

# Core Eco Protocol

*Must also complete eco supplements for apple or stone fruit*

*Deadlines for Record Submission*

*Eco Stone Fruit: July 6, 2018*

*Eco Apple: July 20, 2018*

**2018 growing season v. 2.3 – 03/09/2018**

*See page 22 for list of revisions to this edition.*

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## Red Tomato Eco Programs

In partnership with farmers, scientists and other agricultural professionals, Red Tomato has developed this protocol to achieve measurable reductions in the use of high-toxicity pesticides. Through our work, 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 in the Northeastern 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.

Red Tomato is a nonprofit organization that helps family farmers survive and thrive by connecting them to customers who want high-quality produce, by developing new markets and managing all the logistics and promotion needed to ensure success in a supermarket environment, and educating trade buyers and consumers to appreciate and seek out products that are ecologically grown by family farmers.

## 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 will review and evaluate the Core Eco Protocol and project, 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.

**Third-party auditors or the IPM Institute** will contract directly with growers to provide an on-site inspection. This inspection verifies compliance with the standard and has a special emphasis on evaluating compliance to criteria that are not measurable through documentation and records submitted to the IPM Institute. The on-site audit will still include a review of these items as per auditing guidelines.

**Participating growers** will be evaluated based on practices implemented which meet the Core Eco Protocol. A current version of the Core Eco Protocol, crop supplements and Quick Guide is always available at [ipminstitute.org/ecoapple.htm](http://ipminstitute.org/ecoapple.htm).

To apply for and maintain certification; the following steps will be followed:

1. Complete this Core Eco Protocol and Eco crop supplement (apples or stone fruits). Growers certifying multiple crops only need to complete the Core Eco Protocol once. Submit completed assessments to the IPM Institute with required:
  - a. Scouting records, trap counts and weather data. Scouting records must include date, block(s), pest and result, e.g., captures per trap, mites per leaf, etc.
  - b. Pesticide, fertilizer, thinner and plant-growth regulator application records 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. 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](#)).
2. If these are not received by the posted date, the IPM Institute will assess late fees for each week certification materials are late. Note: The IPM Institute of North America maintains confidentiality of all grower records which include, but are not limited to: Core Eco Protocol, crop supplements, pest-monitoring records, weather data, and pesticide, fertilizer, thinner and plant-growth regulator application records.
3. The 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 situation is developing that cannot be managed without violating the certification standards. 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.

## Core Eco Protocol Cover Sheet

Grower name: \_\_\_\_\_

Business name: \_\_\_\_\_

Physical address: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

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.

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		
A. Minimum Requirements	Pass, Fail or N/A	
1. Are all applicable local, state and national laws, codes and regulations met including those governing all aspects of applications of pesticides, nutrients, amendments, irrigation and other inputs? <sup>S</sup>		
2. Pesticides no longer used or no longer registered for use are returned to dealer or disposed of at the next collection. While in storage, obsolete pesticides are clearly marked and separated from pesticides in current use. <sup>S</sup>		
3. Grower has attended one or more educational meetings within the last year. <sup>D</sup> List meetings:		
4. Application records 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, application method, air temperature, wind speed and direction. <sup>D</sup>		
B. Advanced Practices	Points eligible	Points earned
1. Pesticide costs per acre are documented for all applications. <sup>D</sup>	1	
2. Workers handling or applying pesticides receive an annual medical examination or physical to ensure fitness for job duties. <sup>S</sup>	2	
3. Grower has hosted a field day or other production-related educational meeting within the last three years. <sup>D</sup> List date and name/description of event(s):	3	
4. Grower has conducted on-farm research using control (untreated) trees for comparison within the last three years. Describe each experiment, its purpose and dates. <sup>D</sup> Attach additional pages if necessary:	4	
5. Grower belongs to state and/or regional grower organization(s), in addition to participation in Red Tomato programs. <sup>D</sup> List organizations:	1	
6. Orchard is represented on 50% or more of the monthly Eco Apple conference calls.	1	
<b>Operations and Management: Total points eligible</b>	12	
<b>Total points earned</b>		

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

<sup>D</sup> Verified during desk audit via submitted paperwork

<sup>S</sup> Verified during site audit

## 2. Ecosystem, Soil and Water Conservation

A. Minimum Requirements	Pass, Fail or N/A		
<p>1. Results from soil and/or foliar analyses are used to calculate nutrient application rates, minimize nutrient use and limit potential for nutrient pollution. Timing of any applications is consistent with available Extension or University guidelines. <sup>S</sup></p> <p>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.</p>			
<p>2. Visibly eroded areas are not present and corrected in a timely manner, if they occur. This requirement is applicable to all enrolled acres, including adjoining roads and farmstead. <sup>S</sup></p>			
<p>3. A vegetated buffer separates surface water from edge of crop by at least 50 feet. <sup>S</sup></p>			
<p>4. Pesticide mixing is at least 120 feet from well heads. <sup>S</sup></p> <p>Note: Some states may require pesticide mixing to be further than 120 feet from well heads.</p>			
B. Advanced Practices Note: Please list block ID, for any blocks not earning points.	Points eligible	Points earned (all blocks)	Blocks not scored
<p>1. No irrigation is used. <sup>S</sup></p> <p>Note: If earning this point, skip to question 9 below. Do not enter points for questions 2-8.</p>	1		
<p>2. If irrigation is used, drip or trickle is installed to ensure adequate water supply and minimize water use and foliage wetness. <sup>S</sup></p>	1		
<p>3. If irrigation is used, automated shutoff devices are used. <sup>S</sup></p>	1		
<p>4. If overhead irrigation is used, applications are timed to minimize risk of spreading plant pathogens. <sup>S</sup></p> <p>Note: Overhead irrigation may be used for frost protection.</p>	1		
<p>5. Irrigation is determined by crop need, using systematic and science-based measures, e.g., monitoring soil moisture and visual assessment of plant stress. <sup>S</sup></p> <p>Note: Monitoring data are available for inspection.</p>	1		
<p>6. Rainwater or snowmelt is captured through retention ponds or keylines for irrigation. <sup>S</sup></p>	1		
<p>7. A water conservation plan is in place which addresses water uses for irrigation, washing and cooling. The plan should also outline staff training on minimizing water use in farm activities and practices and/or uses of technology to increase use efficiency. <sup>S</sup></p>	2		





<b>3. Pesticide-Risk Reduction</b>	
<b>A. Minimum Requirements</b>	<b>Pass, Fail or N/A</b>
1. Plant and tree canopies are maintained to allow penetration of light, air and spray material using pruning, field renovation or cane removal practices. <sup>S</sup>	
2. Pruning debris remaining in the field is flail chopped, mowed or removed, to suppress insect pest and disease inoculum. <sup>S</sup>	
<p>3. Pesticide and nutrient application equipment is calibrated at least annually. Records are maintained and include name of person completing calibration, date of calibration, equipment description and procedures, results and adjustments from calibration. <sup>D</sup></p> <p>Calibration for airblast sprayer:  <a href="http://extension.psu.edu/sprayer-calibration-information">extension.psu.edu/sprayer-calibration-information</a>  <a href="http://sprayers101.com/airblast-output">sprayers101.com/airblast-output</a>  <a href="http://sprayers101.com/how-to-calibrate-an-airblast-sprayer-operator">sprayers101.com/how-to-calibrate-an-airblast-sprayer-operator</a></p> <p>Calibration for boom sprayer:  <a href="http://extension.colostate.edu/docs/pubs/farmmgmt/05003.pdf">extension.colostate.edu/docs/pubs/farmmgmt/05003.pdf</a></p> <p>Calibration for rotary spreader:  <a href="http://pesticidestewardship.org/calibration/Pages/RotarySpreader.aspx">pesticidestewardship.org/calibration/Pages/RotarySpreader.aspx</a></p> <p>Calibration for a drop spreader:  <a href="http://pesticidestewardship.org/homeowner/how-to-calibrate-a-drop-spreader">pesticidestewardship.org/homeowner/how-to-calibrate-a-drop-spreader</a></p> <p>Note: Where rented equipment is used, follow supplied instructions for operation. Tractor ground speed needs to be calibrated if travel speed influences application rate.</p> <p>Mark with 'Yes' if rented sprayers or spreaders are used: _____.</p>	
<p>4. Pesticide drift is minimized by monitoring current wind direction and speed with a hand-held monitor, weather station or documented using online resources with real time wind-speed data. <sup>S</sup></p> <p>Pesticide drift resources: <a href="http://pesticidestewardship.org/drift/Pages/default.aspx">pesticidestewardship.org/drift/Pages/default.aspx</a></p>	

**Notes:**

### 3. Pesticide-Risk Reduction

<b>B. Advanced Practices</b> <b>Note: Please list block ID, for any blocks not earning points.</b>	<b>Points eligible</b>	<b>Points earned (all blocks)</b>	<b>Blocks not scored</b>
1. Pesticide Risk Tool ( <a href="http://pesticiderisk.org">pesticiderisk.org</a> ) is used to evaluate risk. <sup>S</sup>	2		
2. Lower-risk pesticides are identified and used based on outcome from the Pesticide Risk Tool pesticide risk analysis. <sup>S</sup>	1		
3. Mitigation strategies are identified and implemented for all pesticide applications identified as high-risk by the Pesticide Risk Tool. <sup>S</sup>	1		
4. At least two full-block applications are replaced by partial-block pesticide applications. <sup>D</sup>	2		
5. At least two full-block applications are replaced by pesticide applications to the crop along the field perimeter. <sup>D</sup>  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.	2		
6. At least two full-block applications are replaced by alternate-row-middle (ARM) pesticide applications. <sup>D</sup>  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, <a href="http://sprayers101.com/alternate-row-middle-spraying">sprayers101.com/alternate-row-middle-spraying</a> .	2		
7. Alternate-row mowing is done to preserve beneficials. <sup>S</sup>	1		
8. No organophosphates are used as insecticides. <sup>D</sup>	1		
9. No synthetic pyrethroids are used as insecticides. <sup>D</sup>	1		
10. Tractor cabs plus required personal protective equipment are used to protect applicators during pesticide applications. <sup>S</sup>	2		
11. No 'DANGER' labeled pesticides are used. <sup>D</sup>	1		
12. No 'WARNING' labeled pesticides are used. <sup>D</sup>	1		

**Notes:**

### 3. Pesticide-Risk Reduction

<b>B. Advanced Practices (continued)</b> <b>Note: Please list block ID, for any blocks not earning points.</b>	<b>Points eligible</b>	<b>Points earned</b>	<b>Blocks not scored</b>
13. Herbicides are not used in alleyways/drive rows. <sup>D</sup>	1		
14. Herbicides are not used in planted rows; weeds are managed by non-chemical methods, e.g., cultivation, aeration, over-seeding or avoiding compaction. <sup>D</sup>	1		
15. Groundcover is managed to eliminate alternate hosts for plant bugs, e.g., winter-annual weeds, chickweeds, dandelion, clovers, vetch and other legumes. <sup>S</sup>	1		
16. Spray pattern for pesticide application equipment is evaluated and adjusted by assessing droplet size and coverage using water-sensitive cards or dyes, <a href="http://sprayers101.com/confirm-coverage-with-water-sensitive-paper">sprayers101.com/confirm-coverage-with-water-sensitive-paper</a> . <sup>S</sup>	2		
17. Spray-control system is used to regulate pesticide application rates. <sup>S</sup>	1		
18. On-site Network for Environment and Weather Applications (NEWA) station is used for pest and disease management, <a href="http://newa.cornell.edu">newa.cornell.edu</a> . <sup>D</sup>	3		
<b>Pesticide-Risk Reduction: Total points eligible</b>	26		
<b>Total points earned</b>			

**Note:** List the block ID for any instances where the scored advanced practice does not apply to the site. Total points for each block may be reflected in the final score card on page 19.

<b>4. Pollinator Protection</b>			
<b>A. Minimum Requirements</b>	<b>Pass, Fail or N/A</b>		
1. Existing habitat for pollinators and nesting sites are identified and protected from drift. <sup>S</sup>  Note: 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, <a href="http://xerces.org/wp-content/uploads/2016/10/ProtectingHabitatFromPesticideContamination_oct2016-02.pdf">xerces.org/wp-content/uploads/2016/10/ProtectingHabitatFromPesticideContamination_oct2016-02.pdf</a> .			
2. Pesticides with an EPA pollinator toxicity advisory box on the label are not applied between pink and end of crop bloom, <a href="http://pesticidestewardship.org/wp-content/uploads/sites/4/2016/07/bee-label-info-graphic.pdf">pesticidestewardship.org/wp-content/uploads/sites/4/2016/07/bee-label-info-graphic.pdf</a> . <sup>D</sup>  Note: Information on selecting pesticides least toxic to pollinators is available through Oregon State Extension, <a href="http://catalog.extension.oregonstate.edu/sites/catalog.extension.oregonstate.edu/files/project/pdf/pnw591.pdf">catalog.extension.oregonstate.edu/sites/catalog.extension.oregonstate.edu/files/project/pdf/pnw591.pdf</a> .			
<b>B. Advanced Practices</b> Note: Please list block ID, for any blocks not earning points.	<b>Points eligible</b>	<b>Points earned (all blocks)</b>	<b>Blocks not scored</b>
1. Non-blooming buffers of ≥ 60 feet are maintained around all field borders where pesticides toxic to pollinators are applied. <sup>S</sup>	1		
2. Invasive weeds attractive to pollinators are removed from orchard and field borders. <sup>S</sup>	1		
3. If managed bee hives reside on the farm year-round they are monitored for health, and their diseases are controlled. <sup>S</sup>	2		
4. Supplemental forage, e.g., designated pollinator habitat, is provided when orchard is not in bloom for resident honey bee hives. <sup>S</sup>	1		
5. Honey bee apiaries resident on the farm are located at least 0.5 mile away from designated wildlife habitat, e.g., state or national wildlife refuges, natural areas or parks. <sup>S</sup>	2		
6. Commercially produced bumblebee hives are not used for open pollination. <sup>S</sup>	1		
7. Pollination is accomplished exclusively with native bees. <sup>S</sup>	2		
8. Blooming groundcover is reduced, e.g., mowing to remove blooming weeds or herbicide applications which target broadleaf weeds in drive rows and row middles, to protect foraging pollinators. <sup>S</sup>	1		
9. Pollinator activity is monitored during bloom through participation in the Northeast Pollinator Partnership, <a href="http://northeastpollinatorpartnership.org/">northeastpollinatorpartnership.org/</a> .	1		
<b>Pollinator Protection: Total points eligible</b>	12		
<b>Total points earned</b>			

**Note:** List the block ID for any instances where the scored advanced practice does not apply to the site. Total points for each block may be reflected in the final score card on page 19.

<b>5. Pest Monitoring and Management</b>		
<b>A. Minimum Requirements</b>	<b>Pass, Fail or N/A</b>	
1. Systematic sampling and monitoring are completed for all pests requiring management as per Extension recommendations. <sup>D</sup>		
2. If grain-based rodenticides (corn, oats) are used, they are applied in bait stations or burrows only. <sup>D</sup>		
3. Weed-free areas in planting rows do not extend into the row middles or aisles. <sup>S</sup>		
4. Herbicide mode of action is rotated between each application (during and between seasons). <sup>D</sup>		
5. No more than three applications of an herbicide are made per season to the same application site. A fourth spot-treatment may be made if desired control is not achieved and must be supported with documentation which identifies weed species not controlled during previous applications. <sup>D</sup>		
<b>B. Advanced Practices</b>	<b>Points eligible</b>	<b>Points earned</b>
1. Weeds targeted with herbicide applications are scouted at least once per season and weed species present and location, e.g., tree row or row middle, are documented. <sup>D</sup>	1	
2. A pre-harvest damage assessment is completed on all Eco blocks prior to the start of harvest. <sup>S</sup>  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.	1	
<b>Pest Monitoring and Management: Total points eligible</b>	2	
<b>Total points earned</b>		

**Notes:**

<b>6. Food Safety and Product Quality</b>	
<b>A. Minimum Requirements</b>	<b>Pass, Fail or N/A</b>
1. Only fruit of sound internal and external quality are labeled and sold under Red Tomato trademarks. <sup>S</sup>	
2. Fruit is harvested at correct maturity according to firmness, brix or other accepted measures. <sup>S</sup>  Note: Pick-your-own varieties are not opened to public until fruit has reached correct maturity.	
3. Fruit that has fallen to the ground (drops) are not labeled and sold under Red Tomato trademarks. <sup>S</sup>	
4. Clean toilet and hand-washing facilities are available to field, harvest and packing house staff. <sup>S</sup>	
5. Manure is not applied to sites where fruit will be harvested within 120 days of harvest. <sup>S</sup>	
6. Grazing of livestock or poultry to manage pests and weeds on bearing sites may only be done in compliance with the National Organic Standards. Livestock is not allowed within 90 days of harvest, for crops not touching the ground. <sup>S</sup>	
7. Access roads between production sites and packing/storage facilities are inspected for ruts, bumps or rocks and are repaired prior to harvest to minimize fruit damage. <sup>S</sup>	
8. Fruit bins and boxes are sound and cleaned as needed to remove soil, plant or animal debris prior to use. <sup>S</sup>	
9. Filled harvest containers are not stored outside or left in the field and are immediately transported to packing or storage facilities. <sup>S</sup>	

**Notes:**

<b>6. Food Safety and Product Quality</b>		
<b>B. Advanced Practices</b>	<b>Points eligible</b>	<b>Points earned</b>
1. Clean plastic bins are used to store fruit. <sup>S</sup>	1	
2. Harvesting bins, storage rooms and packinghouses are sanitized annually after storage and packing are completed. <sup>S</sup>	2	
3. Cider production facility (if any) has a written HACCP plan. <sup>S</sup>	2	
4. Packing facility has a written Standard Sanitary Operating Procedures plan. <sup>S</sup> Note: May be required by USDA for farms with packing facilities.	2	
5. Packing line water flumes are chlorinated or otherwise treated to reduce potential for post-harvest diseases. <sup>S</sup>	1	
6. Farm is 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. <sup>S</sup>	3	
7. Farm has a written Food Safety Plan which meets either USDA GAP, GLOBAL G.A.P., or PrimusGFS. <sup>S</sup>	2	
<b>Food Safety and Product Quality: Total points eligible</b>	13	
<b>Total points earned</b>		

**Notes:**



<b>7. Energy and Waste Management</b>		
<b>A. Minimum Requirements</b>	<b>Pass, Fail or N/A</b>	
1. Open burning complies with local ordinances and is limited to yard waste, wood, pruning debris and paper-based products. Pesticide containers (including paper), plastics, rubber or industrial products may not be disposed of by burning. <sup>S</sup>		
2. Buildings which are heated or cooled are insulated. <sup>S</sup>		
3. Disposal of lead-acid batteries, used oil, industrial chemicals and other hazardous materials meet state and federal guidelines, i.e., lead-acid batteries are disposed by taking to approved recycling drop-off locations, e.g., auto-service centers, municipal recycling facilities, etc. <sup>S</sup>		
<b>B. Advanced Practices</b>	<b>Points eligible</b>	<b>Points earned</b>
1. Energy-efficient lighting is used in office, packing and storage facilities, e.g., compact fluorescent or LED lighting. <sup>S</sup>	1	
2. Solar or wind are used to meet electricity needs: One point if >10%, two points if >30%, three points if >50%. <sup>S</sup> List:	1, 2 or 3	
3. Biodiesel or ethanol, are used to meet fuel needs. One point if >10%, two points if >30%, three points if >50%. <sup>S</sup> List:	1, 2, or 3	
4. New energy conservation measures have been implemented in storage facilities within the last three years. <sup>D</sup> List:	1	
5. Employees are trained on how to minimize energy consumption for farm activities. <sup>S</sup>	1	
6. Tractors and other motorized equipment are used efficiently and effectively to reduce overall fuel consumption, e.g., do not let diesel engines idle longer than 5-10 minutes; tractors operated at optimum RPM to maximize fuel efficiency. <sup>S</sup>	1	
7. Tractor are operated in economy mode when appropriate, e.g., spraying, mowing. <sup>S</sup>  Note: Economy modes reduce engine operating RPM while maintaining the PTO at 540 RPM.	2	

**Notes:**

## 7. Energy and Waste Management Continued

B. Advanced requirements for energy conservation continued	Points eligible	Points earned
8. Tractors are maintained to maximize efficiency by doing all of the following: <sup>S</sup> <ol style="list-style-type: none"> <li>a. Manufacturer intervals for oil and filter changes are followed.</li> <li>b. Tire selection, configuration and inflation are matched to load requirements and manufacturer specifications.</li> <li>c. Tractor ballast and weight distribution is optimized.</li> </ol> <p>Note: More information on this practices is explained in, “<i>Farm Practices to Improve Energy Efficiency</i>”, University of Wisconsin Extension, <a href="https://blogs.extension.org/encon1/files/2012/12/ENCON2.pdf">blogs.extension.org/encon1/files/2012/12/ENCON2.pdf</a>.</p>	2	
9. A third-party energy audit of facilities has been completed. <sup>S</sup>	2	
10. The following materials are recycled: <sup>S</sup>		
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	
11. Energy use efficiency is monitored using the Stewardship Index for Specialty Crops, <a href="http://stewardshipindex.org/working_metrics.php">stewardshipindex.org/working_metrics.php</a> . <sup>S</sup>	2	
12. A pesticide mixing and loading facility is used to catch and retain pesticide rinsate. <sup>S</sup>	3	
<b>Energy and Waste Management: Total points eligible</b>	22.75	
<b>Total points earned</b>		

**Notes:**

**Score Card**

Points Required				Points Eligible	Points Earned per Block									
Years of Participation	Core Eco Protocol	Apple Supplement	Stone Fruit Supplement		Print additional pages of score card if more than ten blocks are enrolled.									
1-3 years	25	4	3		1	2	3	4	5	6	7	8	9	10
> 3 years	30	6	5											
<b>CORE ECO PROTOCOL</b>														
<b>Operations and Management</b>				12										
<b>Ecosystems, Soil and Water Conservation</b>				22										
<b>Pesticide-Risk Reduction</b>				26										
<b>Pollinator Protection</b>				12										
<b>Pest Monitoring and Management</b>				2										
<b>Food Safety and Product Quality</b>				13										
<b>Energy and Waste Management</b>				22.75										
<b>Total Points Earned</b>														
<b>ECO CROP SUPPLEMENTS</b>														
<b>Eco Apple</b>				56										
<b>Eco Stone Fruit</b>				28										
<b>Total Points Earned</b>														

## 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.

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Participating Grower Name

Signature

Date

## Submission Checklist

- \_\_\_ a. Completed Eco Core Protocol
- \_\_\_ b. Completed Eco crop supplements
- \_\_\_ c. Pesticide, fertilizer, thinner and plant-growth regulator application records for blocks to be certified. See page 4 for required information.

The IPM Institute can digitize spray records not submitted in an electronic format. This service will be charged based on an hourly rate for time required for digitization and a final copy of the electronic record will be sent to the grower.

- \_\_\_ 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	\$450
10 – 24 acres	\$550
25 – 49 acres	\$700
50 – 99 acres	\$800
100 – 149 acres	\$1,000
150 – 199 acres	\$1,200
200 – 299 acres	\$1,500
≥ 300 acres	\$2,000

\*Additional fee of \$100 when enrolling in Eco Stone Fruit and Eco Apple.

## Deadlines for Record Submission

- a. Eco Stone Fruit: **July 6, 2018**
- b. Eco Apple: **July 20, 2018**

## Fees

Annual certification fee \$\_\_\_\_\_ with the 2018 Eco Core Protocol, pesticide application and scouting records are due by the posted date. Final application and scouting records are due by **December 7, 2018**. 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/](http://ipminstitute.org/projects/northeast-eco-apple/online-payment/), or call 608 232-1410.

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## Revisions to 2018 Edition

1. Application records 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, application method, air temperature, wind speed and direction, pg. 7, 1.A.4.
2. New resources added to pg. 9, 2.B.16.
  - a. The USDA-NRCS Soil Quality Test Kit Guide describes procedures and an interpretive section for each test, [nrcs.usda.gov/wps/portal/nrcs/detail/soils/health/assessment/?cid=nrcs142p2\\_053873](https://nrcs.usda.gov/wps/portal/nrcs/detail/soils/health/assessment/?cid=nrcs142p2_053873).
  - b. Available with the Cornell Comprehensive Assessment of Soil Health - Standard Soil Health Analysis Package, [soilhealth.cals.cornell.edu/testing-services/comprehensive-soil-health-assessment/](https://soilhealth.cals.cornell.edu/testing-services/comprehensive-soil-health-assessment/).
  - c. Testing available at Harrington's Organic Land Care, [harringtonsorganic.com/organic-land-care-services-hartford-county-connecticut/soil-testing/#lightbox/1/](https://harringtonsorganic.com/organic-land-care-services-hartford-county-connecticut/soil-testing/#lightbox/1/).
3. New resources added to calibration for airblast sprayer, pg. 10, 3.A.3.
  - a. [sprayers101.com/airblast-output](https://sprayers101.com/airblast-output)
  - b. [sprayers101.com/how-to-calibrate-an-airblast-sprayer-operator](https://sprayers101.com/how-to-calibrate-an-airblast-sprayer-operator)
4. New resource added to pg. 11, 3.B.6.
  - a. For considerations on ARM sprays visit, [sprayers101.com/alternate-row-middle-spraying](https://sprayers101.com/alternate-row-middle-spraying).
5. New resource added to pg. 12, 3.B.16.
  - a. Spray pattern for pesticide application equipment is evaluated and adjusted by assessing droplet size and coverage using water-sensitive cards or dyes, [sprayers101.com/confirm-coverage-with-water-sensitive-paper](https://sprayers101.com/confirm-coverage-with-water-sensitive-paper).
6. Note: 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, [xerces.org/wp-content/uploads/2016/10/ProtectingHabitatFromPesticideContamination\\_oct2016-02.pdf](https://xerces.org/wp-content/uploads/2016/10/ProtectingHabitatFromPesticideContamination_oct2016-02.pdf), pg. 13, 4.A.1.
7. Non-blooming buffers of  $\geq 60$  feet are maintained around all field borders where pesticides toxic to pollinators are applied, pg. 13, 4.B.1.
8. Supplemental forage, e.g., designated pollinator habitat, is provided when orchard is not in bloom for resident honey bee hives, pg. 13, 4.B.4.
9. Honey bee apiaries resident on the farm are located at least 0.5 mile away from designated wildlife habitat, e.g., state or national wildlife refuges, natural areas or parks, pg. 13, 4.B.5.
10. Pollinator activity is monitored during bloom through participation in the Northeast Pollinator Partnership, [northeastpollinatorpartnership.org/](https://northeastpollinatorpartnership.org/), pg. 13, 4.B.9.

## Acknowledgements & References

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