Core Eco Protocol

2025 growing season v. 3.4 – 3/12/2025

Growers must also complete supplements for apple or stone fruit

Deadlines for record submission
Eco Stone Fruit: June 27, 2025
Eco Apple: July 25, 2025

See page 28-29 for a list of revisions to this edition.
Changes to the 2025 protocols are highlighted in yellow.

EcoCertified™ is a project *of:*

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Download the most recent protocol at https://ipminstitute.org/services/eco-apple/

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Red Tomato's Eco Certified Program

Red Tomato is a nonprofit organization that helps family farmers survive and thrive by connecting them to customers who want high-quality local produce. For wholesale growers, they develop new markets and manage the sales, logistics and promotion needed to ensure success in a supermarket environment. For direct-market growers, they provide communications and marketing tools to assist in explaining Eco farming to the public.

Red Tomato has developed this protocol in partnership with farmers, scientists and agricultural professionals, to achieve reductions in the use of high-toxicity pesticides. Through our work together, we hope to contribute to a bountiful supply of quality, local foods with minimal pesticide residues, and to improve our soil and water resources, wildlife biodiversity, farmworker safety, farm stability and farmland preservation wherever apples and stone fruit are grown in the Eastern USA.

Our protocol is based on a reduced-risk program developed by researchers, consultants and growers, and generally follows guidelines for Integrated Production by the International Organization for Biological and Integrated Control of Noxious Animals and Plants (IOBC).

Practices contained in this protocol are considerably more expensive than conventional programs that rely on highly toxic pesticides. Our project works to incorporate economic incentives for farmers to adopt reduced-risk methods. We recognize that reducing toxicity is an ongoing process. Our goal is to improve continuously as we learn more about reduced-risk alternatives and what it takes to implement them *and* grow high-quality apples.

Roles and procedures

Red Tomato is the lead organization responsible for market approach and overseeing use of Red Tomato trademarks. Red Tomato also maintains ownership of the certification protocol. Decisions on program procedures and market approach will be made in concert with researchers, crop consultants, growers and others. Annually, Red Tomato and its partners review and evaluate the *Core Eco Protocol* and make adjustments where needed to continue to achieve our goals.

The IPM Institute of North America, an independent non-profit organization, is responsible for maintenance of certification standards making final decisions on standards, and approval of certification status to determine eligibility for use of Red Tomato trademarks. The Institute will coordinate inspection by third-party IPM professionals, review materials submitted by growers and inspectors, and make final determination on certification approvals.

An invaluable network of agricultural scientists, entomologists, plant pathologists, horticulturists, agronomists, and weed scientists from Cornell University, U. of Massachusetts, U. of Connecticut, U. of Rhode Island, U. of Maine, Penn. State U., Rutgers, Appalachian Fruit Research Station, and other institutions, have contributed (and continue to contribute) their research and insights to the creation and improvement of Eco Certified production standards.

Third-party auditors or the IPM Institute will arrange directly with growers for an on-site inspection. This inspection verifies compliance with the standards and has a special emphasis on evaluating compliance to criteria that go beyond the paperwork documentation and records submitted to the IPM Institute. On-site auditors will follow the auditing guidelines developed by the program.

Participating growers will be evaluated based on practices implemented which meet the *Core Eco Protocol and apple(pome) and/or stone fruit supplement documents.* A current version of the *Core Eco Protocol*, crop supplements and Quick Guide is available at https://ipminstitute.org/services/eco-apple/.

To apply for and maintain certification, the following documents must be submitted:

1. Complete *Core Eco Protocol* and Eco crop supplement apples (pome) and/or stone fruit. If certifying multiple crops only need to complete the *Core Eco Protocol* once.
2. Scouting records must include
    a. Trap counts, date, block(s), pest and result, e.g., captures per trap, mites per leaf, etc.
    b. Scouting records must document grower observations in the orchard and should include historical information on block and pest history to inform pest and disease spray decisions.
3. Pesticide, fertilizer, thinner, herbicides, mating disruption and plant-growth regulator application records submitted to the IPM Institute. Application records must be submitted electronically and include at least the date and time application started and ended crop, block(s), acreage, trade name and formulation of material applied (with EPA registration number, active ingredient, target pest for pesticides and duration of Restricted-Entry Interval), rate per acre (oz., gal. or lb./acre), application method, air temperature, average wind speed and direction during application.
        a. Spray records must include all applications with an EPA registration number including mating disruption, herbicide applications and rodenticides.
        b. Record keeping can be improved by using an electronic record- keeping spreadsheet, such as those offered by Penn State (Penn State Spray Record Keeping Spreadsheet) or Cornell University (TracApple).
4. Airblast sprayer and herbicide sprayer calibration records.
5. Submit supporting documentation for all relevant, selected advanced practices.

The IPM Institute of North America maintains confidentiality of all grower records which include, but are not limited to: C*ore Eco Protocol,* crop supplements, pest-monitoring records, weather data, pesticide, fertilizer, thinner and plant-growth regulator application records.

The IPM Institute will appoint an inspector during the first year of certification and every third year thereafter. The inspector will verify the information provided during an on-site audit and will be scheduled prior to marketing of certified fruit. Growers will be invoiced by the IPM Institute for the on-site audit and is separate from the annual fee paid for certification.

Provisions for emergencies

Contact the IPM Institute immediately at the earliest indication that an emergency is developing that cannot be managed without violating the certification standards, including applying for an exemption to apply a second nitroguanidine neonicotinoid (clothianidin, imidacloprid, thiamethoxam) in 2025. The IPM Institute will investigate the concern and if necessary, consult with scientific advisors to aid in assessment of the problem and determine if an exception to the protocol is justified. Participants may expect the following support from the IPM Institute and project advisors regarding handling requests in emergency situations:

1. IPM Institute will confirm receipt of requests for protocol exceptions within one business day.
2. A response to the request with proposed options and resolution will be completed within one to three business days. This time is needed to allow the IPM Institute to contact scientists and project advisors and investigate appropriate solutions.
3. Requests for a protocol exception after a violation has occurred will not be considered.

Removal of blocks from Eco Programs

Identifying blocks enrolled in Red Tomato Eco Programs should be listed on the Field/Block List on page seven and eight of the *Core Eco Protocol.* These should be submitted with certification materials on the due date listed for the crop. This information is used during desk and on-farm audits and only certified blocks will be listed on eco certificates.

If a situation arises that requires a block to be removed from the program and occurs after certification materials have been submitted, please contact the IPM Institute and Red Tomato immediately and provide the following information:

1. The block name, variety and acreage being removed from the program.
2. The reason for removal from the program, e.g., crop loss due to weather, poor crop quality, or application of prohibited pesticide.
3. If the reason for block removal was due to an application of a prohibited pesticide or violation of the pesticide-use restrictions, please provide the product trade name, active ingredient and formulation, application rate, variety and acres treated.

On-farm audit: In a year that an Eco Certified grower is due for an on-farm audit and experiences significant weather-related crop loss, the grower must communicate with Red Tomato and the IPM Institute as soon as the loss occurs/is realized and may request to delay on-farm audit until the following year. Exceptions may include, but are not limited to, complete crop failure, significant crop loss (% of total), hail, freeze event or drought.

Expectations from the grower:

- Submit self-assessment and supporting documentation on time.
- Pay recertification fee for acres sold under Eco label.
- Assessment of acreage to be certified.
- Ony acres enrolled in current year can be sold under Eco Certified label.
- Timely communication with the IPM Institute and Red Tomato to discuss crop status and options.

What you can expect from IPM Institute and Red Tomato:

- The IPM Institute will follow up to confirm blocks that should be removed and discuss and address any questions or concerns relating to the block removal.
- The IPM Institute will issue an updated certificate to the grower and Red Tomato.
- Red Tomato will follow up with any questions and guidance relating to the use of Red Tomato Eco trademarks and confirm/determine if any fruit from the removed block has entered the supply chain.

Protocol scoring and practice verification

Guidelines for evaluating protocol practices for growers and auditors are outlined at the beginning of each protocol section. The following outlines what growers should expect when a protocol non-compliance has been identified:

- Minimum Requirements minor non-compliance: A minimum requirement that has not been fully implemented or scored as a “Fail” and does not threaten the integrity of the Red Tomato Eco Trademarks. The grower will be notified of the non-compliance in their audit report and no corrective action is required during that certification year. **If the same minor non-compliance is identified in subsequent years, the auditor or IPM Institute may recommend withholding certification until the non-compliance is corrected.**

- Minimum requirements major non-compliance: A minimum requirement that has not been fully implemented or scored as a “Fail” and whereby allowing certification and use of Red Tomato Eco Trademarks threatens the integrity of the Eco Program. The grower will be notified in writing and verbally and given the opportunity to correct the non-compliance during the certification year. Certification will be withheld until the non-compliance is addressed. If the major non-compliance cannot be corrected, no certification will be awarded.

- Pesticide use restrictions minor non-compliance: A violation of a pesticide-use restriction for any pesticide listed as “Use with Restrictions”. The grower will be notified of the non-compliance in their audit report and verbally. Corrective action is required for any planned pesticide applications that remain during that certification year. If non- compliance is not corrected, the auditor or IPM Institute may recommend withholding certification.

- Pesticide use restrictions major non-compliance: If a prohibited or “Do Not Use” listed pesticide is applied, no certification may be awarded for the blocks that received the treatment of the prohibited pesticide.

- Advanced practices: No points will be awarded to advanced practices that are scored by the grower and found to not be fully implemented during on-farm or desk audits. If the grower is interested in receiving credit for this advanced practice, they are encouraged to contact the IPM Institute to discuss what additional criteria must be met to receive credit during the certification year.

-  Pollinator Bee Icon indicates a practice which supports pollinator protection. Pollinator protection in Eco Certified is defined as any practice which prevents pesticide exposure and/or habitat loss to pollinators. This icon has been added to clearly identify practices outside of Section 4. Pollinator Protection, which support pollinator conservation, reduce habitat loss and mitigate the risk of pesticide exposure to pollinators.

Core Eco Protocol Cover Sheet

Grower name: _____

Business name: _____

Physical address: _____

Phone: (___) _____ Cell phone: (___) _____

_____

Email address: _____

Website: _____

Field/Block List. Print additional pages if enrolling more than twelve fields or blocks. List blocks covered by the *Core Eco Protocol* below. Blocks with the same management practices (that will earn same scores throughout this assessment) can be grouped together as one block. Attach additional pages if needed to list all blocks. **Important:** If differences in the way individual blocks are managed impacts a response on this Core protocol, they should be listed as separate blocks. For example, if apple maggot is controlled by trapping in only one block, list and score that block as a separate block.

Total Eco Certified acres: _____

1. Crop:_____ Block name(s): _____

cultivar(s): _____

acres and estimated annual production (bu.): _____

2. Crop:_____ Block name(s): _____

cultivar(s): _____

acres and estimated annual production (bu.): _____

3. Crop:_____ Block name(s): _____

cultivar(s): _____

acres and estimated annual production (bu.): _____

4. Crop:_____ Block name (s): _____

cultivars: _____

acres and estimated annual production (bu.): _____

Field Block List

5. Crop:_____Block name(s): _____

cultivar(s): _____

acres and estimated annual production (bu.): _____

6. Crop:_____Block name(s): _____

cultivar(s): _____

acres and estimated annual production (bu.): _____

7. Crop:_____Block name(s): _____

cultivar(s): _____

acres and estimated annual production (bu.): _____

8. Crop:_____Block name (s): _____

cultivars: _____

acres and estimated annual production (bu.): _____

9. Crop:_____Block name(s): _____

cultivar(s): _____

acres and estimated annual production (bu.): _____

10. Crop:_____Block name (s): _____

cultivars: _____

acres and estimated annual production (bu.): _____

11. Crop:_____Block name (s): _____

cultivars: _____

acres and estimated annual production (bu.): _____

12. Crop:_____Block name (s): _____

cultivars: _____

acres and estimated annual production (bu.): _____

Core Eco Protocol

1. Operations and Management

Audit guidance: Grower can describe how their organizational structure, record keeping, communication practices, and continuous-improvement efforts facilitate successful Eco Fruit production.

A. Minimum Requirements	Pass, Fail or N/A
1. What audit or inspections occurred on your farm from third parties, the state or federal government? **Please select all that apply** [S]. Note: Please have documentation of audits, inspection/certification certificate available for on-site audit. a) Good Agricultural Practices (GAP) b) Food Safety (non-GAP) c) Worker Housing d) Occupational Safety and Health Administration (OSHA) e) Worker Protection Standard (WPS) f) Other(s) (Please list):	
2. Are all applicable local, state, and national laws, codes and regulations met which govern all aspects of applications of pesticides, nutrients, amendments, irrigation and other inputs? [S]	
3. Are pesticides no longer in use or no longer registered for use returned to dealer or disposed of at the next collection? While in storage, are obsolete pesticides clearly marked and separated from pesticides in current use? [S]	
4. Has grower attended one or more educational meetings within the last year? [D] List meeting name, date and brief description (add pages if necessary):	
5. Do application records include at least the **date** and **time application started and ended**, **crop**, **block(s)**, **acreage**, **product name** and formulation of material applied (with **EPA registration number**, **active ingredient**, target pest for pesticides and **duration of Restricted-Entry Interval**), rate per acre, application method, air temperature, wind speed and direction? [D] Note: Items highlighted in bold are required by the US EPA Worker Protection Standards for Agriculture. Each bold item not included in the record will count as one major non-compliance. Items not in bold and not included in the record will each count as one minor non-compliance. For more information visit: http://pesticideresources.org/wps/hosted/quickrefguide.pdf.	
6. Does grower belong to state and/or regional grower organization(s), outside of Red Tomato programs? [D] List organizations:	
7. Is only fruit of sound internal and external quality labeled and sold under Red Tomato trademarks? [S]	
8. Are clean toilet and hand-washing facilities available to field, harvest and packing house staff? [S] Note: Soap must be available at all hand-washing facilities. Hand sanitizer may also be present but may not be used as a substitute for soap.	

Operations and Management (Continued)		
B. Advanced Practices	**Points eligible**	**Points earned**
1. Are pesticide costs per acre documented for all applications in spray records? [D]	1	
2. Do workers handling or applying pesticides receive an annual medical examination or physical to ensure fitness for job duties? [S] Note: Acceptable documentation includes a list of workers who participated in a medical exam. Workers and physicians must sign off documenting the exam occurred. Individual exam records do not need to be kept on file or shared in accordance with HIPAA privacy rules.	2	
3. Has grower hosted a field day or other production-related educational meeting within the last three years? [D] Attach document with date, name and description of event(s): _____	3	
4. Has grower conducted/participated in on-farm research using control (untreated) trees for comparison within the last three years? [D] Note: In scouting records or separate documentation, describe each experiment, its purpose and dates: University research also acceptable, include name of individual doing research with and brief description. Attach additional pages if necessary:	4	
5. Is orchard represented on 50% or more of the monthly Eco Apple conference calls? [D]	1	
6. Does the cider production facility (if any) have a written HACCP plan? [S]	2	
7. Does the packing facility have a written Standard Sanitary Operating Procedures plan? [S] Note: May be required by USDA for farms with packing facilities.	2	
8. Are packing line water flumes chlorinated or otherwise treated to reduce potential for post-harvest diseases? [S]	1	
9. Is the farm third-party certified for USDA Good Agricultural Practices (GAP) or similar Global Food Safety Initiative recognized food safety scheme, e.g., GLOBAL G.A.P., PrimusGFS? [S]	3	
10. Does the farm have a written Food Safety Plan which meets either USDA GAP, GLOBAL G.A.P. (Harmonized Produce Safety Standard), or PrimusGFS? [s] Note: Basic food safety requirements to meet FSMA or GAP certification. Provide a plan or other verification that basic food safety practices are being met.	2	
Operations and Management: Total points eligible	21	
Total points earned		

Superscripts indicate practice-verification process. Reference the following throughout entire document:

[D] Verified during desk audit via submitted paperwork

[S] Verified during site audit

2. Ecosystem and Water Conservation

Audit guidance: The grower can explain their rationale for implementing practices which maintain and improve soil health, monitor/regulate irrigation, monitor tree health, and minimize or mitigate soil erosion, by describing the observed benefits, and how the practice is implemented and maintained.

A. Minimum Requirements	Pass, Fail or N/A
1. Are visibly eroded areas minimal and when found, are they corrected in a timely manner? **Please select all erosion mitigation strategies that are implemented**: S A. Culvert(s) B. Water diversion C. Retention pond(s) D. Other(s) (Please list): Note: Applicable to all enrolled acres, including adjoining roads and farmstead.	
2. . Does a vegetated buffer separate surface water from edge of crop by at least 60 feet? S	
3. Does pesticide mixing occur at least 120 feet from well heads? S Note: Some states may require pesticide mixing to be further than 120 feet from well heads.	

B. Advanced Practices	Points eligible	Points earned
1. Is no irrigation used? S Note: If earning this point, skip to question 8. Do not enter points for questions 2-7.	1	
2. If irrigation is used, is drip or trickle installed to ensure adequate water supply and minimize water use and foliage wetness? S	1	
4. If irrigation is used, are automated shutoff devices used? S	1	
4. If overhead irrigation is used, are applications timed to minimize risk of spreading plant pathogens? S Note: Overhead irrigation may be used for frost protection.	1	
5. Is irrigation determined by crop need, using systematic and science- based measures, e.g., monitoring soil moisture and visual assessment of plant stress? S Note: Monitoring data from NEWA or on-farm weather station are available for inspection and grower can describe how data is used to time irrigation.	1	

2. Ecosystem and Water Conservation (Continued)

B. Advanced Practice	Points eligible	Points earned
6. Is rainwater or snowmelt captured through retention ponds for irrigation? [S]	1	
7. Is irrigation use efficiency calculated? [S]	2	
8. Is tile drainage installed and maintained in poorly drained soils, or are trees not planted in poorly drained soils to improve tree health and minimize disease? [S]	2	
9. Is a water conservation plan in place which addresses water uses for irrigation, washing and cooling. Does the plan also outline staff training on minimizing water use in farm activities and practices and/or uses of technology to increase use efficiency? [S] Note: Water conservation plan is available for site auditor to review.	3	
10. Do tree rows planted along slopes with high risk for erosion follow contours? [S] Note: Slopes greater than 10% or hydrologic soil classes with high- erosion potential.	1	
11. On non-paved roads where erosion occurs, are water bars installed to reduce erosion? [S] Note: Grower can describe how often water bars are maintained and where they are located.	1	
12. Are wind breaks installed and maintained on sites at risk of wind-eroded soil? [S]	1	
13. Are any acres of the farm currently enrolled in an NRCS program which supports IPM or other conservation practices? [S] List program name, acres enrolled and type of land. Note: Additional information on NRCS programs and initiatives available online from NRCS.	3	
Ecosystem, Soil and Water Conservation: Total points eligible	19	
Total points earned		

Superscripts indicate practice-verification process. Reference the following throughout entire document:
[D] Verified during desk audit via submitted paperwork
[S] Verified during site audit

3. Pesticide-Risk Reduction

Audit guidance: The grower can explain potential sources of pesticide risk on the farm and how non-chemical practices, cultural/horticultural practices, pest-management decisions and pesticide-application methods are implemented and maintained to minimize pesticide risk.

A. Minimum Requirements	Pass, Fail or N/A
1. Are plant and tree canopies maintained to allow penetration of light, air and spray material using pruning or plant growth regulators, e.g., Apogee (prohexadione calcium)? [S]	
2. Are pesticide and nutrient application equipment calibrated at least annually? Records maintained must include name of person performing calibration, date and equipment description. Procedures, results and adjustments from calibration must also be included in documentation submitted electronically, with completed protocol. [D] • Calibration for airblast sprayer: https://extension.psu.edu/air-blast-sprayer-pre-calibration-instructions • Calibration for boom sprayer: extension.colostate.edu/docs/pubs/farmmgt/05003.pdf • Calibration for rotary spreader: pesticidestewardship.org/calibration/Pages/RotarySpreader.aspx • Calibration for a drop spreader: pesticidestewardship.org/homeowner/how-to-calibrate-a-drop-spreader Note: Where rented equipment is used, follow supplied instructions for operation. Tractor ground speed needs to be calibrated if travel speed influences application rate. Mark with 'Yes' if rented sprayers or spreaders are used:_____. Note: If you're using a Raven or other GPS system, verify ground speed and note if GPS system used.	
3. Is pesticide drift minimized by monitoring current wind direction and speed using one of the following? [S]: **Please select all that apply** A. Hand-held monitor B. Weather station C. Online resources with real time wind-speed data Pesticide drift resources: pesticidestewardship.org/drift/Pages/default.aspx	
4. If grain-based rodenticides (corn, oats) are used, are they applied in bait stations or burrows only? [D] Note: Rodenticide applications must be included in spray records, include date and blocks treated. Records must note if grain based. Including rate per acre not necessary.	

3. Pesticide-Risk Reduction (Continued)

B. Advanced Practices	Points eligible	Points earned
1. Are lower-risk pesticides identified and used based on outcome from the Pesticide Risk Tool pesticide risk analysis? [S] Note: Grower can describe what high-risk pesticide was used the previous season and what lower-risk pesticide replaced the application.	1	
2. Is a full-block application replaced by a partial-block pesticide application? [D] Note: One point per application may be scored for a maximum of two points. Note: Partial blocks may be documented by listing acres treated compared to total acres of block, e.g., 6/10 acres treated or listing varieties treated.	1 or 2	
3. Is a full-block pesticide application replaced by an application to block perimeter? [D] Note: One point per application may be scored for a maximum of two points. Note: Spray records clearly identify which perimeter of a block was treated. Note: Perimeter sprays include both sides of a tree row up to the first four rows or up to 50 feet from the orchard edge. Applications to perimeter rows meet label restrictions on number of applications to the crop and total amount of active ingredient applied.	1 or 2	
4. Is a full-block pesticide application replaced by an alternate-row-middle (ARM) application? [D] Note: One point per application may be scored for a maximum of two points. Note: Indicate on spray record when an ARM application is made. Note: Additional ARM sprays should target opposite row from previous treatment. ARM sprays may count as half of one application. Pesticide records must document which rows were treated. For considerations on ARM sprays visit, sprayers101.com/alternate-row-middle-spraying.	1 or 2	
5. Are no synthetic pyrethroids used as insecticides? [D]	1	
6. Are tractor cabs plus required personal protective equipment used to protect applicators during pesticide applications? [S]	2	
7. No 'DANGER' labeled pesticides are used. [D]	1	
8. No 'WARNING' labeled pesticides are used. [D]	1	
9. Are spray patterns for pesticide application equipment evaluated and adjusted by assessing droplet size and coverage using water-sensitive cards or dyes, sprayers101.com/confirm-coverage-with-water-sensitive-paper? [S] Note: Results are available for review, including changes made to the sprayer or canopy management, as a result of the test.	2	

3. Pesticide-Risk Reduction (Continued)		
B. Advanced Practices	**Points eligible**	**Points earned**
10. Are pre-harvest damage assessments completed on all Eco blocks prior to the start of harvest? [D] Note: A pre-harvest damage assessment is a sampling of a known quantity of fruit from each block. Each incidence of pest injury is documented and is used to make improvements in management the following season. A pre- harvest damage assessment can provide a more accurate representation of percent injury compared to a pack-out report that may be skewed if pickers are not harvesting damaged or low-quality fruit. Note: Document and submit pre-harvest damage assessment in scouting report. Proof of this practice includes a scouting report which identifies blocks, varieties and injury observed, e.g., "2% plum curculio injury on the north perimeter of block A". Include this with your scouting reports."	1	
11. Is an on-site Network for Environment and Weather Applications (NEWA) station used for pest and disease management? newa.cornell.edu. [D] List NEWA station used:	3	
12. Is a spray-control system used to regulate pesticide application rates? [S] Note: If you're using a Raven or other GPS system, verify ground speed.	1	
13. Are air induction nozzles used to reduce pesticide drift? [S]  https://sprayers101.com/wp-content/uploads/2015/06/2012_AI.pdf	1	
Pesticide-Risk Reduction: Total points eligible	20	
Total points earned		

Superscripts indicate practice-verification process. Reference the following throughout entire document:

[D] Verified during desk audit via submitted paperwork

[S] Verified during site audit

4. Pollinator Protection

Audit guidance: The grower understands and can describe the impacts of pesticide exposure and habitat loss on pollinator health; the benefits of pollinator-habitat conservation; practices which mitigate pesticide exposure and other practices which support healthy and abundant pollinator populations and relate this understanding to how the practices are implemented and maintained.

A. Minimum Requirements	Pass, Fail or N/A
1. Are orchard borders assessed for pollinator habitats (nesting and forage sites), and if present are these habitats protected from drift using one or more of the following mitigation strategies? [S, D] Please select all that apply: a. Pesticides toxic to pollinators are not applied when native pollinators are actively foraging. b. Windspeed and wind direction is monitored and used to prevent pesticide drift to pollinator habitats. c. Maps outline location of pollinator habitats are used to educate applicators on sites where drift must be avoided. d. Other, please list: Note: • Xerces Society, pollinator habitat assessment guides, https://xerces.org/pollinator-conservation/habitat-assessment-guides • Xerces Farms and Agricultural Landscapes guide, https://xerces.org/publications/habitat-assessment-guides/pollinator-habitat-farms-and-agricultural-landscapes • For information on how to reduce bee poisoning, https://www.oregon.gov/oda/Documents/Publications/PesticidesPARC/PollinatorProtection.pdf • Best management practices to protect pollinators, https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators.	
2. Are pesticides with an EPA pollinator toxicity advisory box or bee specific language under “Specific Use Directions” on the label not applied between pink and end of crop bloom? (See link on pollinator advisory above) [D] EPA pollinator toxicity advisory box on labels: https://www.epa.gov/sites/default/files/2013-11/documents/bee-label-info-graphic.pdf Note: See “specific use restrictions”, “bee box” or “environmental hazards” for information on product toxicity to bees.	

B. Advanced Practices	Points eligible	Points earned
1. Are non-blooming buffers of ≥ 60 feet maintained around all field borders where pesticides toxic to pollinators are applied? [S] Note: Buffers prone to collecting pesticide drift are mowed to eliminate bloom in ground cover prior to pesticide application toxic to pollinators.	1	
2. If managed beehives reside on the farm year-round, are they monitored for health, their diseases controlled and documentation of monitoring is available for review, e.g., date and description of monitoring activities? [S] Note: Regular, seasonal inspection and treatment of hives for Varroa mites and disease with accompanied documentation.	2	

4. Pollinator Protection (Continued)		
B. Advanced Practices	**Points eligible**	**Points earned**
3. Is established pollinator forage habitat which provides season-long bloom available for managed and wild pollinators? Converted acreage to native pollinator habitats: ○ One to five acres designated pollinator habitat: two points. ○ Each additional designated habitat totaling block of five acres: one point. ○ Maximum of four points may be scored for a total of 15 acres designated to pollinator habitat. Note: Managed pollinator habitat includes a blend of native flowering plant species that offer a continuous bloom throughout the growing season, ideally providing at least three blooming species at any time. Note: Establishing a diverse pollinator habitat on designated land around installed solar panels could be included in acreage counted. The Xerces Society recommends pollinator habitat should be, at a minimum, 125 feet from crops treated with neonicotinoids and 60 feet from all pesticides applied with an airblast sprayer, https://xerces.org/publications/fact-sheets/guidance-to-protect-habitat-from-pesticide-contamination	2 – 4	
4. Commercially produced bumblebee hives are not used for open pollination. [S]	1	
5. Is pollination accomplished exclusively with native bees? [S]	2	
6. Is pollinator activity monitored during bloom through participation in the Northeast Pollinator Partnership, northeastpollinatorpartnership.org/.[S] Note: Application provides the farmer with a tool to document and create a baseline understanding of pollinators present in their orchard. This baseline is a tool to measure whether the practices being implemented are generating the results and improvements the orchard is looking for.	1	
7. Is blooming ground cover in the drive row reduced to protect pollinators from drift using non-chemical strategies? Note: Growers should be able to describe the location and how often or what conditions would trigger mowing, e.g., is it timed before or after sprays, etc.	1	

Superscripts indicate practice-verification process. Reference the following throughout entire document:

[D] Verified during desk audit via submitted paperwork

[S] Verified during site audit

4. Pollinator Protection (Continued)

B. Advanced Practices	Points Eligible	Points earned
8. Is nesting habitat for wild pollinators created and managed throughout the growing season? [S] Note: Wild bee housing placed in and around forage and pollination target areas. Housing can include not removing dead trees (when it's safe to do so), presence of hollowed out reeds/stems of bushes or erecting bee housing. Establishing a diverse pollinator habitat on designated land around installed solar panels could be included in acreage counted.	1	
9. Ongoing education: Has grower has attended a training on pollinator conservation (i.e.., pollinator habitat, importance of native pollinators, etc.)?	1	
Pollinator Protection: Total points eligible	14	
Total points earned		

5. Orchard Floor Management

Audit guidance: The grower can explain their rationale for implementing cultural/horticultural practices which minimize excess herbicide use; describe how insect and disease management is improved through orchard floor management; and describe their integrated approach to weed management which best suits the site and weed pressure on the farm.

A. Minimum Requirements	Pass, Fail or N/A
1. To suppress insect pest and disease inoculum, is pruning debris remaining in the field: **Please select all that apply** [S]? A. Flail chopped B. Mowed C. Removed	
2. Do herbicide strips under trees not extend into row middles or aisles? [S]	
3. Is the herbicide mode of action rotated between each application? [D] Note: Back-to-back applications of herbicides with the same mode of action may be applied if tank-mixed with another herbicide with a different mode of action, where consistent with Extension recommendations and label restrictions.	

Superscripts indicate practice-verification process. Reference the following throughout entire document:

[D] Verified during desk audit via submitted paperwork

[S] Verified during site audit

5. Orchard Floor Management (Continued)

A. Minimum Requirements	Pass, Fail or N/A
4. Are no more than three applications of an herbicide made per season to the same application site? If a fourth spot-treatment is made because desired control is not achieved, is it supported with documentation which identifies weed species not controlled during previous applications? [D]	
5. Are row middles or aisles (drive rows) (Please select all that apply)?[S]: A. Sod B. Mulch covered C. Cover cropped year-round.	

B. Advanced Practices	Points eligible	Points earned
1. Are weeds targeted with herbicide applications scouted at least once per season and weed species present and location, e.g., tree row or row middle, are documented? [D]	1	
2. Are invasive weeds attractive to pollinators removed from orchard and field borders? [S]. 	1	
3. Are non-chemical method(s) used to manage weeds and reduce dependence on herbicides on one to ten acres of orchard? An additional point may be scored where practice is implemented on more than ten acres [s] (Please select all that apply): A. Cultivation B. Aeration C. Over-seeding D. Avoiding compaction E. Close mowing/String trimming F. Mulching Note: Practice receives the same number of points regardless of how many practices are selected.	1 - 2	
4. Is groundcover managed to eliminate alternate hosts for plant bugs, e.g., winter-annual weeds, chickweeds, dandelion, clovers, vetch and other legumes? [S] 	1	
5. Is alternate-row mowing done to preserve beneficials?  [S]	1	
6. Are no herbicides used?	2	
Orchard Floor Management: Total points eligible	8	
Total points earned		

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[S] Verified during site audit

6. Soil Health Management

Audit guidance: The grower can explain their rationale for implementing practices which build soil health; describe how soil health is improved from the practices.

A. Minimum Requirements	Pass, Fail or N/A
1. Are results from soil and/or foliar analyses used to calculate nutrient application rates, minimize excess nutrient use and limit potential for nutrient pollution? Is timing of any applications consistent with available Extension or University guidelines? [S, D] Note: Soil testing results are available for inspection and is completed at least once every three years and includes soil organic matter, pH, nitrogen, phosphorous, potassium, calcium and magnesium. Submit test results with desk audit, when tested at least every three years.	
2. Is one in-field advanced indicator of soil health quantitatively assessed once every three years? [S, D] Check all that were completed: ☐ Aggregate stability [1, 2, 3] ☐ Earthworm count [2] ☐ Infiltration rate [2] ☐ Soil compaction [1, 2] [1] The USDA-NRCS Soil Quality Test Kit Guide describes procedures and an interpretive section for each test, https://nrcspad.sc.egov.usda.gov/DistributionCenter/product.aspx?ProductID=385. [2] Available with the Cornell Comprehensive Assessment of Soil Health - Standard Soil Health Analysis Package, https://soilhealthlab.cals.cornell.edu/testing-services/soil-health-analysis-packages/. [3] Testing available at Harrington's Organic Land Care, https://harringtonsorganic.com/service/lab-services/ . [4]Slakes free smartphone app, Soil Health Institute, https://soilhealthinstitute.org/our-work/initiatives/slakes/ Note: Test results must be available for review during site audit. Note: Soil organic matter and micronutrients removed as “advanced indicators”, since these are provided on standard soil tests.	

Superscripts indicate practice-verification process. Reference the following throughout entire document:

[D] Verified during desk audit via submitted paperwork

[S] Verified during site audit

6. Soil Health Management (Continued)

B. Advanced Practices	Points eligible	Points earned
1. Is one lab-based advanced indicator of soil health measured at least once every three years? [D] ☐ Available water capacity[1] ☐ Active carbon[2] ☐ Soil nitrates[2] ☐ Soil food web [3] ☐ Bulk density [2] [1] The USDA-NRCS Soil Quality Test Kit Guide describes procedures and an interpretive section for each test, https://nrcspad.sc.egov.usda.gov/DistributionCenter/product.aspx?ProductID=385. [2] Available with the Cornell Comprehensive Assessment of Soil Health - Standard Soil Health Analysis Package, https://soilhealthlab.cals.cornell.edu/testing-services/soil-health-analysis-packages/. [3] Testing available at Harrington's Organic Land Care, https://harringtonsorganic.com/service/lab-services/ .	1	
2. Is compost used to supplement or replace commercial fertilizer in non-bearing and/or bearing orchards? [S]	1	
3. During orchard renovation are practices used to improve infiltration, aeration, retain water and breakup compaction? [s] Select all that apply: a. Tillage radishes are used to break up compaction and improve infiltration. b. Sorghum-sudangrass or another cover crop used to improve organic matter and water retention. c. Sub-soil ripping without cultivation in drive rows to aerate and improve water infiltration. d. Soil amendments, e.g., compost, biochar, etc. added to the planting row at site preparation. e. Other:	2	

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[S] Verified during site audit

6. Soil Health Management (Continued)

B. Advanced Practices	Points eligible	Points earned
4. Are practices implemented to improve soil health based on results identified in advanced soil health indicators and then soil health indicator is retested after three years? [D] In one sentence please identify the practice and blocks practice is implemented on: During an on-farm audit, the grower should be able to: • Describe the soil-health concern and identify which indicator was used to measure soil health. • Describe the practice that was implemented, maintenance needs and frequency of maintenance. • Clearly identify location of blocks covered in the practice (Maps are not required but helpful). • Results of initial assessment of soil health indicator and results after third year of practice implementation are available for review during on-farm audit. • Notes, photos, receipts of purchases, etc. showing implementation of practice are available for review during on-farm audit.	3	
5. Does the farm have a policy which guides staff on how to mitigate the risk of soil compaction from vehicle or implement use? [D, S] Policy could include, but not limited to the following: • Instruct employees to limit travel in orchard during wet periods or avoid use of certain equipment or implements during wet periods. • Staff are instructed to park vehicles in a specific location and walk to worksite during wet periods. • Tires on vehicles, tractors, UTVs and trailers driven through the • orchard are upgraded to taller and wider sizes that will minimize compaction. • Practice is documented and submitted electronically with protocol.	1	
6. Is a mulching program in place to build soil heath and suppress weeds? [S] Note: Practice longevity is estimated at three years per application of mulch. Note: Recommended to use woodchip mulch that is clean and free of contamination and >1" per chip should be applied 4-6" thick to the current herbicide strip. Points for mulching systems: • One to ten acres: 3 points. • Each additional block of five acres, 0.5 points may be scored and up to a maximum of 1.5 additional points, which equals an additional 15 acres.	3 – 4.5	

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6. Soil Health Management (Continued)

B. Advanced Practices	Points eligible	Points earned
7. During orchard renovation, are cover crops used to maintain groundcover in the entire orchard block, prior to orchard establishment? [S] Note: Cover crops should be maintained and where necessary, replanted to keep living roots in the soil year-round. Note: Consult with local Extension or USDA-NRCS guidelines to determine appropriate cover crops for soil type and climatic conditions.	1	
8. Are herbicides only applied under tree canopy and not used in alleyways/drive rows, including pre-emergent herbicides? [D] Note: Herbicide spray records indicate target site, i.e., drive row.	1	
Soil Health Management Total Points Eligible	14.5	
Total Points Earned		

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[S] Verified during site audit

7. Energy and Waste Management

Audit guidance: The grower can describe how they manage energy consumption and waste generated, to reduce soil, water and air pollution; conserve energy; minimize waste to landfills and quantify energy use on the farm.

A. Minimum Requirements	Pass, Fail or N/A
1. Are pesticide containers (including paper), plastics, rubber or industrial products disposed of properly and not disposed of by burning? S	
2. Are buildings which are heated or cooled insulated? S	

B. Advanced Practices	Points eligible	Points earned
1. Is energy-efficient lighting used in office, packing and storage facilities, e.g., compact fluorescent or LED lighting? S Note: Upgrade lighting fixtures, replace older lamps with LED or compact fluorescent bulbs, replace incandescent bulbs with compact fluorescent, install timers and motion detectors to ensure lights will turn off when not in use. Clean light fixtures frequently. https://farm-energy.extension.org/farm-lighting-energy-efficiency-checklist-and-tips/.	1	
2. Is solar or wind used to meet any amount of on-farm electricity needs? Two points Where state incentives for solar are available, the farm has maximized their eligibility for total size of the installation: one additional point.	2 – 3	
3. Is biodiesel or ethanol used to meet any amount of fuel needs? S	1	
4. Have new energy conservation measures been implemented in storage facilities? D List: Note: May claim for points during entire period of cost recovery on investment plus an additional three years. Notes: On-site refrigeration system checklist- see quick guide. https://farm-energy.extension.org/farm-shop-energy-efficiency-checklist-and-tips/	1	
5. Are employees trained on how to minimize energy consumption for farm activities? S Note: Outline of training content is available or signage around farm which encourages energy conservation is evident to serve as reminders for employees.	1	

7. Energy and Waste Management (Continued)

B. Advanced Practices	Points eligible	Points earned
6. Are tractors and other motorized equipment used efficiently and effectively to reduce overall fuel consumption, e.g., do not let diesel engines idle longer than 5-10 minutes; tractors are operated in economy mode when appropriate, e.g., spraying, mowing; tractors are maintained to maximize efficiency? [S] Note: More information on this practice is explained in, "*Farm Practices to Improve Energy Efficiency",* University of Wisconsin Extension, https://farm-energy.extension.org/introduction-to-energy-efficiency-and-conservation-on-the-farm/	1	
7. Has a third-party energy audit of facilities been completed within the last six years? [S] https://farm-energy.extension.org/wp-content/uploads/2019/04/Tree-Fruit-Module-Overview.pdf	3	
8. Which of the following materials are recycled? [S]		
a. Paper and cardboard	.25	
b. Plastic	.25	
c. Aluminum	.25	
d. Glass	.25	
e. Used pesticide containers where consistent with regulations	.25	
f. Batteries (excludes lead-acid batteries)	.25	
g. Computers and other recyclable office equipment	.25	
9. Is energy use efficiency monitored using the Stewardship Index for Specialty Crops, https://www.stewardshipindex.org/_files/ugd/917763_c357f742461a43dc8fddd850349ecb06.pdf ?[S]	3	
10. Is a pesticide mixing and loading facility used to catch and retain pesticide rinsate? [S]	3	
11. Are cover crops established prior to contracted solar panel installation to reduce erosion and soil compaction? [S] Note: Planting and establishing a cover crop at site of future solar panel installation to help mitigate soil erosion and compaction. See pollinator protections advanced practices (4.B.3 and 4.B.9) for establishing pollinator habitat under installed panels.	1	
Energy and Waste Management: Total points eligible	19.75	
Total points earned		

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[D] Verified during desk audit via submitted paperwork

[S] Verified during site audit

Score Card				
Years of Participation	Core Eco Protocol	Apple Supplement	Stone Fruit Supplement	
1-3 years	25	4	3	
> 3 years	30	8	6	
CORE ECO PROTOCOL				
Points Required			**Points Eligible**	**Points Earned**
Operations and Management			21	
Ecosystems, Soil and Water Conservation			19	
Pesticide-Risk Reduction			20	
Pollinator Protection			14	
Orchard Floor Management			8	
Soil Health Management			14.5	
Energy and Waste Management			19.75	
		Total-Points Possible	**116.25**	
			Total Points Earned	
ECO CROP SUPPLEMENTS				
Eco Apple			65	
Eco Stone Fruit			40	
			Total Points Earned	

Participating Grower Affidavit and Agreement

1. Participating grower certifies that the attached *Core Eco Protocol* and records represents a complete and accurate account of grower practices on acres to be certified at the time the *Core Eco Protocol* is completed and reviewed by the inspector and the IPM Institute for the purposes of certifying participating production.

2. Participating grower agrees to allow access to farm and records for scheduled and unannounced inspections to verify compliance with program requirements including information provided on the *Core Eco Protocol* and use of Red Tomato trademarked packaging and promotional materials.

3. Participating grower agrees that Eco certification is approved solely by the IPM Institute of North America, Inc. and if granted, is for one season only and only for product from participating production units reported in this *Core Eco Protocol* and certified by the IPM Institute.

4. Participating grower agrees not to market any product under Red Tomato eco trademarks, including use of Red Tomato eco packaging or other Red Tomato eco promotional materials or identification, until eco certification for the product is approved in writing by the IPM Institute. Participant further agrees that if certification is not approved, no product will be marketed under the Red Tomato eco trademarks and no eco packaging or promotional materials bearing Red Tomato eco trademarks will be used. Participant agrees to bear any costs associated with denial of certification including the cost of Red Tomato eco trademark packaging and promotional materials purchased by the grower.

5. Participating grower acknowledges that participation does not constitute or imply an endorsement by the IPM Institute of North America or Red Tomato of the participating grower or operation.

Participating Grower Name	Signature	Date

Submission Checklist

____ a. Completed Core Eco Protocol

____ b. Completed Apple or Stone Fruit crop supplements

____ c. Pesticide, fertilizer, thinner, herbicide, mating disruption and plant-growth regulator application records for blocks to be certified. See page 4 for required information.

____ d. Scouting records for blocks to be certified. See page 4 for required information.

____ e. Certification fee. The annual-certification fee is based on the total number of acres enrolled in the program and does not cover costs of on-site audits required every three years. Fees for on-site audits are payable directly to the auditor.

0 – 9 acres	$475
10 – 24 acres	$600
25 – 49 acres	$750
50 – 99 acres	$850
100 – 149 acres	$1,075
150 – 199 acres	$1,300
200 – 299 aces	$1,625
≥ 300 acres	$2,150

*Additional fee of $100 if enrolling both apples and stone fruits.

Deadlines for Record Submission

a. Eco Stone Fruit: **June 27, 2025**
b. Eco Apple: **July 25, 2025**

Fees

Annual certification fee $_____with the 2025 Eco Core Protocol, pesticide application and scouting records are due by the posted date. Final application and scouting records are due by **December 6, 2025**. Payment is accepted by check or credit card. To pay by credit card please visit our secure website, ipminstitute.org/projects/northeast-eco-apple/online-payment/, or call 608 232-1410.

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Revisions to 2025 Edition

- Page. 6:  Pollinator Bee Icon indicates a practice which supports pollinator protection. Pollinator protection in Eco Certified is defined as any practice which prevents pesticide exposure and/or habitat loss to pollinators. This icon has been added to clearly identify practices outside of Section 4. Pollinator Protection, which support pollinator conservation, reduce habitat loss and mitigate the risk of pesticide exposure to pollinators.

- Page 7: Removed Fax number line; Added Total Eco Certified acreage line

- Page 11. 2.A.2. Does a vegetated buffer separate surface water from edge of crop by at least 60 feet? 

- Page 12. 2.B.12. Are wind breaks installed and maintained on sites at risk of wind-eroded soil? S 

- Page 12: 2.B. 13. Are any acres of the farm currently enrolled in an NRCS program which supports IPM or other conservation practices? S 
    - List program name, acres enrolled and type of land.

- Page 13: 3.A.2. Are pesticide and nutrient application equipment calibrated at least annually? D 
    - Added, “and note if GPS system used.”

- Page 13: 3.A.3. Is pesticide drift minimized by monitoring current wind direction and speed using one of the following? S: **Please select all that apply** 
    - Hand-held monitor
    - Weather station
    - Online resources with real time wind-speed data

- Page 13: Removed minimum practice 3.A.5. “Are no organophosphates used as insecticides?” Reason: No organophosphates are allowed in the program.

- Page 13: Added clarification to practice. Changed note language from, “Rodenticide applications must be included in spray records and include date and blocks treated. Including a rate per acre is not necessary” to Updated note: “Rodenticide applications must be included in spray records, include date and blocks treated. Records must note if grain based. Rate per acre not necessary.”
- Page 14. 3.B.5. Are no synthetic pyrethroids used as insecticides? 

- Page 15. 3.B.10 Changed practice verification from S to D. Added note: “Document and submit pre-harvest damage assessment in scouting report. Proof of this practice includes a scouting report which identifies blocks, varieties and injury observed, e.g., “2% plum curculio injury on the north perimeter of block A”. Include this with your scouting reports.”
- Page 15. 3.B.13. Are air induction nozzles used to reduce pesticide drift? 

- Page 16: 4.A. 1 and 2.
    - 1. Updated links for pollinator practices.

    - 2. Moved EPA advisory box link from practice 1 to practice 2. EPA pollinator toxicity advisory box on labels: pesticidestewardship.org/wp-content/uploads/sites/4/2016/07/bee-label-info-graphic.pdf
    - Updated language now that EPA bee box advisory has evolved to “Specific Use Directions”.
- Page 19. 5.B.2. Are invasive weeds attractive to pollinators removed from orchard and field borders? S. 

- Page 19: 5.B.4. Is groundcover managed to eliminate alternate hosts for plant bugs, e.g., winter-annual weeds, chickweeds, dandelion, clovers, vetch and other legumes? S 

- Page 19: 5.B.5. Is alternate-row mowing done to preserve beneficials? 

- Page 20: 6.A.1. Added a D for desk audit verification. Added to note: Submit soil testing results with desk audit, when tested at least every three years.

- Page 20: 6.A.2. Is one in-field advanced indicator of soil health quantitatively assessed once every three years? Check all that were completed: 1. Aggregate stability, 2. Earthworm count, 3. Infiltration rate, 4. Soil compaction.

  Note: Soil organic matter and micronutrients removed as “advanced indicators”, since these are provided on standard soil tests.

- Page 21: 6.B.1. Advanced practice updated to read: Is one lab-based advanced indicator of soil health measured at least once every three years? 1. Available water capacity, 2. Active carbon, 3. Soil nitrates, 4. Soil food web, 4. Bulk density.

- Page 22: 6.B.5. Added clarification Practice is documented and submitted electronically with protocol.

- Page 22: 6.B.6. Added note: Recommended to use woodchip mulch that is clean and free of contamination and >1” per chip should be applied 4-6” thick to the current herbicide strip.

- Page 23: 6.B.8. Added clarification about herbicide applications under tree canopy versus drive rows, ”Are herbicides only applied under tree canopy and not used in alleyways/drive rows, including pre-emergent herbicides?”

  Note: Herbicide spray records indicate target site, i.e., drive row.

- Page 24: 7.B.4. New link, https://farm-energy.extension.org/farm-shop-energy-efficiency-checklist-and-tips/

- Page 27: Added herbicide and mating disruption to application record checklist.

Acknowledgements and References

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