

ANNUAL PERFORMANCE REPORT

AWARD YEAR 2024

An Annual Performance Report must be received within 90 days after the end of the first year of the date of the signed grant agreement and 90 days after the end of each subsequent year until the expiration date of the grant period. You are required to report on the administration of the agreement and each project approved within the agreement.

ANNUAL PROJECT REPORT TEMPLATE

Annual Performance Reports must illustrate the progress made toward the completion of each project within the grant agreement. Each project shall be outlined as separate project profiles. You will report on projects in the same order they were submitted in the approved application and subsequent amendments.

If a project is completed at the time of Annual Performance Report submission, the project report should be submitted in Final Performance Report format.

PROJECT INFORMATION

Project Title Improving Sustainable `Awa Production in Hawaii through Tissue Culture Propagation and Education

Recipient Organization Name: Malama Sanctuary

Recipient's Project Contact:

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PROJECT REPORT

Annual Report Type: 1st Annual

Reporting Period

Start Date: 4/16/2025

End Date: 4/16/2026

PERFORMANCE NARRATIVE

ACTIVITIES PERFORMED

Address the below sections as they relate to this reporting period.

ACCOMPLISHMENTS

Estimate the Total Percentage (%) of Work Completed on the Project: 40%

List your accomplishments or activities for this period of performance and indicate how these accomplishments assist in the fulfillment of your project's objective(s), identifying the specific objective(s) from the Accepted Project Proposal.

#	Accomplishment/Activity	Relevance to Objective
1	Prepared tissue culture and greenhouse infrastructure, including workspace setup, environmental controls, sterile work areas, and	Supports Objective 1 by establishing the foundational infrastructure required for propagation and scale-up of Hawaiian `awa varieties.

#	Accomplishment/Activity	Relevance to Objective
	propagation systems necessary for Hawaiian 'awa tissue culture activities.	
2	Procured and organized project-approved supplies and consumables in accordance with the approved budget, including media preparation materials, sterilization supplies, greenhouse inputs, and propagation materials.	Supports Objective 1 by ensuring availability of essential materials required for consistent tissue culture propagation and acclimatization activities.
3	Developed and refined sterilization procedures, media preparation protocols, and explant-handling methods appropriate for Hawaiian 'awa tissue culture propagation.	Supports Objective 1 by improving readiness for successful establishment and maintenance of tissue-cultured 'awa plants.
4	Initiated tissue culture propagation activities using recommended Hawaiian 'awa varieties, with explants successfully established in laboratory conditions and actively maintained through ongoing subculturing activities.	Supports Objective 1 by transitioning the project from preparatory activities into active propagation and early scale-up phases.
5	Continued refinement of tissue culture propagation methods, including adjustments to media preparation, contamination control, handling procedures, and growth management protocols based on observed explant performance.	Supports Objective 1 by improving propagation efficiency and supporting future scale-up capacity.
6	Maintained greenhouse and acclimatization systems to support downstream hardening and future transfer of propagated plant materials.	Supports Objective 1 by preparing infrastructure necessary for later-stage plant development and distribution activities.
7	Recorded extensive educational video footage related to 'awa cultivation, tissue culture propagation, Hawaiian 'awa varieties, and project activities. Project-related educational videos collectively exceeded 8,000 online views during the reporting period. These are posted at https://www.youtube.com/@malamasanctuary	Supports Objective 2 by advancing development of educational materials promoting sustainable 'awa production in Hawai'i.
8	Developed and revised educational and technical written materials related to 'awa propagation, disease considerations, Hawaiian 'awa production, and sustainable cultivation practices. Ten technical bulletins have been posted at https://malamasanctuary.org/articles/	Supports Objective 2 by preparing evidence-based educational outreach materials aligned with project goals.
9	Expanded online educational outreach efforts related to 'awa production and Hawaiian agriculture through project-related social media and educational dissemination activities.	Supports Objective 2 by increasing awareness of sustainable 'awa production practices and Hawaiian-grown 'awa.
10	Coordinated with project collaborators, growers, and technical advisors regarding propagation progress, recommended Hawaiian 'awa varieties, and future distribution planning.	Supports Objective 1 by aligning project execution with future production and dissemination goals.

CHALLENGES AND DEVELOPMENTS

Provide any challenges to the completion of your project or any positive developments outside of the project's original intent that you experienced during this reporting period. If those challenges or developments resulted or will result in corrective actions and/or changes to the project, include those in the space below.

#	Challenge or Development	Corrective Action or Project Change
1	Tissue culture propagation of 'awa requires careful sequencing of laboratory preparation, protocol refinement, contamination management, and gradual scale-up activities prior to large-scale production.	No corrective action required. Activities remain within the approved scope, objectives, and timeline of the project.
2	Positive development: 'Awa explants were successfully established and maintained under laboratory conditions, with active growth observed during the reporting period.	Ongoing protocol refinement continues within the approved project plan. No changes to project objectives or deliverables were necessary.
3	Positive development: Early propagation efforts provided valuable information regarding media preparation, contamination reduction strategies, and subculturing schedules appropriate for Hawaiian 'awa varieties.	No corrective action required. Adjustments and refinements are occurring within the approved project framework.
4	Positive development: Educational video production and written outreach materials advanced significantly during the reporting period, supporting future dissemination goals.	No corrective action required. Educational and outreach activities remain aligned with project objectives and timeline.
5	Due to the technical nature of tissue culture propagation, early project phases required substantial emphasis on infrastructure preparation and protocol development prior to large-scale plant output.	No corrective action required. Project activities are progressing according to the phased implementation approach outlined in the accepted proposal.

OUTCOME AND INDICATOR RESULTS TO DATE

Please list the Outcomes and Indicators you selected in your accepted project proposal, and identify the quantifiable results, along with an update on their progress. It is understood that the results may not yet be final at the time that this report is submitted; however, please provide an update on the progress to date.

#	Outcome/Indicator	Quantifiable Results
1	Production of tissue-cultured 'awa plants from four recommended Hawaiian varieties (Papa Ele'ele, Papa Ele'ele Pu'upu'u, Papa Kea, Pana'ewa).	Tissue culture propagation activities initiated and ongoing. Explants successfully established under laboratory conditions and maintained through active propagation activities.
2	Distribution of approximately 2,000 'awa plants representing four recommended Hawaiian varieties at cost to support increased 'awa cultivation in Hawai'i.	Approximately 490 'awa plants representing recommended Hawaiian varieties were distributed through project-related outreach and propagation activities during the reporting period. Further distribution is planned following continued propagation, acclimatization, and scale-up activities.
3	Development and dissemination of educational content related to 'awa cultivation, propagation, sustainability, and disease considerations.	Project-related educational videos collectively exceeded 8,000 online views during the reporting period and are publicly available through the Malama Sanctuary YouTube channel. Educational content development is ongoing.
4	Increased awareness of sustainable 'awa production practices among growers and stakeholders.	Ten technical bulletins have been posted at https://malamasanctuary.org/articles/ .

		A CTAHR extension bulletin entitled <i>Establishment and Early Management of Kava</i> was co-authored with Dr. Robert Paull and Dr. H.C. Bittenbender of the University of Hawai'i and has completed the required three-reviewer review process for CTAHR extension publication. In addition, a full-length journal manuscript entitled <i>Establishment and Early Management as Determinants of Kava (Piper methysticum) Sustainability: A Systematic Review</i>, co-authored with internationally recognized kava researcher Dr. Vincent Lebot, has been drafted and is currently undergoing revision in preparation for peer-reviewed submission.
5	Support for increased availability of recommended Hawaiian 'awa planting materials.	Tissue culture propagation infrastructure and propagation systems established to support future increases in planting material availability.

DISCUSSION OF ACTIVITIES PERFORMED (IF NEEDED)

Provide any additional information that has not already been covered by Accomplishments, Challenges, and/or Outcomes sections. This section is not required.

Activities completed during this reporting period are consistent with the phased implementation strategy described in the accepted project proposal. Early project efforts appropriately emphasized establishment of tissue culture infrastructure, refinement of propagation protocols, contamination management, and initiation of propagation activities prior to large-scale production and distribution. Educational and outreach efforts progressed in parallel with propagation activities. Video footage, written educational materials, and project-related outreach content were developed during this reporting period to support future dissemination objectives. The project remains aligned with its overall goals of increasing access to recommended Hawaiian 'awa planting materials while promoting sustainable 'awa production and educational awareness in Hawai'i.

UPCOMING ACTIVITIES

Describe activities you plan to complete during the next reporting period.

#	Activity	Anticipated Completion
1	Continue tissue culture propagation activities, including monitoring explant growth, subculturing, contamination management, and protocol refinement to support increased propagation efficiency.	Ongoing during next reporting period
2	Advance tissue culture production toward larger-scale propagation and downstream acclimatization activities in preparation for greenhouse transfer and future distribution.	Next reporting period
3	Continue greenhouse acclimatization preparation and maintenance activities to support future hardening and transition of propagated plant materials.	Ongoing during next

		reporting period
4	Complete editing and dissemination of educational video content related to Hawaiian 'awa production, propagation, and sustainable cultivation practices.	Next reporting period
5	Finalize and distribute educational materials related to 'awa propagation, disease considerations, and Hawaiian 'awa production systems.	Next reporting period
6	Continue coordination with growers, collaborators, and technical advisors regarding future plant distribution and educational outreach activities.	Ongoing during next reporting period

PROJECT EXPENDITURES TO DATE

EXPENDITURES

Cost Category	Amount Approved in Budget	Actual Federal Expenditures (Federal Funds ONLY)
Personnel	39,360.00	13,624.00
Fringe Benefits	0	0
Travel	0	0
Equipment	0	0
Supplies	29,955.77	24,812.44
Contractual	0	0
Other	0	0
Direct Costs Subtotal	69,315.77	38,436.44
Indirect Costs	0	0
Total Federal Costs	69,315.77	38,436.44

DISCUSSION OF EXPENDITURES

For 1st Annual Reports if this amount is less than 30 percent and for 2nd Annual Reports if this amount is less than 60 percent, include a statement explaining how the grant funds will be expended and project activities completed as planned by the end date on the grant agreement.

Expenditures during this reporting period reflect the phased implementation approach described in the accepted proposal. Grant funds were appropriately directed toward establishment of tissue culture infrastructure, procurement of approved supplies and materials, initiation of propagation activities, and development of educational outreach content. Personnel expenditures during this reporting period supported project coordination, tissue culture propagation activities, greenhouse management, educational development, and project implementation activities. Supply expenditures primarily supported laboratory setup, media preparation, greenhouse readiness, tissue culture consumables, and propagation-related infrastructure. Remaining project funds will continue to be expended in alignment with the approved budget, project

objectives, and implementation timeline to support propagation scale-up, acclimatization activities, educational dissemination, and future plant distribution efforts.

PROGRAM INCOME (IF APPLICABLE)

Source/Nature (i.e., registration fees)	Amount Approved in Budget	Actual Amount Earned
At-cost sales of tissue-cultured kava plants (will continue during the project period).	\$20,000	4,900
Total Program Income Earned		4,900

USE OF PROGRAM INCOME

Describe how the earned program income was used to further the objectives of this project.

Program income generated during this reporting period has been reinvested into propagation, educational outreach, and project implementation activities in accordance with the approved grant application.