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2027 Call for Pre-Proposals

The California Tomato Research Institute (CTRI), a nonprofit crop improvement organization of California processing tomato growers, is seeking research pre-proposals for 2027 funding in the areas identified below. Pre-proposals are due **Friday, October 30, 2026**.

Background:

CTRI identifies, funds, and coordinates research intended to maintain and improve the economic viability of California processing tomato production, with emphasis on productivity, product quality, production efficiency, risk reduction, and resource stewardship.

We are particularly interested in research that addresses clearly defined grower problems or opportunities and has a credible path toward practical industry use. Most CTRI-funded work is applied and commercially focused, but we also support longer-term research where there is a clear connection to important industry needs, including genetics and breeding, diagnostics, and development of new technologies. Research that adapts promising tools, practices, or knowledge from other crops, production regions, or disciplines to California processing tomatoes is encouraged.

Applicants should be clear about the intended outcome of the work, what can reasonably be accomplished during the proposed funding year, and what additional steps may be required before growers can use the result. Depending on the project, that pathway may include additional research, field validation, registration, commercialization, breeding, extension, or adoption at commercial scale.

For 2027, CTRI expects to coordinate approximately **\$1 million in research funding across 25–30 projects**, including broomrape projects funded through the CDFA Broomrape Board and managed through CTRI. Funding is awarded on an annual basis.

Areas of Interest for the 2027 Call

The research areas below reflect current needs identified by California processing tomato growers and industry partners. Branched and Egyptian broomrape remain CTRI's highest research priority, with consperse stink bug receiving heightened priority for 2027. CTRI has also identified development of modern public processing-tomato reference material and expanded use of commercial production data to better understand yield, yield stability, and production trends as high-priority opportunities. Other listed areas remain important, and CTRI welcomes proposals addressing emerging problems or adapting promising approaches from other crops, regions, or disciplines to commercial processing tomato production.

Across all areas, CTRI is particularly interested in work with a clear path toward practical use - whether through improved management recommendations, new tools or technologies, commercially relevant genetic material, better decision support, or information that reduces grower cost and risk.

Branched and Egyptian Broomrape - Heightened Priority

Broomrape remains CTRI's highest research priority. CTRI is seeking research that improves growers' ability to detect, manage, contain, and reduce the long-term economic and regulatory burden associated with affected fields. Priority areas include:

- **Control and field management:** Continue testing and validating chemical, fumigant, flooding, cultural, and integrated control strategies under commercial or commercially relevant conditions. Of particular interest are approaches that reduce emergence, prevent seed production, reduce the seedbank, or otherwise improve long-term management after a detection.
- **Targeted treatment of emerged broomrape:** Evaluate chemistries and precision-application approaches capable of treating emerged broomrape without unacceptable injury to the tomato crop. This may include emerging machine-vision or smart-sprayer platforms that can identify individual broomrape plants and apply targeted treatments at practical cost and speed.
- **Field-scale detection and mapping:** Develop and validate tools that allow growers to reliably identify, geolocate, and map broomrape plants in commercial fields. The goal is actionable information that improves rogueing and management and, where accuracy and validation support it, could provide evidence useful in documenting absence or declining risk within a field.
- **Landscape-scale detection and spread monitoring:** Develop low-cost remote-sensing approaches, including satellite-based methods, that can be applied retrospectively and repeatedly to evaluate historical spread, characterize current distribution, and monitor changes over time. Of particular value are tools that can help determine whether industry and regulatory containment programs are reducing spread.
- **Grower confidentiality, data access, and long-term usability:** Proposals involving grower data, field locations, imagery, proprietary models, or software should include a clear data-management plan. Sensitive grower and field-level information must be treated as confidential and access-controlled, with public reporting aggregated or de-identified unless the grower expressly agrees otherwise. At the same time, CTRI and participating growers should retain meaningful access to project outputs, data products, and tools developed with industry support.
- **Science to support reduced restrictions and return to normal production:** Develop and validate the evidence needed to determine when affected fields can safely move toward reduced restrictions and, ultimately, return to normal production. Relevant work may include treatment effectiveness, seedbank decline, repeated negative surveys, spread risk, field history, and other measurable indicators of declining risk. CTRI's role is to help build the scientific basis growers and regulators can use to make those decisions; regulatory requirements and final determinations remain with CDFA and the Broomrape Board.
- **Genetic resistance:** Identify and advance additional sources and mechanisms of broomrape resistance, with emphasis on moving promising resistance into useful processing-tomato backgrounds. CTRI is interested in broadening both the number of independent resistance approaches and the research capacity working on this problem.
- **International collaboration and validation:** CTRI welcomes research conducted in established broomrape-affected tomato production regions outside California when access to greater infestation pressure or other conditions can materially accelerate answers relevant to California growers. Proposals should explain why the work is best conducted there, how results will translate to California production, and how appropriate California validation will occur.
- **Sanitation implementation and extension:** CTRI's current need is primarily the practical application, adoption, communication, and refinement of existing sanitation recommendations under commercial conditions. Additional sanitation efficacy research should address a clearly unresolved question rather than repeat work that has already established basic effectiveness.

Conspense Stink Bug - Heightened Priority

Conspense stink bug pressure has increased substantially during the last 3 seasons and is a heightened CTRI research priority for 2027. CTRI is interested in work that improves growers' ability to anticipate risk, monitor populations, reduce movement into tomato fields, and maintain effective control options. Priority areas include:

- **Monitoring and risk prediction:** Evaluate commercially available traps, lures, and scouting methods, and determine how surrounding crops and field conditions influence stink bug movement into processing tomatoes. Of particular interest is the role of wheat, triticale, and other grain crops, including crop maturity, harvest timing, field borders, irrigation, and other factors that could inform a practical monitoring network and treatment decisions.
- **Management of source crops and field edges:** Develop practical approaches to reduce stink bug populations before they move into tomato fields. This may include border management, timing of treatments, harvest-related practices, or control in adjacent grain and other source crops. Where effective materials are not currently registered for those uses, identify the data and registration pathway needed, including potential IR-4 work.
- **Control in processing tomatoes:** Evaluate effective chemical, biological, and cultural control options under commercially relevant conditions, with attention to efficacy, timing, crop safety, cost, and fit within integrated pest management programs.

Modern Public Processing-Tomato Reference Material - High Priority

Public processing-tomato research still relies heavily on very old genetic backgrounds because they are readily available, even though they no longer represent many of the agronomic and disease-resistance traits common in modern commercial production. CTRI is interested in developing a more relevant public reference for future genetics and breeding research.

- **Develop and characterize a modern public reference set:** Identify, assemble, and characterize publicly available - and, where feasible, contributed commercial - processing-tomato material representing contemporary agronomic traits, disease resistance, maturity, quality, and other characteristics important specifically to California processing production.
- **Make the material useful beyond a single project:** The desired outcome is accessible germplasm that researchers can readily obtain and use as a common reference for future work on broomrape, Fusarium, viruses, root architecture, abiotic stress, and other production challenges.
- **Build with industry input:** Collaboration with public and private breeders is a must to ensure the reference material reflects current breeding priorities and is useful across research programs.

Commercial Production Data, Yield Stability, and Trends - High Priority

California processing tomatoes generate unusually rich commercial datasets across years, varieties, fields, processors, and production environments. CTRI is interested in research that uses longitudinal data to identify patterns that can improve grower decision-making and guide future field research.

- **Yield and yield stability:** Evaluate longer-term productivity trends and identify factors associated with consistently strong or weak performance across years and environments.
- **Variety × environment × management:** Examine commercial variety performance, management interactions, field history, and environmental conditions to identify relationships that may explain differences in yield, quality, or stability.
- **From patterns to decisions:** Priority will be given to work that moves beyond descriptive analysis to generate testable hypotheses for future field validation or practical management insights.

Commercial Production Data, Yield Stability, and Trends - High Priority, continued...

- **Data access and confidentiality:** Proposals should clearly describe the datasets required, how access will be secured, and how confidential grower, processor, or field-level information will be protected.

Other Pest, Disease, and Weed Management Priorities

CTRI continues to welcome applied research addressing **Fusarium stem rot and decline, Fusarium wilt race 3, resistance-breaking tomato spotted wilt virus (RB-TSWV), root-knot nematode (RKN), beet curly top virus (BCTV), field bindweed, southern blight, dodder, and tomato russet mite**. Priorities include improved control, diagnostics, monitoring, forecasting, and other practical tools that reduce crop loss, production cost, or management risk.

- **Control tools and programs:** Evaluate chemical, biological, cultural, and integrated approaches under commercially relevant conditions. Proposed products should address a defined industry need, have enough preliminary evidence to justify field testing, have a registration or credible commercialization pathway, and come with clear use protocols that allow meaningful comparison with grower-standard practices. Application frequency, compatibility with normal production practices, and cost should be realistic for the problem being addressed.
- **Diagnostics, monitoring, and decision support:** Develop or validate tools that improve the speed, reliability, cost, or practical usefulness of pest and disease identification, monitoring, forecasting, or treatment decisions.
- **Diagnostic services and industry support:** CTRI recognizes that some important diagnostic work is operational rather than focused on developing new tests. Support may be provided for established diagnostic capacity that serves a defined processing-tomato industry need, including identification or confirmation of important diseases and pests, processing of grower or industry samples, tracking occurrence, and timely reporting of results that inform management or industry response. Novel assay development is not required, but proposals should clearly describe the service being provided, expected use, and value to growers and the industry.

Agronomy, Water, Fertility, and Production Systems

CTRI welcomes research that improves yield stability, input efficiency, and the ability of growers to make better management decisions under California production conditions. Areas of particular interest include:

- **Yield stability under variable weather:** Processing tomato yields were above the long-term average in both 2025 and 2026, two relatively mild production seasons, although 2025 was exceptional. What environmental, physiological, varietal, or management factors contributed to that performance, and can any of them be translated into practices that improve yield stability in hotter or more stressful years?
- **“New” versus “old” tomato fields:** What explains the recurring yield advantage observed in fields returning to tomatoes after several years out of rotation compared with fields in more frequent tomato production? CTRI is interested in identifying the biological, soil, disease, rotation, or management factors involved and whether those advantages can be reproduced in older tomato ground.
- **Root-zone, irrigation, and fertility efficiency:** How do soil type, rooting depth, SSDI design and management, irrigation strategy, and nutrient placement affect the portion of the soil profile actually used by the crop? CTRI is interested in practical approaches that improve water and fertilizer return on investment without sacrificing yield or quality.

Agronomy, Water, Fertility, and Production Systems, continued...

- **Turning granular information into granular management:** As sensing and imaging technologies improve, growers will increasingly be able to identify within-field variability. The unresolved challenge is how to act on that information when irrigation, fertility, and other management decisions are generally made at the irrigation-block scale. CTRI is particularly interested in the physical or operational “unlock” that would make sub-block management commercially practical.
- **Production Practices and Customer Sustainability Needs:** Synthesize the best available research, CTRI-funded and otherwise, on soil health, water, nutrient, and other production practices relevant to California processing tomatoes. Identify practices that are agronomically sound, economically realistic, and supported by sufficient evidence to be communicated confidently to growers and industry customers. The goal is to provide growers with practical guidance while giving processors, retailers, and other customers a credible basis for recognizing environmental improvements without prescribing individual farm management decisions.

Automation and Precision Equipment

CTRI is interested in independent evaluation of commercially available or near-commercial technologies that could reduce labor, improve input efficiency, or improve field operations in processing tomatoes.

- **Precision cultivators and smart sprayers:** Conduct side-by-side, unbiased evaluations under commercial California conditions. CTRI is interested in weed-control or application performance, operating speed and capacity, labor requirements, crop effects, reliability, field limitations, ownership and operating costs, and other tradeoffs that growers should understand before making major equipment investments.
- **Publicly useful results:** Projects should generate comparative data that can be shared broadly with growers. Demonstrations alone are not sufficient; the objective is to provide information that supports purchasing and management decisions.

Genetics and Breeding

CTRI continues to support genetics and breeding research that can produce useful resistance, resilience, or production traits for California processing tomatoes.

- **Disease and pest resistance:** Identify and characterize genes or traits associated with resistance or tolerance to major industry problems, particularly **RB-TSWV, Fusarium diseases, root-knot nematode, and other high-impact pests and diseases** where genetic resistance could materially reduce grower risk or input use.
- **Abiotic stress and root traits:** Develop or validate traits associated with improved performance under heat, water-quality, salinity, or water-limiting conditions, including root-system characteristics that improve access to water and nutrients or support more stable yield.
- **Translation into useful material:** CTRI is most interested in work that moves beyond gene discovery toward material, markers, tools, or breeding resources that can realistically be used by public or commercial breeding programs.
- **Germplasm resources and access:** Support maintenance, characterization, and accessibility of public tomato germplasm and other shared genetic resources that provide important infrastructure for processing-tomato research and breeding.

CTRI also welcomes pre-proposals addressing important industry needs that are not explicitly listed above. Researchers considering such projects are encouraged to contact CTRI before submission to discuss fit.

Selection Process

Pre-proposals will be reviewed for scientific merit, relevance to identified industry needs, feasibility, expected deliverables, and potential value to California processing tomato growers. Projects addressing heightened priorities may receive additional consideration, but proposals across all listed areas remain eligible for funding.

Review may include subject-matter experts, CTRI grower members and Board members, and, for broomrape-related projects, the Research Subcommittee of the CDFA Broomrape Board. Continuing projects will also be evaluated on progress against previously funded objectives and whether additional support is justified by results to date.

Projects invited forward will be discussed at the Annual Research Meeting, where researchers will have an opportunity to present their work, receive industry feedback, and refine the project before submission of a full proposal. Final funding decisions are made annually by the CTRI Board; broomrape projects proposed for Broomrape Board funding will subsequently move through that Board's review and approval process.

Cost-sharing and leveraged funding are encouraged when they strengthen the work or extend the impact of grower dollars. In particular, researchers at CSU campuses should consider opportunities through the **CSU Agricultural Research Institute (ARI)**, which is setting aside funding for industry-partnered agricultural research in 2027 and beyond. CTRI is glad to provide letters of support and, where appropriate, serve as an industry partner or source of matching support for competitive outside funding applications.

Annual Research Meeting and Full Proposal Process:

After initial review, PIs whose pre-proposals are moving forward will be invited to participate in the CTRI **Annual Research Meeting on December 2–3, 2026, at Hotel Winters in Winters, CA**. The meeting is designed to give researchers direct feedback from growers, processors, seed companies, and other industry participants before projects are finalized.

Presentations should focus on the problem being addressed, progress to date for continuing projects, the proposed approach and deliverables for 2027, and the specific questions on which industry input would be useful. Researchers should expect discussion and potential requests to refine scope, methods, deliverables, or budgets based on that feedback.

Researchers invited to submit a full proposal will be notified on December 4, 2026. Full proposals are due January 15, 2027. CTRI funding decisions will be communicated by February 26, 2027. Broomrape projects proposed for Broomrape Board funding will also proceed through the Broomrape Board's Research Subcommittee and full Board approval process.

Submission and Questions

Submit pre-proposals to zach@tomatonet.org no later than Friday, October 30, 2026. I will confirm receipt. Please use the attached 2027 Pre-Proposal Format when preparing your submission.

If you are considering a project and want to discuss its fit with industry priorities, potential grower value, collaborators, or other aspects of the concept before submitting, please reach out directly. Early conversations are encouraged.

2027 Research Project Pre-Proposal Format

Pre-proposals are limited to **three pages maximum**. A concise description is sufficient; a full research proposal is not expected at this stage. Shorter submissions are welcome, and bullet points may be used. Use single spacing, a readable font of at least 11 points, and one-inch margins. Do not number pages, as submissions will be compiled into a larger document. Email your completed pre-proposal to Zach Bagley at zach@tomatonet.org in PDF, DOC, or DOCX format by **Friday, October 30, 2026**. Submissions that do not follow these requirements may be returned for revision.

Use the bolded headings below to organize your pre-proposal.

- **Project title:**
- **Project Status and Duration:** Identify the proposal as new or continuing. State the project's anticipated completion date and, for continuing projects, the year it began. This funding cycle runs from March 1, 2027, through February 29, 2028. Funding is awarded annually; support for future years is not guaranteed.
- **Funding requested from CTRI for this year:** Provide the total dollar amount only. CTRI does not fund indirect or overhead costs. PI salary support may be requested for project time not already covered by institutional or other grant funds.
- **Principal Investigator:** Provide name, affiliation, email address, and phone number.
- **Co-PI(s) and Collaborators:** Provide names and affiliations, as applicable.
- **Executive Summary:** In **500 words or less**, describe the project in plain language for an industry audience. Short paragraphs or bullet points are welcome. Address:
 - **Problem and Relevance:** What grower problem or opportunity does the project address, and which CTRI research priority does it support?
 - **Objectives and Approach:** What questions will you answer, and how will you investigate them? Briefly describe the approach and the key milestones you expect to reach during this funding year.
 - **Expected Deliverables and Grower Benefit:** Identify what the project will produce, who will use it, and when - including any further development needed. Describe potential improvements to yield, quality, production costs, risk, or net revenue. Estimate benefits per acre where credible, stating assumptions; otherwise, explain what is needed to quantify them.

Industry Context - reference information to support your above estimates

- The 2023 UC [Sacramento Valley Cost Study](#) provides a reference budget for processing tomato production.
- In 2026, processing tomatoes were grown on approximately 185,000 acres, including approximately 10,000 certified organic acres. Base prices were \$105/ton for conventional tomatoes and \$131.50/ton for organic tomatoes.
- **Continuing Project Progress (continuing projects only; outside the Executive Summary's 500-word limit):** In concise bullets, summarize findings and progress to date, significant setbacks or changes in approach, and what additional funding would accomplish. Clearly distinguish preliminary findings from completed analyses. Final reports are now due in mid-March, allowing more time to complete the funded work and analysis. Current results and progress are still required for renewal review: include them in this pre-proposal and update them for the Annual Research Meeting and subsequent full proposal.
- **Industry Collaboration:** Identify the practical industry support needed to carry out the project, such as access to fields, grower data, equipment, or trials under commercial conditions. Indicate what support is already confirmed and where you need help identifying partners or securing access.

- **Questions and Feedback:** List two or three specific questions you would like growers, the Board, or other industry participants to discuss at the Annual Research Meeting. Focus on input that could improve your project design, test assumptions, clarify current practices, identify barriers to adoption, or define meaningful measures of success.

If you're unsure how your project connects with grower needs or how to explain its potential impact, contact Zach Bagley. I'm happy to help you think it through before submission.

- **Other Support:** List additional funding and in-kind support contributing to this project or building on CTRI-funded work. Include the source, amount, status (secured, pending, or planned) and connection to CTRI support. For larger grants, identify the portion supporting related work. **Outside funding does not reduce your chances of CTRI support. It helps strengthen grower willingness to contribute by showing that their investment attracts additional resources and delivers more research than CTRI could fund alone.**

Reporting and communication expectations if funded:

- **Mid-year Progress Report:** A short report (1–3 pages) is due **Tuesday, August 31, 2027**. Summarize progress against the funded objectives and milestones, findings to date, significant setbacks or changes, and remaining work. Explain the practical implications for growers and distinguish preliminary findings from completed analyses. CTRI will provide a report template and reminder before the deadline. Reports will be shared with the Board; submission is required before the second half of funding is released.
- **Requests for Continued Funding:** Include current findings and progress in the next pre-proposal, and update them for the Annual Research Meeting and subsequent full proposal. The later final-report deadline allows more time to complete work and analysis, but renewal decisions still require current evidence of progress.
- **Final Reports:** Final reports for current **2026 projects are due Tuesday, March 16, 2027**. Reports should summarize accomplishments against the funded objectives, explain limitations or unmet objectives, and identify practical applications and any further work needed. Reports will be shared with the CTRI Board and grower members, then published on the CTRI website. The final-report deadline for 2027 projects will be specified in the funding agreement and is expected to be mid-March 2028. A report template will be provided.
- **Sharing Results and Acknowledging Support:** Share findings with practical grower value through appropriate field days, research meetings, or other outreach during and after the project. Clearly acknowledge CTRI funding in presentations, publications, and other materials resulting from supported work, particularly those reaching processing tomato growers. Scientific presentations and peer-reviewed publication are encouraged where appropriate.
- **Broomrape projects submitted through CTRI for Broomrape Board funding:** CTRI manages these projects in coordination with CDFA. Additional reporting requirements may apply and are being finalized. CTRI is working to align those requirements with its reporting process, minimize duplicate submissions, and keep researcher responsibilities clear and manageable. Any additional requirements will be communicated as soon as they are confirmed.

2027 Cycle Timeline:

- Deadline for submission of pre-proposals: **Friday, October 30th, 2026**
- 2026-2027 Annual Research Meeting: **December 2nd and 3rd, 2026**
- Notification of Request for Full Proposals: **Friday, December 4th, 2026**
- 2027 Full Proposal Deadline: **Friday, January 15th, 2027**
- 2027 Notification of Funding: **Friday, February 26th, 2027**
- 2026 Final Project Report Deadline (for current 2026 projects): **Tuesday, March 16th, 2027**
- 2027 Funded Project Progress Reports Deadline: **Tuesday, August 31st, 2027**
- 2027-2028 Annual Research Meeting: **December 1st and 2nd, 2027**