The Okanagan-Kootenay Sterile Insect Release Program

Status Updates, as of January 29, 2015, on the Recommendations from the External Review

(9-13 June, 2014)

Recommendation	Status Update as of Jan 29, 2015
Program Management and Strategy Recommendations	
There is a need for an overall strategic program plan/approach for the delivery of services, with operational decisions based on survey data (damage and moth capture). Operations should use a combination of flexible tactics, the choice of which is based on sound scientific data (SIT, SIT/MD, variable release rates, sanitation, and banding, etc.).	An overall strategic program plan/approach has been developed and reviewed with external experts (attached).
Based on the experience with previous successful area-wide SIT programs, area-wide SIT releases are recommended for the whole Okanagan Valley during the entire season as a permanent suppression tool. Problem areas should be addressed with additional tactics.	The program is returning to sterile codling moth release as the primary control method for all of the program's service areas.
The suggested area-wide treatment strategy for 2015: Suggested blanket release rate for entire valley = 1 dish/acre/week Zone 2 & 3 hotspots (and defined surrounding area) = 2 dishes/acre/2x week + additional tactics Zones 2 & 3 integrate SIT with mating disruption in all orchards.	The program treatment strategy for 2015 is: Blanket releases for entire service area = 1 dish/acre/week. Additional dishes and mating disruption will be applied as defined in the action protocols, and additional tactics added as required.
Program protocols should be formalised that clearly define objective and transparent thresholds and triggers used to classify orchard priority levels and risk categories. These risk categories should identify hotspots and trigger additional tactics, including additional releases. Identified hotspots should be treated as a part of a bigger area.	Protocols have been revised and defined by staff.
Field service representatives should be engaged to help develop the threshold treatment levels and associated management and spray recommendations.	Staff met with BC Tree Fruits Cooperative field staff to determine orchard treatment levels and establish a joint communication plan for working with growers.
An annual technical meeting should be organised to review the program and engage stakeholders in program delivery. This should ideally include international technical experts in addition to local technical support (e.g. Washington Field Service).	To be planned for the end of the 2015 season.
Program should forge and strengthen academic ties with local and international universities to target applied research, address program needs, and identify potential staff.	Management is investigating possible partnerships with several universities with potential to address issues on transport, release, and expansions to scale and scope.

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Project management is encouraged to continue international promotion of the program to benefit from information flow, increase technical capacity, and increase brand recognition, especially if expansion of scope or scale is being considered.	The General Manager continues to target international promotion.
The organizational structure should be redefined, with the OAC reporting to the GM of OKSIR, who in turn reports to the board of directors.	Organizational chart has been updated to reflect change.
A technical committee (different from the OAC) should be formed to advise program management on strategic decision making (suggested membership: field service reps, industry reps, area-wide control specialist, SIT specialist, IPM specialist, Chair of the committee should be independent from the political board).	Technical committee to be developed and appointed by the Board Chair.
Program Operational Decisions	
Program should consider eliminating the zone designation and managing based on smaller neighbourhood units, with units based on common agricultural and ecological characteristics.	The program is beginning to move away from the zone designation in external communications.
Program should use existing GIS data to analyze block size, proximity to residential areas, and degree of isolation from other blocks.	Staff have identified the program that could complete this type of analysis, but SIR does not have a licence for the software.
Program needs spray records and analysis to evaluate program efficacy and cost-effectiveness.	Staff continue to work with individual growers and field service to access spray records. Some individual growers have complied with requests, but access on a program-wide basis remains difficult.
Program Staffing	
Priority 1: Need a full-time operational entomologist/ IPM specialist to serve as technical director. Until this person is in place, consider contracting technical advice for the 2015 season with special attention to hot spots and possibility of combining MD/SIT to increase suppressive pressure in hotspot areas.	No action to date. Staff are continuing work with the current IPM consultant. The General Manager is working to determine the value of hiring this out as a full-time position.
Priority 2: Need full-time methods development entomologist in the rearing facility in Osoyoos, especially if program is to expand scope or scale of rearing operations.	No action to date.
Program needs succession planning for all key full-time positions.	Management has begun succession planning, though planning is difficult with so many of the positions being seasonal.
Extension training required for field staff.	Possible extension training is being investigated, but again, training is made difficult for seasonal positions.

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Program Delivery	
The program should develop a communication plan around the strategic plan for the delivery of services—communicating to both technical and non-technical audiences.	A communication plan is being developed.
Need engagement strategy for growers to increase grower understanding, buy-in, and compliance (facility tours, etc.).	An engagement strategy will be built into the communication plan.
Rearing Facility	
Plan upcoming year's rearing production based on the program strategy.	This year's production levels have been calculated based on the 2015 program goals.
Need a back-up generator for essential service areas of the facility.	No action to date. Budget required is estimated at $50,000. Purchase has not been budgeted at this time.
Radiation Source	
The program must replace the current irradiation source within a timeframe that accommodates the future scope and strategic direction of the program (2-5 years). Refurbishing or recharging the current machine is not recommended, as the age of the machine makes mechanical failure probable.	Possible replacements are still being evaluated. The current machine will not be refurbished again. It is estimated that once a decision to purchase has been made, the replacement process will take 6-9 months.
Replacement with current x-ray technology is not recommended. The machines currently available are not reliable for use in an operational mass-rearing program.	X-ray technology is no longer being considered as a replacement.
Safety and Security	
Sterilization process should be better streamlined to increase biosecurity in the rearing facility.	The recommended adjustments have been made.
Transport and Release	
Evaluate feasibility of aerial release system for codling moth and evaluate its cost/benefit.	No action to date. There is potential for a trial through collaboration with a research institution.
Consider approaching IAEA for technical assistance/ advice setting up field trials on efficacy and moth quality through aerial releases .	No action to date.
Evaluate modifications to the ATV moth release device (e.g. canister oriented towards canopy rather than horizontally, warming in canister system before release, use of a warm-up compartment before release).	Management is pursuing a possible partnership that would have graduate students investigate possible improvements.
Some of the equipment (ATVs, cooler boxes) are showing wear and need to be replaced in order to maintain continued on-time delivery of high-quality insects.	Staff are completing inventory to identify equipment in need of replacement and sourcing appropriate replacements where required.

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Monitoring Program	
Analyze the efficacy of the buffer zones.	No action to date. Staff need to determine the value of completing this extra analysis.
Combine survey and spatial data to analyze hotspots including the potential impacts of urban and feral trees. In the high-prevalence areas, do more focused analysis on possible root causes (poor management, poor sanitation, feral source population, etc.).	No action to date.
Program should employ an ongoing robust, scientific sampling plan that may combine pre-harvest damage data, trap data, and band data, with two objectives: 1) evaluate overall program efficacy, with consideration of existing data set to ensure some degree of continuity 2) make operational decisions.	The program is continuing with the previous year's sampling plan, and management is seeking technical guidance.
Program should consider setting up cull data sampling program.	No action to date. Staff need to determine the value of setting up an additional sampling program that would require cooperation from the packing houses.
Program should track the number of orchards that meet the program goal of having less than 0.2% damage .	This is already being completed, and is currently nearly 90% of all orchards, and 98% of orchards where the program has been running longest.
Quality Control	
Implement field quality control protocol assessing: 1) temperatures throughout the moth delivery process 2) quality of insects at arrival to release site.	Collaborative research projects are being considered to enhance quality control protocols.
Develop quality control protocols for ensuring quality of moths during export process and establish export quality standards.	Collaborative research projects and being considered to enhance quality control protocols.
Future Program Directions	
To ensure long-term sustainability of the program, the program should evaluate possible expansions of scope and/or scale to diversify and supplement revenue streams. Pursuing any of these strategies would require full technical support and outside expertise.	The General Manager continues to target international promotion.
Possible scale expansions Sales of codling moth to other markets, off-season sales, excess capacity, etc.	The General Manager continues to explore possible expansions in scale.
Possible scope expansions Management scope—monitoring for other pest species as part of existing area-wide monitoring Product scope—rearing a second pest sp. Virus production and biocontrol agents	The General Manager continues to explore possible expansions in scope.