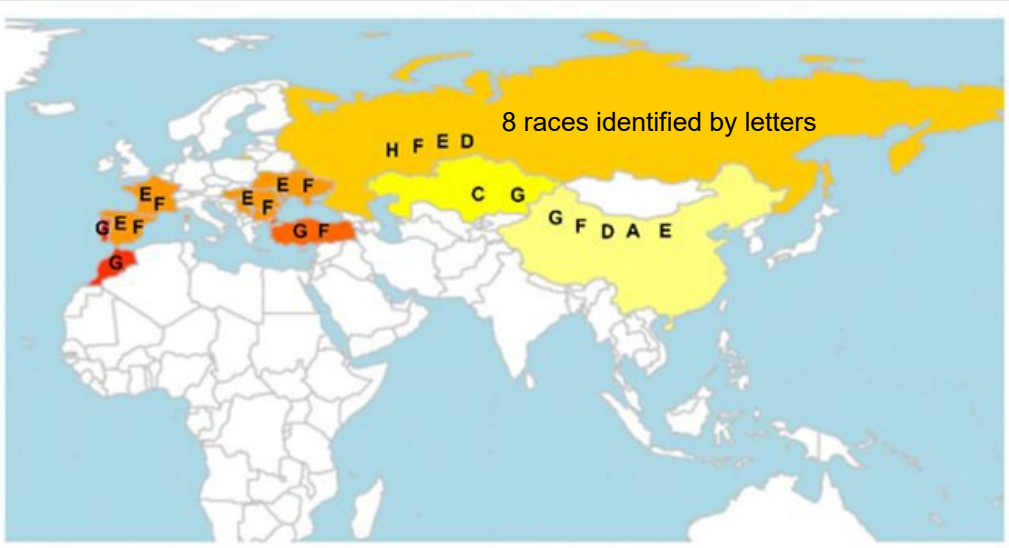
- Seeds germinate in response to chemical signal - sunflower root exudate
- Attach to and penetrate roots
- Tubercle (nodule) develops
- Flower spikes emerge ~ 35 days after planting SF
- Pale stalks – 1 to 2 ft. tall
- Thousands of seeds per stalk

Life Cycle



What makes *Orobanche cumana* a serious problem?

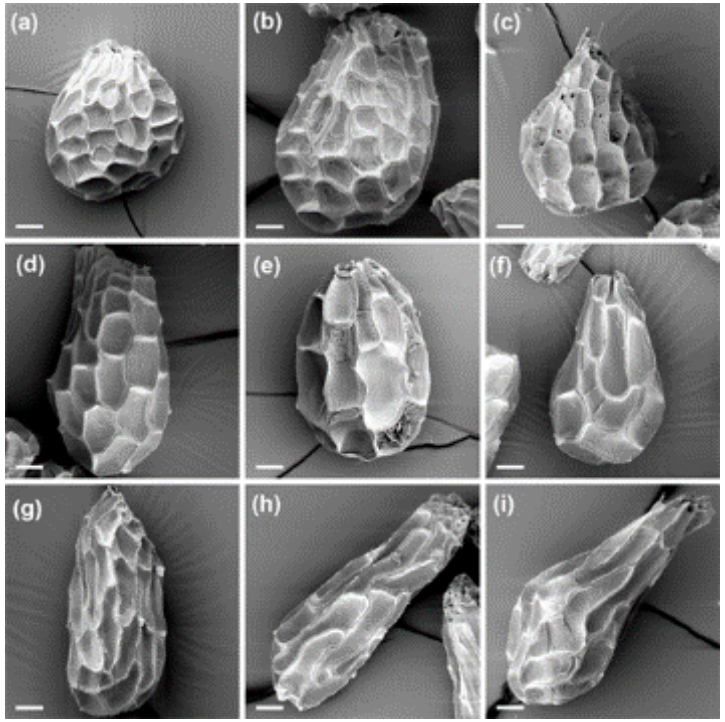
- a single SF plant may be parasitized by up to 50 broomrape plants
- one plant may produce up to 100,000 seeds
- seeds are tiny (2-3 million/oz) and can lie dormant in soil for 30 years; difficult to eradicate
- #1 SF disease problem across southern Europe

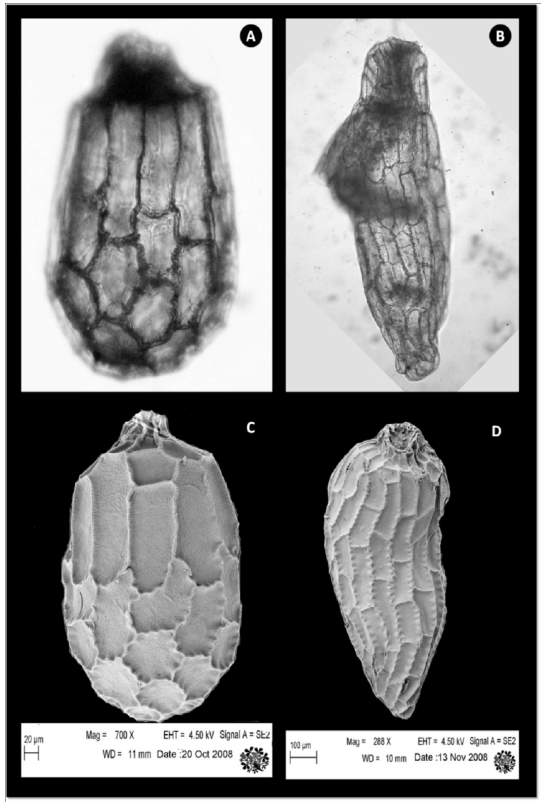


Orobanche seeds are similar in size and appearance to the Begonia seeds in these photos. They are not related.

Begonia seed

Seed Testing - seed wash





Orobanche seeds (left) range from 0.25 - 0.4 mm X 0.1 - 0.2 mm

Begonia seeds (right) range from 0.33 - 0.6 mm x 0.1 - 0.3 mm

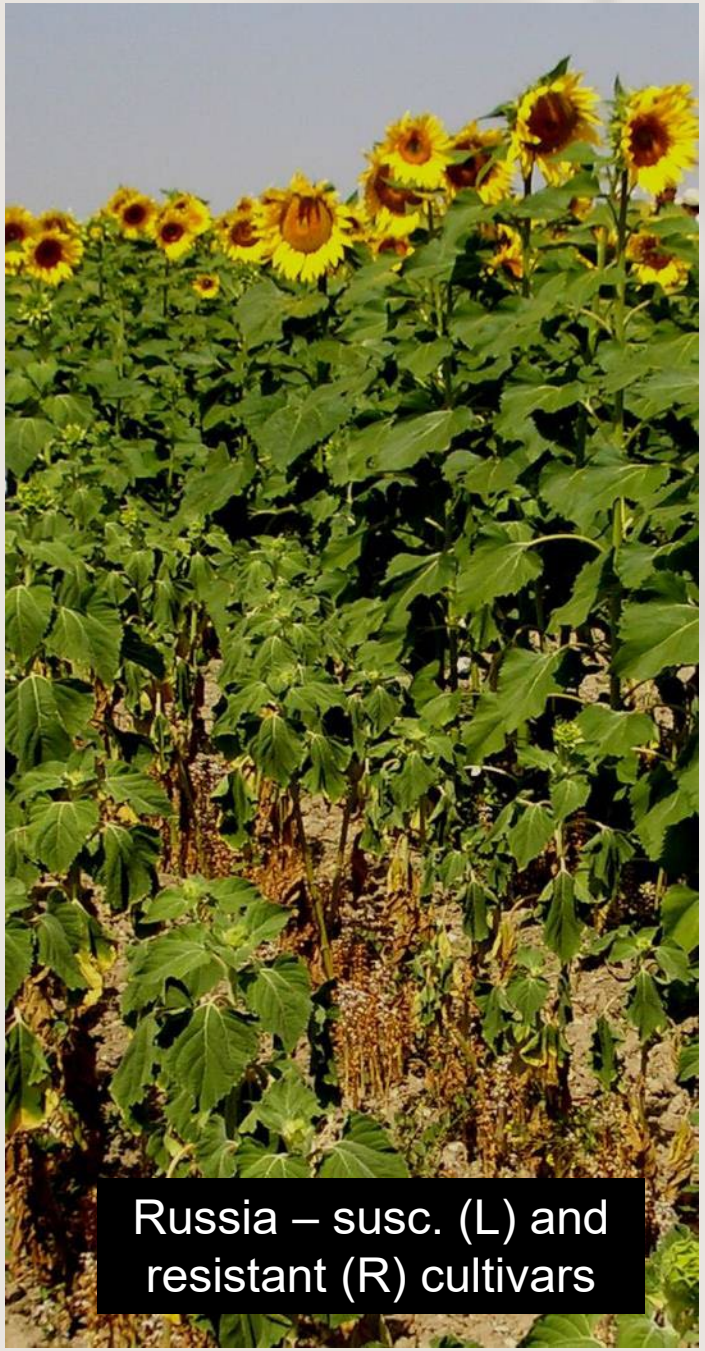
Broomrape spreads by seeds

- seeds - static cling
- plant materials harvested from field
- anything that moves infested soil
- wind, water
- birds, wild-life, grazing livestock
- shoes
- machinery

Field appearance


Israel


Russia


Russia – susc. (L) and resistant (R) cultivars

Control measures - IPM

a) Avoidance or exclusion --- plant clean seed

b) Crop rotation ---- restricted host range – mainly sunflower

- Non-hosts - legumes (e.g soybeans, beans), corn, sorghum, flax and cereal grains. Several of these crops also stimulate *Orobanche* seed germination.
- Some non-hosts such as Brassicas (i.e. mustards, canola) help to deplete the *Orobanche* seed reservoir if tilled under mid-season as a green manure.

c) Biological control ??? Insects - mining fly (*Phyomyza orobanchia*), fungi (*Fusarium oxysporum, F. solani, Rhizoctonia*). Nothing commercialized.

d) Mechanical control e.g. hand weeding in small plots,15-20 day window between emergence and flowering. Reduce seed production but crop damage was done.

e) Chemical control --- imidazolinone herbicides (e.g. Clearfield SF) effective in killing emerged broomrape but have no effect on the seedbank.

f) Genetic resistance --- broomrape has physiological races like DM and rust. Single genes exist for resistance to each of the EIGHT known races, but new biotypes continue to evolve.

WA State eradication strategy

- Field site – *Orobanche* observed in 3’ x15’ area on volunteer SFs among blueberry plants.
- Lower property of perennial and cut flower gardens was surveyed multiple times and no *Orobanche* found.
- Surveys of surrounding farms – negative.
- Removed (clipped at ground level) and burned all vegetation on-site.
- Flame treated a 100’ x 100’ area around patch.
- Burn area and buffer zone treated with aminopyralid broadleaf herbicide (pasture and rangeland).
- Covered with plastic sheeting - solarization.
- Plan to steam pasteurize next year.
- Area to be quarantined for 3 years within ¼ mile.
- Continue surveys and monitoring.

Silt fence installed around the tarped area to minimize animal and human movement

How are *Orobanche* species identified?

- Plant appearance – size, branching (if any)
- Flower characteristics – color, size, shape
- DNA testing – (mandatory) confirmation

Other *Orobanche* species detected on SF in U.S.

- *Orobanche ludoviciana – Aphyllon ludovicianum – Orobanche riparia*
- Louisiana broomrape, or possibly Riparian broomrape
- sandy soils and prairies, primarily targets plants such as *Artemisia* in the *Asteraceae* (daisy/sunflower) family
- detected on SF in western Nebraska – 2014

- *Orobanche* (*Phelipanche*) aegyptiaca
- Egyptian broomrape – wide host range
- Solano County, California – 2014 – on tomato
  2025 – on sunflower

14

Questions

- Should you be worried about *Orobanche*? No – unlikely to ever see or have to deal with it.
- Should you be aware of *Orobanche*? Yes – be alert.
- Growers/Disease section of the NSA website for more information.
- What to do if you suspect broomrape.
  - Take pictures, especially flower close-ups.
  - Crop history and seed source are valuable.
  - Do not collect samples initially – possible seed spread.
  - Contact – plant disease clinic, extension pathologist, county extension agent, your state department of agriculture.