UCCE Sacramento Valley Processing Tomato Production Meeting: Broomrape Update

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www.tomatonet.org/branchedbroomrape
Broomrape: What are we up against?

- Documented 20-80% crop loss in heavily infested areas globally;
- Prolific seed producer;
- Longevity in the soil;
- Extensive suitable host range that overlaps with our economically important rotational crops;
- No findings to date of easily transferable resistance genetics;
- Methods of control used elsewhere costly, unproven, and use currently unregistered chemistries;
- CDFA Class A Quarantine level pest;
Broomrape: What is our history with this pest?
Broomrape: What is our history with this pest?
Broomrape: Known Extent

- 2009 – San Benito County;
- 2014 – San Joaquin County;
- 2014, 2016 & 2021 – 3 finds in Solano County, all within 2 miles;
- 2017-2021: 12 fields across 8 operations - all within a 5-mile radius of Yolo;
- These 9 impacted growers cover ~16,000 tomato acres annually and deliver to a combined 10 facilities

Broomrape: Where is it known to be today?
Broomrape: What is the Goal?

- Prevention
- Eradication
- Containment
- Long-term management and protection of resources

Species absent: Introduction of species
Species widespread: Cost

Time

Broomrape: What is the Goal?
Broomrape: Industry Action Plan

- **Broomrape Control Program Legislation** – AB 1620, has been introduced by Assembly Member Aguiar-Curry from Yolo County on January 10th.
- **Sanitation, detection, and delineation BMPs** with growers and processors that can be signed off on by counties.
- **Fumigation** – voluntary funding from 2021 and 2022 to be supplanted by official program in the future.
- **Crop Insurance** (Industry and/or Federal).
- Continued research.
### 2022 California Tomato Research Institute BROOMRAPE Funding

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Description</th>
<th>PI</th>
<th>Institution</th>
<th>Funding</th>
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</thead>
<tbody>
<tr>
<td>2020</td>
<td>Branched broomrape: PICKIT adaptation, rimsulfuron, ActiGard, variable planting date and Anhydrous in California commercial field conditions</td>
<td>Brad Hanson</td>
<td>UC Davis</td>
<td>$42,531</td>
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<tr>
<td>2021</td>
<td>Branched broomrape: Chile collaboration for PICKIT, rimsulfuron, and variable planting date</td>
<td>Brad Hanson</td>
<td>UC Davis</td>
<td>$34,034</td>
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<td>2021</td>
<td>Developing best equipment sanitation practices for broomrape and other high-profile soil borne pathogens; to mitigate field-to-field spread</td>
<td>Cassandra Swett</td>
<td>UC Davis</td>
<td>$49,922</td>
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<td>2022</td>
<td>Branched broomrape: Tolerance/resistance of commercial varieties</td>
<td>Matt Fatino</td>
<td>UC Davis</td>
<td>$22,215</td>
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<td>2022</td>
<td>Determining the population structure of Peliphanche ramosa and Orobanche aegyptiaca field detections in California</td>
<td>Tera Pitman</td>
<td>UC Davis</td>
<td>$16,652</td>
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<td>2022</td>
<td>Inducible Suberin for Tomato Drought Tolerance (root architecture)</td>
<td>Siobhan Brady</td>
<td>UC Davis</td>
<td>$12,552</td>
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<td>2022</td>
<td>Branched broomrape: genetic approaches to blocking strigolactone movement from root to seed</td>
<td>Neelima Sinha</td>
<td>UC Davis</td>
<td>$83,475</td>
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<td>2022</td>
<td>Branched broomrape: Genetics consortium</td>
<td>Dani Zamir</td>
<td>Hebrew University</td>
<td>$25,000</td>
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#### 2022 Broomrape TOTAL: $286,381
• Be Aware,
• Work with Growers or grower representatives to limit spread,
• Clean equipment (in known, suspected, or adjacent areas),
• Support voluntary and long-term mechanisms for funding Industry response

Slide Credit: Brad Hanson

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Thank you! Questions?

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