Hazelnut Pest and Beneficial Insects
An identification guide

V. Walton, U. Chambers, J. Olsen

Nut-feeding pests

FILBERTWORM

Filbertworm larva has visible legs, is pale, and has a worm shape. Filbert weevil larva is legless, a milky color, and has a grub shape.

Life stages

(left) Filbertworm larva in winter cocoon. Larvae overwinter in organic matter such as debris and grass.

(center) Adult filbertworm. Flights and damage occur as early as late May and as late as harvest in October. Possibly two generations per season. First trappings made in surrounding oaks.

(right) Filbertworm pupa.

Symptoms

Filbert weevil Curculio occidentis

Knowledge of this pest is limited, due to inconsistent damage and infestation patterns.

Filbert weevils

Trapping

- Pheromone traps for adults
- Four traps for first 10 acres, one trap for each additional 4 acres
- Place traps in upper third of canopy by mid-June
- Check traps once a week until you detect pest activity; increase checks to twice a week until you apply pest controls.
- Action thresholds—two to three moths per trap, or five moths in any one trap

Vaughn M. Walton, horticultural entomologist; Ute Chambers, postdoctoral research scholar, Department of Horticulture; and Jeff Olsen, Extension horticulturist, Yamhill County; all of Oregon State University

Delta trap

Pherocon VI trap
Foliage-feeding pests

LEAFROLLERS

Sampling

Monitor weekly from late March to late May. Both species:
- Larvae—three terminals per tree, three leaf clusters per terminal
- Adult—one pheromone trap per 5 acres, placed 6 feet off the ground, up in tree
- Action threshold—for larvae, 20–25% infection; for adults, a combination or single-species catch of 40 moths per week, and larvae feeding on nuts

Symptoms

- Both species—rolling of leaves, starting late March to late May; feeding on new buds and leaves
- OBLR—scarring and staining on young nuts, due to larval feeding
- FLR—adults emerge from late June or July through mid-August; OBLR—adults emerge from early June through mid-July

APHIDS

High aphid populations may lead to excessive honeydew, then to possible loss of photosynthetic ability due to sooty mold on leaves, and thus to potential crop losses.

Filbert aphid characteristics

- Cornicles are short and hard to see
- Smaller than hazelnut aphid
- Body pale green to yellow
- Antennae and legs are same color as body
- Found on leaves and husks

Hazelnut aphid characteristics

- Long cornicles visible
- Body larger and darker green than filbert aphid’s; sometimes reddish orange
- Antennae and legs are darker than body
- Found mostly on husks
- Sometimes difficult to see

Sampling

When leaves have fully developed, sample every second week. Ideally, sample three terminals per tree, looking at the newest fully expanded leaf on each terminal. Look at 20 evenly spaced trees per 2–4 acres of orchard.

Action thresholds—
- In April, 20 aphids/leaf
- In May, 30 aphids/leaf
- In June, 40 aphids/leaf
- In July, 40 aphids/leaf, and populations are increasing weekly
**MITES**

**Symptoms**

**Big bud mite (early season)**
- Examples: *Phytopts avellanae*, *Cedidophyopsis vermiformis*
- Microscopic, cigar shape, milky color
- Two pair of legs, close to head
- Cool-weather pest; overwinters inside bud and causes damage during winter. Blasted buds in late winter and early spring.
- Monitor in spring. Use double-sided sticky tape and check for mite movement using a 20X hand lens.
- Treat early during budbreak and after movement is detected.

**Spider mite (in season)**
- Summer pest: damage during summer; overwinters as adult, in leaf litter.
- Round
  - Three to four pair of legs, depending on age; legs visible with hand lens.
  - Found on leaves during season. Causes leaf stippling, chlorophyll death, and webbing on leaf surfaces. Leaf damage usually is not economically important.
- Monitor in summer
  - Currently, no action thresholds. Look for predatory mite activity, which might naturally control pest mites.

---

**Generalist natural enemies: life stages**

Here and on the following page are the most common beneficials found on hazelnut. If they are in your orchards, a higher level of biocontrol might be in force there. However, regular pesticide use may cause a decline in populations of beneficials. For more information on a wider range of beneficials, visit [http://extension.oregonstate.edu/catalog/pdf/ec/ec1613-e.pdf](http://extension.oregonstate.edu/catalog/pdf/ec/ec1613-e.pdf)

**Syrphid flies (Hover flies) *Syrphus* spp.**
- Adults mimic wasps and bees but fly more quickly and hover
- Adult abdomen often has markings
- Larvae are maggotlike and can prey on aphids and scale insects
- Adults are found near flowers

**Lacewings *Chrysopa* and *Hemerobius* spp.**
- Green lacewings are pale green with bright golden eyes.
- Brown lacewings are light brown.
- Adults are delicate and weak fliers, 12–20 mm long with long antennae.
- Adults often lay eggs on stalks, very near hosts.
- Lacewings can feed on aphids and scale insects in the orchard. One larva can consume 100–600 aphids during its development.
- Adults also need nectar (which may be excreted by aphid populations) and pollen.
Ladybird beetles *Adalia* sp.

- Adult usually is red or orange with black markings or, sometimes, black with red markings.
- Adults are strong fliers and robust.
- Adults overwinter and lay eggs in clusters in spring or early summer.
- Adults and larvae feed on aphids, mites, scale insects, and other small insects. They can consume several hundred aphids during their lifetimes.
- Very effective at high pest densities but less effective at low densities.

Other generalists

Several other generalists, such as ground beetles, have been found feeding on overwintering filbertworm and filbert weevil larvae. Earwigs and spiders also can feed on insect pests.

Acknowledgments

Images in this publication were provided by the authors, by Mario Ambrosino, faculty research associate, Integrated Plant Protection Center, Oregon State University, and by the Ken Gray Collection at Oregon State University.

Disclaimer

Trade-name products and services are mentioned as illustrations only. This does not mean that the Oregon State University Extension Service either endorses these products and services or intends to discriminate against products and services not mentioned.
Filbertworm Control by Mating Disruption

B. Miller, D. Dalton, L.J. Brewer, and V. Walton

Filbertworm (Cydia latiferreana) is the insect pest of greatest economic impact on Oregon hazelnut production (Figure 1). In this publication, you will learn how to:

■ Implement mating disruption as a strategy that will reduce damage due to filbertworm (FBW) feeding
■ Reduce insecticide applications
■ Protect the natural enemies of secondary hazelnut pests such as filbert and hazelnut aphid.

How mating disruption works

The female FBW moth releases a chemical signal, or pheromone, indicating that she is ready to mate. The pheromone drifts on air currents to attract male moths, allowing successful mating. Growers can use mating disruption to introduce additional chemical signals to the orchard that disrupt FBW mating. This can result in reduced reproductive success of the female, lower populations of the pest, and less crop damage.

Mating disruption is an integrated pest management (IPM) technique that uses synthetically manufactured pheromones similar to those emitted by the female moth. In hazelnut orchards, pheromone dispensers are placed in the trees at a recommended density. Males follow these chemical trails with the expectation of finding a female, but the cloud of pheromone in the orchard airspace can prohibit many moths from successfully locating mates (Figure 2).

As with conventional control of FBW, mating disruption requires the use of pheromone-baited monitoring traps. These traps give an indication of seasonal pest pressure and may indicate localized hot spots requiring extra attention. Filbertworm monitoring traps should be placed in the upper third of the tree canopy at a density of four traps for the first 10 acres and one trap for each additional 4 acres. Over the course of a week, two to three moths per trap in several

Photos: Vaughn Walton, © Oregon State University (left), and Chris Hedstrom, © Oregon Department of Agriculture

Figure 1. An adult filbertworm is shown on the left. A developing larva feeding on a hazelnut kernel is shown on the right.

Figure 2. The female FBW emits a pheromone plume to attract males for mating (top image). Pheromone dispensers reduce mating by introducing false pheromone plumes that make it difficult for the male to locate the female.
traps or five moths in any one trap indicate the need for additional chemical control.

Mating disruption works best in orchards of 30 acres or more. High pest density and alternate hosts such as oak trees or untreated hazelnuts in the surrounding vegetation can decrease the efficacy of mating disruption. In orchards with heavy FBW pressure, it may be necessary to supplement mating disruption with applications of insecticides to orchard borders or hotspots. Growers often apply insecticide to the outer two orchard rows during peak FBW flight to manage mated moths migrating in from surrounding areas. These border sprays typically cover about 10 percent of the acreage. This technique significantly reduces insecticide use and provides refuge habitat for natural enemies of all hazelnut insect pests. If FBW traps indicate high pressure, full-cover, knockdown insecticide applications are recommended. Find a list of materials recommended for the control of FBW in the Hazelnut Pest Management Guide (see More Resources on page 4).

Basic biology of the filbertworm

In Oregon's climate, the FBW moth can usually complete a single full generation each year, and in warm years, a partial second generation. In the spring, overwintering FBW larvae pupate and mature in the soil. Beginning in late May, adult moths emerge from these pupae and take flight to seek mates and may be captured in pheromone traps, indicating increased mating activity and pest pressure (Figure 3).

A fertilized filbertworm female deposits her eggs on or near the developing hazelnut husks. The emerging larvae crawl to husk clusters and enter through the nutshell to feed on the developing kernel. Toward the end of the growing season as nuts mature, the mature larvae bore a hole to exit the nut. These larvae then drop to the soil, where they spin a silken cocoon in which to hibernate as larvae for the winter. In spring, larvae pupate, and then emerge from the soil as adults, beginning the cycle again.

Dispenser placement and density

For effective control of FBW with mating disruption, place a minimum of 10 pheromone dispensers per acre in early May, before the first moths take flight to mate. Compare your orchard spacing with Figure 4 and use Table 1 on the next page to distribute the pheromone dispensers and optimize mating disruption in your orchard.

Use a lift or a hook on a telescoping pole to place dispensers in the upper third of the tree canopy. The dispenser must be wrapped securely around a sturdy branch to resist high winds and air-blast sprayer
applications. Stagger the placement of the dispensers from row to row to optimize pheromone distribution (Figure 5, page 4).

Using a hook and pole, OSU researchers were able to place dispensers at the rate of 5 acres per hour per person. Dispensers must be replaced every year. More than 30 percent of the pheromone may remain in dispensers 27 weeks after placement, indicating pheromone dispensers can be placed early and remain effective in disrupting FBW mating through a growing season.

**Efficacy**

Extensive, rigorous mating disruption field trials reduced the number of FBW moths in monitoring traps by 40 percent to 88 percent compared to untreated grower standard blocks. Average nut damage during the first three seasons of these trials was 0.64 percent in border-sprayed mating disruption compared to 0.68 percent in conventional pyrethroid-managed control blocks. In the fourth and fifth seasons, average nut damage was less than 0.50 percent with mating disruption and less than 0.25 percent with pyrethroid control. Currently, the industry tolerance threshold for FBW damage in the crop at harvest is 1 percent.

Mating disruption, when used with chemical border protection and periodic knockdown sprays, is as effective as full-cover chemical applications. The major benefit of a successful mating-disruption program is a reduction in insecticide use. The cost of commercially available ring dispensers for mating disruption is comparable to chemical control in conventional orchards if FBW density remains relatively low. If populations are consistently high, the additional costs of insecticide applications make mating disruption more expensive.

**Secondary benefits**

Over a five-year period, orchard managers who combined mating disruption with a border spray or target sprays as opposed to a full-cover insecticide spray observed significantly reduced aphid populations and a continual increase in parasitism of filbert and hazelnut aphids by their primary natural enemy, the parasitic wasp *Trioxys pallidus*. Full-cover insecticide sprays

---

**Table 1. Dispenser placement pattern according to orchard spacing**

<table>
<thead>
<tr>
<th>Orchard spacing</th>
<th>Tree spacing</th>
<th>Row spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 X 20</td>
<td>Every 6th tree</td>
<td>Every other row</td>
</tr>
<tr>
<td>20 X 10</td>
<td>Every 12th tree</td>
<td>Every other row</td>
</tr>
<tr>
<td>18 X 18</td>
<td>Every 5th tree</td>
<td>Every 3rd row</td>
</tr>
<tr>
<td>9 X 18</td>
<td>Every 10th tree</td>
<td>Every 3rd row</td>
</tr>
</tbody>
</table>

---

**Figure 4.** To be effective, mating disruption requires a minimum density of 10 pheromone dispensers per acre. This schematic shows the pattern of dispenser placement in an orchard with 20-by-20-foot spacing—one dispenser in every sixth tree, in every other row. Find layouts for other orchard spacings in Table 1.
effectively control many insect pests, but also kill natural enemies, like this wasp. Reducing the use of insecticides helps protect this specialized aphid parasitoid, which has been shown to kill up to 40 percent of the aphid population (Figure 6, page 5).

**Does mating disruption pencil out?**

Growers who used mating disruption or intensive monitoring programs during a 3-year trial period saved money and reduced insecticide applications while maintaining acceptable crop quality. Monitoring alone (at a density of one trap per 5 acres) saved growers $20.20 per acre per year and reduced the amount of insecticide applied by almost half over conventional FBW controls. Mating disruption using ring dispensers plus monitoring traps reduced production costs by $9.69 per acre and reduced the amount of insecticide applied by 75 percent. On an annual basis (2013 data), conventional FBW controls cost $52.50 per acre per year, while mating disruption with ring dispensers cost $54.92 per acre per year (Table 2, page 5).

These results support findings from previous seasons and are especially applicable for organic producers or orchard managers who have regulatory concerns. FBW mating disruption can be an effective alternative to conventional management techniques. Most striking was spray data from growers involved in the trials. Orchards under mating disruption maintained acceptably low levels of FBW damage while significantly reducing FBW insecticide applications compared to orchards using chemical control of FBW.

For more information on pheromone dispensers, contact your farm supplier. The availability of eastern filbert blight-resistant cultivars along with mating disruption opens the door for organic hazelnut production in Oregon.

**More resources:**


Table 2. Cost comparison of conventional management of FBW (assuming an average of 1.5 sprays per year) compared to a mating disruption (MD) program.

Costs associated with IPM activities are included for both programs because they are a good part of any orchard management program. If you spray on a calendar basis and do not monitor for FBW, these costs can be subtracted from your FBW management costs. Costs are calculated over a 10-year period to account for periodic knockdown sprays which may be necessary to keep FBW populations sufficiently low for mating disruption to be effective.

<table>
<thead>
<tr>
<th>Conventional vs MD costs per acre</th>
<th>Cost/item</th>
<th>Conventional per year</th>
<th>Conventional per 10 years</th>
<th>MD/10 years (3 full-cover sprays included)</th>
<th>MD cost per year (over 10 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportional airblast and tractor (variable costs only)</td>
<td>$19.08</td>
<td>$19.08</td>
<td>$190.80</td>
<td>$57.24</td>
<td>$5.72</td>
</tr>
<tr>
<td>Materials (insecticides, assuming pyrethroid)</td>
<td>$9.44</td>
<td>$9.44</td>
<td>$94.40</td>
<td>$28.32</td>
<td>$2.83</td>
</tr>
<tr>
<td>IPM labor (1 hour/season)*</td>
<td>$14.00</td>
<td>$14.00</td>
<td>$140.00</td>
<td>$14.00</td>
<td>$14.00</td>
</tr>
<tr>
<td>IPM Traps*</td>
<td>$2.57</td>
<td>$2.57</td>
<td>$25.70</td>
<td>$2.57</td>
<td>$2.57</td>
</tr>
<tr>
<td>Pheromone dispensers (assuming $2.50/dispenser and 10 dispensers/season)</td>
<td>$25.00</td>
<td>$25.00</td>
<td>$250.00</td>
<td>$25.00</td>
<td>$25.00</td>
</tr>
<tr>
<td>Labor to install dispensers (5 acres/hour)</td>
<td>$2.80</td>
<td>$2.80</td>
<td>$28.00</td>
<td>$2.80</td>
<td>$2.80</td>
</tr>
<tr>
<td>Border sprays (10% of full cover)</td>
<td>$2.85</td>
<td>$2.85</td>
<td>$19.96</td>
<td>$2.80</td>
<td>$2.80</td>
</tr>
<tr>
<td>Aphid spray (25% of full cover)</td>
<td>$7.41</td>
<td>$7.41</td>
<td>$74.10</td>
<td>$7.41</td>
<td>$7.41</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$52.50</strong></td>
<td><strong>$525</strong></td>
<td><strong>$47.22</strong></td>
<td><strong>$549.22</strong></td>
</tr>
</tbody>
</table>


Figure 6. Secondary orchard pests can increase when their natural enemies are reduced by insecticides. The left graph shows the mean number of filbert aphids (Myzocallis coryli) per hazelnut leaf. The right graph shows the rates of aphid parasitism by Trioxys pallidus, as a percentage, over 5 years of observations. The red line in each graph represents mean aphids or percent parasitism in orchards using mating disruption for control of FBW. The blue line represents conditions when insecticides are the principal FBW control.


- *Hazelnuts (Filberts) Oregon State University Extension Service website*. [https://catalog.extension.oregonstate.edu/topic/agriculture/hazelnut-production](https://catalog.extension.oregonstate.edu/topic/agriculture/hazelnut-production). This website includes links to all OSU Extension publications for hazelnut production.


---

This work was made possible through the support of the Oregon Hazelnut Commission.

Trade-name products and services are mentioned as illustrations only. This does not mean that the Oregon State University Extension Service either endorses these products and services or intends to discriminate against products and services not mentioned.

© 2018 Oregon State University. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties. Oregon State University Extension Service offers educational programs, activities, and materials without discrimination on the basis of race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, familial/parental status, income derived from a public assistance program, political beliefs, genetic information, veteran's status, reprisal or retaliation for prior civil rights activity. (Not all prohibited bases apply to all programs.) Oregon State University Extension Service is an AA/EOE/Veterans/Disabled.

Published May 2018
You can keep your pest population under control by adding plants to attract beneficial insects. An important key is to plant so that there are blooms year-round — the beneficial insects will not stay or survive through a season if no food is available.

Researchers have identified the following groups whose flowers provide easily accessible nectar and pollen: 1) plants in the daisy family, such as aster, cosmos and yarrow; 2) plants in the carrot family, such as cilantro, dill, fennel, parsley and wild carrot; 3) alyssum and other members of the mustard family; 4) mints; and 5) buckwheat.

In addition, be sure to include some plants with extrafloral nectaries, which are nectar-producing glands apart from the plant’s flowers. Such plants are an important supplemental food source for lady beetles and other beneficial insects, especially during periods of drought or other extreme weather. Plants with extrafloral nectaries include sunflower, morning glory, peony, elderberry, vetch, willow, plum and peach.

Studies have shown that a well-managed hedgerow with a combination of annuals, perennials, shrubs and trees can provide not only food but also shelter; an ideal habitat for many beneficial bugs.

The following is a comprehensive list, modified from Mother Earth News, of flowering plants that are known to be good sources of pollen and nectar for beneficial insects.

**ANNUAL PLANTS**

- Baby’s Breath (*Gypsophila elegans*)
- Bachelor’s Buttons (*Centaura cyanus*)
- Basils (*Ocimum basilicum*)
- Bee Phacelia (*Phacelia tanacetifolia*)
- Bird’s Eyes (*Gilia tricolor*)
- Blue Lace Flower (*Trachymene coerulea*, aka *Didiscus coeruleus*)
- Borage (*Borago officinalis*)
- Buckwheat (*Fagopyrum esculentum*)
- Breadseed Poppy (*Papaver somniferum*)
- Calendula (*Calendula officinalis*)
- California Poppy (*Eschscholtzia californica*)
- Candytuft (*Iberis umbellata*)
- Chervil (*Anthriscus cerefolium*)
- Coriander (*Coriandrum sativum*)
- Corn Poppy (*Papaver rhoes*)
- Cosmos (*Cosmos bipinnatus*)
- Crimson Clover (*Trifolium incarnatum*)
- Dill (*Anethum graveolens*)
- Goldfields (*Lasthenia californica*)
- Johnny Jump-Up (*Viola cornuta*)
- Meadow Foam (*Limnanthes douglasii*)
- Mexican Sunflower (*Tithonia rotundifolia*)
- Pincushion Flower, aka Sweet Scabious (*Scabiosa atropurpurea*)
- Sunflowers (*Helianthus annuus*)
- Sweet Alyssum (*Lobularia maritima*)
- Sweet Marjoram (*Origanum majorana*)
- Tidy Tips (*Layia platyglossa*)
- Yarrow (*Achillea millefolium*)

*Hoverfly on Asters, photo courtesy MJI Photos*

Hoverflies eat aphids, thrips, scale insects and caterpillars
**Perennial Plants**

Anise Hyssop (*Anastache foeniculum*)

Asters (*Aster alpinus and A. tartaricus*)

Blanketflowers (*Gaillardia*).

Boneset (*Eupatorium perfoliatum*).

California Lilac (*Ceanothus Spp.*).

Canada Anemone (*Anemone canadensis*).

Carpet Bugleweeds (*Ajuga*).

Catmints (*Nepeta*).

Cinquefoils (*Potentilla*).

Coffeeberry (*Rhamnus californica*).

Coneflowers (*Echinacea*).

Coyote Brush (*Baccharis pilularis*).

Crimson Thyme (*Thymus serpyllum coccineus*).

Crocus (*Crocus*).

Culver’s Root (*Veronicastrum virginicum*).

Elderberry (*Sambucus mexicana*).

Evening Primrose (*Oenothera biennis*).

Fennel (*Foeniculum vulgare*).

Garlic Chives (*Allium tuberosum*).

Golden Marguerite (*Anthemis tinctoria*).

Goldenrod (*Solidago*).

Horsemint (*Monarda punctata*).

Jerusalem Artichoke (*Helianthus tuberosus*).

Korean Mint (*Anastache rugosa*).

Lavender Globe Lily (*Allium tanguticum*).

Lavenders (*Lavandula*).

Lupines (*Lupinus*).

Meadowsweet (*Spiraea alba*).

Milkweeds (*Asclepias*).

Mints (*Mentha*).

Mountain Mints (*Pycnanthemum muticum and P. virginianum*).

New England Aster (*Symphyotrichum novae-angliae*).

Paleleaf Sunflower (*Helianthus strumosus*).

Penstemon (*Penstemon sp*).

Peonies (*Paeonia*).

Riddell’s Goldenrod (*Oligoneuron riddellii*).

Sand Coreopsis (*Coreopsis lanceolata*).

Sea Lavender (*Limonium latifolium*).

Shrubby Cinquefoil (*Potentilla fruticosa*).

Smooth Aster (*Symphyotrichum laeve*).

St. Catherine’s Lace (*Eriogonum giganteum*).

Stonecrops (*Sedum kamtschaticum, S. spurium, S. album*).

Swamp Milkweed (*Asclepias incarnata*).

Thrift (*Armeria maritima*).

Wild Bergamot (*Monarda fistulosa*).

Wild Strawberry (*Fragaria virginiana*).

Willow (*Salix Spp.*).

Wood Betony (*Stachys officinalis*).

Yarrow (*Achillea millefolium*).

Yellow Coneflower (*Ratibida pinnata*).

Yellow Giant Hyssop (*Agastache nepetoides*).

**Trees and Shrubs**

Burning Bush (*Euonymous*).

California Lilac (*Ceanothus*).

Golden Bells (*Forsythia*).

Maples (*Acer sp*).

Willows.

Heather (*Calluna*).
Whole-Farm Revenue Protection

Whole-Farm Revenue Protection (WFRP) provides a risk management safety net for all commodities on the farm under one insurance policy. This insurance plan is tailored for any farm with up to $8.5 million in insured revenue, including farms with specialty or organic commodities (both crops and livestock), or those marketing to local, regional, farm-identity preserved, specialty, or direct markets.

**Availability**
WFRP is available in all counties in all 50 states.

**Causes of Loss**
WFRP provides protection against the loss of insured revenue due to an unavoidable natural cause of loss which occurs during the insurance period and will also provide carryover loss coverage if you are insured the following year. See the policy for a list of covered causes of loss.

**Important Dates**

**Sales Closing, Cancellation, & Termination Dates**
- Calendar Year and Early Fiscal Year Filers: January 31, February 28, or March 15 (by county)
- Late Fiscal Year Filers: November 20

**Revised Farm Operation Report Dates**
- All Filers: July 15
- Contract Change Date: August 31

Talk to your crop insurance agent about the dates that apply for your county.

**Insurance Period**
Coverage is provided for the duration of the producer’s tax year (the insurance period). The insurance period is a calendar year if taxes are filed by calendar year, or a fiscal year if taxes are filed by fiscal year.

**Reporting Requirements**

**Revenue Losses** - You must submit a notice of loss within 72 hours after discovery that revenue for the policy year could be below the insured revenue. Inspections may be required for losses. You must have filed farm taxes for the policy year before any claim can be made. You must make claims no later than 60 days after the date you submit farm tax forms to the Internal Revenue Service (IRS). Claim payments for a revenue loss under WFRP are paid within 30 days of the determination of a payment due as long as you are in compliance with the policy.

**Coverage**
WFRP protects your farm against the loss of farm revenue that you earn or expect to earn from:

- Commodities you produce during the insurance period, whether they are sold or not;
- Commodities you buy for resale during the insurance period; and
- All commodities on the farm except timber, forest, and forest products; and animals for sport, show, or pets.

The policy also provides replant coverage:

- For annual crops, except those covered by another Federal crop insurance policy;
- Equal to the cost of replanting up to a maximum of 20 percent of the expected revenue; and
- When 20 percent or 20 acres of the crop needs to be replanted.

The approved revenue amount is determined on your Farm Operation Report and is the lower of the expected revenue or your whole-farm historic average revenue. Coverage levels range from 50 percent to 85 percent. Catastrophic Risk Protection (CAT) coverage is not available.

The number of commodities produced on the farm are counted using a calculation that determines:

- If the farm has the diversification needed to qualify for the 80 and 85 percent coverage levels (there is a 3 commodity requirement);
- The amount of premium rate discount you will receive due to farm diversification; and
- The subsidy amount. Farms with 2 or more commodities will receive a whole-farm subsidy and farms with one commodity will receive a basic subsidy.

You can buy WFRP alone or with other buy-up level (additional coverage) Federal crop insurance policies. When you buy WFRP with another Federal crop insurance policy, the WFRP premium is reduced due to the coverage provided by the other policy. If you have other Federal crop insurance policies at catastrophic coverage levels you do not qualify for WFRP.

*This fact sheet gives only a general overview of the crop insurance program and is not a complete policy. For further information and an evaluation of your risk management needs, contact a crop insurance agent.*
WFRP ‘insured revenue’ is the total amount of insurance coverage provided by this policy. Your crop insurance agent and approved insurance provider determine the farm’s ‘approved revenue’ using the following information:

- Whole-Farm History Report;
- Farm Operation Report;
- Information regarding growth of the farm; and
- The coverage level you choose (50-85 percent) multiplied by the approved revenue is the insured revenue amount.

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>Commodity Count (Minimum Required)</th>
<th>Maximum Farm Approved Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>3</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>80</td>
<td>3</td>
<td>$10,625,000</td>
</tr>
<tr>
<td>75</td>
<td>1</td>
<td>$11,333,333</td>
</tr>
<tr>
<td>70</td>
<td>1</td>
<td>$12,142,857</td>
</tr>
<tr>
<td>65</td>
<td>1</td>
<td>$13,067,923</td>
</tr>
<tr>
<td>60</td>
<td>1</td>
<td>$14,166,167</td>
</tr>
<tr>
<td>55</td>
<td>1</td>
<td>$15,454,545</td>
</tr>
<tr>
<td>50</td>
<td>1</td>
<td>$17,000,000</td>
</tr>
</tbody>
</table>

The Commodity Count in the table above is a measure of the farm’s diversification, determined by the policy. The calculation determines the minimum proportion of revenue a commodity must contribute to the farm to be considered a commodity for WFRP. A farm’s revenue would be evenly distributed if an equal percentage of revenue came from each commodity produced, for example, 25 percent from corn, 25 percent from soybeans, 25 percent from spinach, and 25 percent from carrots. The minimum proportion to be considered a countable commodity is one-third of that amount. In this example, for corn, soybeans, spinach, or carrots to each county, each commodity would have to make up at least 8.3 percent of the total revenue of the farm to count as a commodity under WFRP. Commodities with revenue below the minimum will be grouped together in order to recognize farm diversification (this will make the commodity count higher). The Maximum Farm Approved Revenue represents the maximum approved revenue for a farm to be eligible for WFRP given the $8.5 million maximum liability allowed.

**Eligibility**

Eligibility for WFRP coverage requires you to:

- Be eligible to receive Federal benefits;
- Be a U.S. citizen or resident;
- File either a Schedule F tax form or other farm tax form that can be converted to a Substitute Schedule F for a specified number of years (see information you provide below);
- Have no more than $8.5 million in insured revenue, which is the farm revenue allowed to be insured under the policy multiplied by the coverage level you select (see table above);
- Have no more than $1 million expected revenue from animals and animal products;
- Have no more than $1 million from greenhouse and nursery;
- Have no more than 50 percent of total revenue from commodities purchased for resale;
- Have ‘buy-up’ coverage levels on any Federal crop insurance plans you choose in addition to the WFRP insurance plan;
- Meet the diversification requirements of the policy by having two or more commodities if a commodity you are raising has revenue protection or actual revenue history insurance available; and
- Meet the diversification requirements of the policy by having two or more commodities if there are potatoes on the farm.

**Information You Provide**

There are certain documents you must provide to your crop insurance agent to get Whole-Farm Revenue Protection insurance. For the Whole-Farm History Report you must provide:

- 5 consecutive years of Schedule F or other farm tax forms (it must be possible to complete a Substitute Schedule F form if you filed farm tax forms other than Schedule F). For the 2018 policy year, tax forms from 2012-2016 are required except:
  - If you qualify as a Beginning Farmer or Rancher (BFR) under our procedures, you may qualify with 3 consecutive years of Schedule F or other farm tax forms if you also farmed during the past year (it must be possible to complete a Substitute Schedule F form if you filed farm tax forms other than Schedule F). For the 2016 insurance year, tax forms from 2012-2014 are required and you also must have farmed during 2015;
  - If you were physically unable to farm for 1 of the 5 required historic years but were farming the past year, you may qualify; or
  - If you are a tax exempt entity (such as a Tribal entity) and have acceptable third party records available that can be used to complete Substitute Schedule F tax forms for the 5 year history.
Growing Farm Operations
Operations that have been expanding over time may be allowed to increase their approved revenue amount based on an indexing procedure, or, if you can show that your operation has physically expanded (land, animals, facilities, or production capacity) so it has the potential to produce up to 35 percent more revenue than the historic average, your insurance company may approve your operation as an expanding operation to reflect that growth in the insurance guarantee.

Prices
Prices used to value commodities must be based on the guidelines for prices in the policy. Organic prices that meet the policy requirements are allowed for valuing organic commodities.

Market Readiness Operations and Post Production Costs
Market readiness operations such as on-farm activities that occur in or near the field and are the minimum needed to remove the commodity from the field and make it market ready can be left in the allowable revenue and expenses. The cost from all other post production operations not considered market readiness operations must be removed from the allowable revenue and expenses, including activities that increase the value of a commodity such as canning, freezing, and processing activities.

Losses
Claims are settled after taxes are filed for the policy year. A loss under the WFRP policy occurs when the WFRP revenue-to-count for the insured tax year falls below the WFRP insured revenue. Revenue-to-count for the insured tax year is:

- Revenue from the tax form that is ‘approved revenue’ according to the policy;
- Adjusted by excluding inventory from commodities sold that were produced in previous years;
- Adjusted by including the value of commodities produced during the tax year that have not yet been harvested or sold; and
- Any other adjustments required by the policy such as those from uninsured causes of loss.

If the farm operation does not have expenses during the insurance period of at least 70 percent of the “approved expenses” the insured revenue amount will be reduced by 1 percent for each percentage point the actual approved expenses are below 70 percent of the approved expenses.

Premium Subsidy
Farms with two or more commodities will receive a whole-farm premium subsidy as long as the minimum diversification requirements are met. Farms with one commodity will receive the basic level of premium subsidy.

Buying Whole Farm Revenue Protection
You can buy Whole-Farm Revenue Protection from a crop insurance agent by the sales closing date shown for each county in the actuarial documents at webapp.rma.usda.gov/apps/actuarialinformationbrowser/. A list of crop insurance agents is available at all USDA service centers and on the RMA website at www.rma.usda.gov/tools/agent.html.

Contact Us
USDA/RMA
Mail Stop 0801
1400 Independence Ave., SW
Washington, DC 20250
Phone: (202) 690-2803
Fax: (202) 690-2818
Website: www.rma.usda.gov
Email: rma.cco@rma.usda.gov
# 2018 WFRP Full Estimate
## Standalone Organic 10 Acres

<table>
<thead>
<tr>
<th>Insured's Name</th>
<th>Agent Name</th>
<th>Crop Year</th>
<th>Policy Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon Hazelnut WFRP Example</td>
<td>Agent NWFC</td>
<td>2018</td>
<td>1323</td>
</tr>
</tbody>
</table>

## Historical Revenue

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$130,473</td>
</tr>
<tr>
<td>2013</td>
<td>$200,926</td>
</tr>
<tr>
<td>2014</td>
<td>$223,976</td>
</tr>
<tr>
<td>2015</td>
<td>$263,361</td>
</tr>
<tr>
<td>2016</td>
<td>$254,530</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,073,266</strong></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>$214,653</strong></td>
</tr>
</tbody>
</table>

## WFRP Estimate Details

- **State:** Oregon
- **County:** Marion
- **Accounting Method:** Cash
- **Tax Year:** Calendar Year
- **Expanded Operation:**
  - Adjusted Amount: $0
  - MPCI Liability Credit: $0

## Historical Expenses

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$44,623</td>
</tr>
<tr>
<td>2013</td>
<td>$49,427</td>
</tr>
<tr>
<td>2014</td>
<td>$56,538</td>
</tr>
<tr>
<td>2015</td>
<td>$82,762</td>
</tr>
<tr>
<td>2016</td>
<td>$81,155</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$314,505</strong></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>$62,901</strong></td>
</tr>
</tbody>
</table>

## Maximum Approved Revenue

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>$214,653</td>
<td>1.000</td>
</tr>
<tr>
<td>Index</td>
<td>$330,566</td>
<td>1.540</td>
</tr>
<tr>
<td>Expanded</td>
<td>$0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

## Maximum Approved Expenses

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>$62,901</td>
<td>1.000</td>
</tr>
<tr>
<td>Index</td>
<td>$94,792</td>
<td>1.507</td>
</tr>
<tr>
<td>Expanded</td>
<td>$0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

## Qualifying Commodity Info

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Method of Establishment</th>
<th>Yield</th>
<th>Unit of Measure</th>
<th>Expected Value</th>
<th>Expected Revenue</th>
<th>Intended Quantity</th>
<th>Cost Basis/Value</th>
<th>Share</th>
<th>Total Expected</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazelnuts</td>
<td>ACRE</td>
<td>3,000.0</td>
<td>LBS</td>
<td>$9.0000</td>
<td>$27,000.00</td>
<td>10,000</td>
<td>$0</td>
<td>1.0000</td>
<td>$270,000</td>
<td>100</td>
</tr>
</tbody>
</table>

**Qualifying Commodity:** Hazelnuts

## Farm Operation Report

<table>
<thead>
<tr>
<th>Amount</th>
<th>Factor</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>$270,000</td>
<td>1.258</td>
<td>Uptrending</td>
</tr>
</tbody>
</table>

## Approved Revenue

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>Income Trigger</th>
<th>Expense Trigger</th>
<th>Premium</th>
<th>Subsidy %</th>
<th>Max MP Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>$135,000</td>
<td>$56,391</td>
<td>$5,970.00</td>
<td>67%</td>
<td>$67,500</td>
</tr>
<tr>
<td>55%</td>
<td>$148,500</td>
<td>$56,391</td>
<td>$7,591.00</td>
<td>64%</td>
<td>$74,250</td>
</tr>
<tr>
<td>60%</td>
<td>$162,000</td>
<td>$55,391</td>
<td>$8,748.00</td>
<td>64%</td>
<td>$81,000</td>
</tr>
<tr>
<td>65%</td>
<td>$175,500</td>
<td>$55,391</td>
<td>$11,657.00</td>
<td>60%</td>
<td>$87,750</td>
</tr>
<tr>
<td>70%</td>
<td>$189,000</td>
<td>$55,391</td>
<td>$14,491.00</td>
<td>59%</td>
<td>$94,500</td>
</tr>
<tr>
<td>75%</td>
<td>$202,500</td>
<td>$55,391</td>
<td>$19,865.00</td>
<td>59%</td>
<td>$101,250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coverage Level Options</th>
<th>50%</th>
<th>55%</th>
<th>60%</th>
<th>65%</th>
<th>70%</th>
<th>75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Trigger</td>
<td>$135,000</td>
<td>$148,500</td>
<td>$162,000</td>
<td>$175,500</td>
<td>$189,000</td>
<td>$202,500</td>
</tr>
<tr>
<td>Expense Trigger</td>
<td>$56,391</td>
<td>$56,391</td>
<td>$55,391</td>
<td>$55,391</td>
<td>$55,391</td>
<td>$55,391</td>
</tr>
<tr>
<td>Premium</td>
<td>$5,970.00</td>
<td>$7,591.00</td>
<td>$8,748.00</td>
<td>$11,657.00</td>
<td>$14,491.00</td>
<td>$19,865.00</td>
</tr>
<tr>
<td>Subsidy %</td>
<td>67%</td>
<td>64%</td>
<td>64%</td>
<td>60%</td>
<td>59%</td>
<td>59%</td>
</tr>
<tr>
<td>Max MP Credit</td>
<td>$67,500</td>
<td>$74,250</td>
<td>$81,000</td>
<td>$87,750</td>
<td>$94,500</td>
<td>$101,250</td>
</tr>
</tbody>
</table>

This is an estimate for Whole Farm Revenue Protection, not an offer of coverage. Actual coverage and cost may change through underwriting.
# 2018 WFRP Full Estimate
## Two Crops Organic 15 Acres

<table>
<thead>
<tr>
<th>Historical Revenue</th>
<th>WFRP Estimate Details</th>
<th>Historical Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$130,473</td>
<td>State: Oregon</td>
</tr>
<tr>
<td>2013</td>
<td>$200,926</td>
<td>County: Marion</td>
</tr>
<tr>
<td>2014</td>
<td>$223,976</td>
<td>Accounting Method: Cash</td>
</tr>
<tr>
<td>2015</td>
<td>$263,361</td>
<td>Tax Year: Calendar Year</td>
</tr>
<tr>
<td>2016</td>
<td>$254,530</td>
<td>Expanded Operation?:</td>
</tr>
<tr>
<td>Total</td>
<td>$1,073,266</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>$214,653</td>
<td>Adjusted Amount: 0</td>
</tr>
<tr>
<td>MPCI Liability Credit: 0</td>
<td></td>
<td>Maximum Approved Expenses:</td>
</tr>
</tbody>
</table>

## Maximum Approved Revenue

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>$214,653</td>
<td>1.000</td>
</tr>
<tr>
<td>Index</td>
<td>$330,566</td>
<td>1.540</td>
</tr>
<tr>
<td>Expanded</td>
<td>$0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

## Qualifying Commodity Info

<table>
<thead>
<tr>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.7%</td>
<td>11.1%</td>
<td>8.3%</td>
<td>6.7%</td>
<td>5.6%</td>
</tr>
<tr>
<td>$55,528</td>
<td>$36,908</td>
<td>$27,598</td>
<td>$22,278</td>
<td>$18,620</td>
</tr>
</tbody>
</table>

## Farm Operation Report

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Method of Establishment</th>
<th>Yield</th>
<th>Unit of Measure</th>
<th>Expected Value</th>
<th>Expected Revenue</th>
<th>Intended Quantity</th>
<th>Cost Basis/Value</th>
<th>Share</th>
<th>Total Expected</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazelnuts</td>
<td>ACRE</td>
<td>3,000.0</td>
<td>LBS</td>
<td>$9,000</td>
<td>$27,000.00</td>
<td>10,000</td>
<td>$0</td>
<td>1,000</td>
<td>$270,000</td>
<td>81.20</td>
</tr>
<tr>
<td>Blueberries</td>
<td>ACRE</td>
<td>10,000.0</td>
<td>LBS</td>
<td>$12,500</td>
<td>$5,000</td>
<td>$0</td>
<td>$0</td>
<td>1,000</td>
<td>$62,500</td>
<td>18.80</td>
</tr>
<tr>
<td>Qualifying Commodity: 2</td>
<td>15,000</td>
<td>$332,500</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Approved Revenue

<table>
<thead>
<tr>
<th>Amount</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>$330,566</td>
<td>1.540</td>
</tr>
</tbody>
</table>

## Coverage Level Options

<table>
<thead>
<tr>
<th>Coverage Level:</th>
<th>50%</th>
<th>55%</th>
<th>60%</th>
<th>65%</th>
<th>70%</th>
<th>75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Trigger:</td>
<td>$165,283</td>
<td>$181,811</td>
<td>$198,340</td>
<td>$214,868</td>
<td>$231,396</td>
<td>$247,925</td>
</tr>
<tr>
<td>Premium:</td>
<td>$3,273.00</td>
<td>$3,782.00</td>
<td>$4,403.00</td>
<td>$5,200.00</td>
<td>$6,525.00</td>
<td>$8,033.00</td>
</tr>
<tr>
<td>Subsidy %:</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Max MP Credit:</td>
<td>$82,642</td>
<td>$90,906</td>
<td>$99,170</td>
<td>$107,434</td>
<td>$115,698</td>
<td>$123,962</td>
</tr>
</tbody>
</table>

---

This is an estimate for Whole Farm Revenue Protection, not an offer of coverage. Actual coverage and cost may change through underwriting.
Oregon Tilth’s Quick Start Guide series is designed to provide all of the basics necessary to jump right in and get started on certification-related actions immediately.
Thinking about transitioning to organic but not sure where to start? This Quick Start Guide for Transitioning to Organic is intended to ask (and answer) big questions as well as provide you with resources and tools to use as you work towards organic certification.

IMPORTANT QUESTIONS & GUIDELINES:

HOW LONG IS THE TRANSITION PROCESS?

WHAT RULES AND REGULATIONS DO I NEED TO FOLLOW DURING THE TRANSITION PERIOD?

WHAT RECORDS DO I NEED TO KEEP DURING TRANSITION?

WHAT ARE THE RULES FOR TRANSITIONING LIVESTOCK?

WHAT IS TRANSITIONAL CERTIFICATION?

WHEN SHOULD I APPLY FOR ORGANIC CERTIFICATION?

LET’S GET STARTED! ★ ★ ★
HOW LONG IS THE TRANSITION PROCESS?
Understanding the requirements for transitioning a conventional farm to organic production - from timelines, to rules and regulations - is an important part of the process. A period of three (3) years is required to make the transition from conventional agriculture to certified organic production. This transitional time is calculated from the date of the last use of a prohibited material up to the harvest date of the first organic crop. If the land is free of prohibited materials for three or more years, it is eligible to be reviewed for organic production requirements immediately.

Food for Thought:
PLANTING TIMELINE
A producer may plant a crop destined to be sold as certified organic before their organic certification eligibility date. In order to harvest the crop as organic, all of the following criteria must be met:

1. The crop’s first harvest date is after the full 36 months or three years from last prohibited material application.
2. The land was inspected by an organic inspector.
3. The producer received final certification from an accredited certification agent.

DEFINED:
1
PROHIBITED MATERIAL
A prohibited material is any agricultural input that in any aspect of organic production or handling is prohibited by the USDA National Organic Standards.
TRANSITION TO ORGANIC:
THE TRANSITION PROCESS

Calculating Land Eligibility for
ORGANIC CERTIFICATION

DATE OF LAST USE
OF PROHIBITED MATERIALS

THREE YEAR (36 MONTHS)
LAND REQUIREMENT

ORGANIC
CERTIFICATION
ELIGIBILITY DATE

MAY 15, 2015
Corn with synthetic seed treatment planted

THREE YEARS
(36 MONTHS)

CERTIFICATION
ELIGIBILITY DATE:
MAY 16, 2018

TRANSITION STRATEGIES:
Transitioning to organic takes a lot of preparation, planning and forward thinking. Since this process takes time and resources, you do not need to transition all of your land into organic production at the same time.

Some transition strategies include:

FULL TRANSITION:
Transition all land to organic production at once

GRADUAL TRANSITION:
Transition land one field at a time, with the end goal of certifying all land eventually

SPLIT TRANSITION:
Simultaneously manage both conventional and organic land
WHAT RULES + REGULATIONS DO I NEED TO FOLLOW DURING THE TRANSITION PERIOD?

For 36 months leading up to organic certification, producers must only use materials that are allowed in organic production according to the USDA National List of Allowed and Prohibited Substances. This includes all inputs, fertilizers, pest and disease controls, seeds, livestock treatments, cleaning agents, and any other materials used on the farm.

HOW DO I DETERMINE IF A MATERIAL IS ALLOWED?

1. REVIEW THE USDA NATIONAL LIST OF ALLOWED AND PROHIBITED SUBSTANCES
2. CHECK IF THE MATERIAL IS LISTED ON THE APPROVED LISTS OF BRAND NAME OR GENERIC MATERIALS
3. CONFIRM ALL MATERIALS WITH YOUR CERTIFIER

Synthetic materials cannot be used in organic production unless they are specifically approved. Natural (also called non-synthetic) materials can be used unless they are specifically prohibited.

The Organic Materials Review Institute (OMRI) and the Washington State Department of Agriculture (WSDA) maintain and update lists of materials and products approved for organic production. Always check with your certifier prior to use to verify that the material is allowed for your organic production.

HOW IS THE NATIONAL LIST ORGANIZED?

§ 205.600-606 Section of the National Organic Standards that lists the allowed and prohibited inputs for the different scopes of organic production. Basically, any non-synthetic substances are allowed in organic production and handling unless they are on this list as prohibited, and all synthetic substances are prohibited unless they are on this list as allowed.

§ 205.601 Lists synthetic materials allowed for organic crop production, including any annotations that restrict use

§ 205.602 Lists nonsynthetic (natural) materials prohibited for use in organic crop production

§ 205.603 Lists allowed synthetic materials for organic livestock production, including any annotations that restrict use

§ 205.604 Lists prohibited nonsynthetic (natural) materials
WHAT RECORDS DO I NEED TO KEEP DURING THE TRANSITION PROCESS?

Producers are required to keep records on all activities and transactions to demonstrate compliance with the USDA National Organic Program (NOP) Standards. Certain records must be submitted with the certification application, commonly called the Organic System Plan (OSP). Additional records must be available to inspectors when they visit an operation. It is important to establish a Recordkeeping Plan early on, describing your process of tracking information from seed to sale.

FARM MAP
The map must include the name or code of the parcel to be certified, the location, description and size of any buffer areas, neighboring land uses, processing areas, location of buildings, and the presence or use of treated lumber on the farm.

HISTORY OF LAND USE AND MATERIAL APPLICATIONS:
Include records of land use practices and all material applications over the last three years. This includes a signed statement or affidavit that no prohibited materials were applied or used.

PLANNED MATERIALS:
A comprehensive list of all materials, including seeds, fertilizers, pest, weed and disease control materials applied to crops during the upcoming year.

PLANNED CROPS:
Provide a list of all of your crops to be produced, including the location, and acreage for each crop. You can change your OSP throughout the year, just make sure to notify your certifier.

TOOL TIPS: MATERIAL INFORMATION TO SAVE FOR YOUR INSPECTION
- Product Name
- Manufacturer Name
- Original or photocopy of label with ingredients
- Purchase receipts
- Quantity and location of material applied
- Compliance documentation (OMRI Certificate or Certifier Approval Letter)

RECORDKEEPING RESOURCES
Recordkeeping Forms for Organic Producers: http://1.usa.gov/23ckQMd
Organic Field Crops Documentation Forms: http://bit.ly/1W7Q05q
Organic Livestock Documentation Forms: http://1.usa.gov/1N9086P
### Transition to Organic: Livestock

**What are the rules for transitioning livestock?**

<table>
<thead>
<tr>
<th>Dairy Animals</th>
<th>Slaughter Stock</th>
<th>Breeding Stock</th>
<th>Poultry</th>
</tr>
</thead>
</table>
| Dairy animals require a one-year (1) transition period. During this time, milking animals can be fed:  
  - Certified organic feed and pasture  
  - Feed grown on land that is managed by the producer and eligible for organic certification  
  - Feed grown on transitional land that is managed by the producer in its last year of transition (e.g., land where a prohibited material was last applied 24 to 36 months ago) | In order for slaughter stock to be sold as organic, they must be under full organic management beginning no later than the third trimester of gestation. This means that the mother cow (or other animal) must be managed organically for at least three (3) months before the slaughter animal was born. **Remember:** Conventional animals can never be transitioned or sold as organic slaughter stock. | Breeding stock does not have to go through a transition process. In order for offspring to be considered organic, the mother must be managed organically for three (3) months before her offspring is born. | Poultry from conventional sources are allowed for the production of organic meat and eggs only if they are raised organically beginning the second day of life (e.g., “day-old chicks”). Older birds grown under conventional management are allowed only as breeder stock for the production of hatching eggs; neither the conventional birds nor their eggs can be sold as organic. |

**Tool Tips:** **Transitional Feed**
The provision for feeding farm-grown, third-year transitional feed is only allowed for herds that are currently in the one-year (1) transition period, and cannot be fed to herds that are already certified organic. All other USDA NOP Standards for Livestock must be followed during the one-year (1) transition period.

**Tool Tips:** **Replacement of Animals in an Organic Dairy Herd**
The allowances for how and when to bring new animals into an organic herd is currently being reviewed by the National Organic Standards Board. We recommend checking with your certifier to verify their interpretation of this part of the standard.

**Livestock Production Resources**

WHAT IS TRANSITIONAL CERTIFICATION?

Oregon Tilth offers voluntary Transitional Certification for operations that are in the process of transitioning land to organic. The Transitional Certification service acts as a stepping-stone for operations that desire certification for parcels of land but do not meet the three year land history requirements.

Why should I consider Transitional Certification?

UNDERSTAND THE PROCESS

This service helps you become familiar with the certification and inspection processes and minimizes risk of non-compliance issues when applying for organic certification in the future.

EFFICIENT PLANNING

This service introduces you to the necessary paperwork and records needed for organic certification. This will help with future planning and ensure completion of the certification process prior to your first organic harvest.

ACCESS TO MARKETS

Certain companies or buyers may offer a premium price for products labeled as Certified Transitional, creating access to additional markets and customer bases.

INCREASE CUSTOMER LOYALTY

Transitional certification provides proof that you are on your way to provide customers with goods and services that meet their growing needs. Show customers your commitment to becoming organic by labeling your products as Certified Transitional.

TOOL TIPS: APPLYING FOR OREGON TILTH'S TRANSITIONAL CERTIFICATION

For Transitional Certification, you must submit an Organic System Plan and affirm that your land is free of prohibited materials for a minimum of 1 year. For the next two years of transition, your operation must renew the transitional certification and undergo an inspection just like all other organically certified clients.

TOOL TIPS: CERTIFIED TRANSITIONAL LABELING

During this time period, transitional agricultural products must not be labeled, sold or represented using the word “organic” in any form. Producers must be certified transitional in order to label their products as “Transitional Certified.”

(Certification is not required to label products as “transitional.”)
WHEN SHOULD I APPLY FOR ORGANIC CERTIFICATION?

Most organic certifiers accept applications on a rolling basis. While the amount of time it takes to certify an applicant varies based on the operation’s complexity, three to six months is a general estimate. If you plan to sell a certified product by a specific date, notify your certifier well in advance so there is adequate time to review the application and send an inspector to your operation. Oregon Tilth offers expedited services and will prioritize the review and inspection of your operation for an additional fee.

The Oregon Tilth Certification Process

**SUBMIT APPLICATION**  
Applications take an average of 3-6 months to process, inspect, review and approve. Expedited services are available for an additional fee.

**FIRST REVIEW**  
Oregon Tilth reviews application to evaluate organic standards compliance. We may request additional information.

**INSPECTION**  
An inspector visits your operation to verify organic standards compliance. Inspections usually last 3-5 hours.

**FINAL REVIEW**  
Oregon Tilth reviews your application and the inspector’s report to evaluate compliance with the organic standards.

**CERTIFICATION**  
We will send the organic certificate identifying your company, category of certification and certified organic products or services.

COMPLETING YOUR ORGANIC SYSTEM PLAN (OSP)

To apply for certification, you must fill out an application, commonly known as the OSP. The OSP is the foundation of the organic certification process and is the primary document by which a producer demonstrates compliance with USDA NOP Standards on all aspects of their operation.

**OSP TIPS:**

- Confirm which OSP forms you need to fill out if you are unsure. Not all forms are required to be filled out for all operations.
- Anytime you make a significant change to your OSP, whether it be using a new input, growing a different crop, or purchasing new animals, notify your certifier to ensure that the change can be approved.

CERTIFICATION TIPS:

- Familiarize yourself with the certification application early in the transition process.
- Develop a recordkeeping plan as soon as you decide to transition.
- Review the USDA NOP Standards: [http://1.usa.gov/1XeLoJa](http://1.usa.gov/1XeLoJa).
- Find an organic grower in your community and ask them to be your mentor.
CASE STUDY 1:
AGRI-STAR FARMS

In 1999, Doug Lewis began the “interesting challenge” of transitioning over 800 acres in North Powder, Oregon. Throughout the process, Doug faced several challenges common to transitional organic producers. Providing adequate fertility for his crops—organic barley, wheat, oats, potatoes and yellow mustard seed—was challenging for Doug when transitioning to organic. Chicken manure is readily available but expensive, and repeated applications can lead to excessive levels of phosphorus and potassium in the soil. With support from the Natural Resource Conservation Service, Doug is exploring nutrient cycling with alfalfa, using longer crop rotations to provide nitrogen without increasing other nutrients.

Learn more about Agri-Star Farms Transition Story

CASE STUDY 2:
JOHNATHAN + CAROLYN OLSON

During the past 15 years, Jonathan and Carolyn gradually transitioned 1,100 acres. Throughout the transition, they’ve maintained what’s known as a “split operation” with some ground under organic and some under conventional management. With consistently good yields and premiums earned for organic crops, the Olsons are reaching their long-term goal of fully paying down farm debt. “Financially, the last couple of years have been very rewarding,” says Jonathan. Their three-year rotation includes corn, soybeans and, in year three, small grains followed by a cover crop. The Olson’s organic corn yields regularly equal or exceed conventional county averages while their organic soybeans yield slightly below conventional averages.

Learn more about the Olson’s transition process.

Credit: DiGiacomo, Gigi and Robert P. King. 2015. “Making the Transition to Organic: Ten farm Profiles.” University of Minnesota and the USDA National Institute of Food and Agriculture.
**TRANSITION TO ORGANIC NETWORK:**
The Transition to Organic Network (TON) is a nationwide online community of farmers, processors, buyers, agricultural service providers and other food system stakeholders. TON members connect and communicate with each other via a listserv to:

- exchange questions and resources related to transitional and organic agriculture and certification
- network and develop relationships with other actors in the transitional and organic community
- stay informed about educational opportunities and programs for transitioning and organic producers and buyers

**Subscribe to the Transition to Organic Network**

**CONSERVATION SERVICES (NRCS):**
The NRCS provides technical and financial assistance to producers who are transitioning from conventional to organic agriculture. Services include:

- **Develop a Conservation Activity Plan (CAP) 138:** A CAP can be developed for producers to identify conservation practices needed to address a specific natural resource need. With a CAP, producers can apply for NRCS financial assistance (e.g. EQIP) to implement the needed conservation practices.

- **The Environmental Quality Incentives Program’s Organic Initiative (EQIP):** The EQIP program provides technical and financial assistance (up to $20,000/year) to implement conservation planning and practices to address resource concerns associated with organic operations that are challenging for transitioning producers, such as establishing buffer zones, improving soil quality while minimizing erosion, and more.

**Additional Transition Resources**

- **Organic Farming Resources:** https://attra.ncat.org/organic.html
- **Sound & Sensible Blog (USDA):** https://www.ams.usda.gov/report-presentation/sound-sensible
- **Tools for Transition Project (eOrganic):** http://eorganic.info/group/7820
- **Making the Transition to Organic:** http://www.misa.umn.edu/Publications/MakingtheOrganicTransition/index.htm
- **Big Questions Answered: Preparing for an Organic Inspection:** https://tilth.org/resources/big-questions-answered-preparing-for-an-inspection
2018 Organic Field Day
Nik Wiman, OSU Orchard Specialist

2018 Organic Transitions (ORG) grant objectives:
1. Recommend cover crops that maximize N, suppress weeds and demonstrate the optimal timing for termination for maximum PAN.
2. Rank off-farm fertility sources and their contribution to PAN in hazelnut orchards.
4. Demonstrate consistent, low-cost control of suckers relative to hand pruning (with Marcelo Moretti, mechanical and steam control)

Estimated costs (based on PAN – plant available N = ammonium and nitrate) of off-farm nitrogen sources for hazelnuts vs. cover crop.

<table>
<thead>
<tr>
<th></th>
<th>N (%)</th>
<th>P (%)</th>
<th>K (%)</th>
<th>Estimated price/lb</th>
<th>Estimated PAN (%)</th>
<th>Estimated $/lb PAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feather meal</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>$1.00</td>
<td>75</td>
<td>$6.25</td>
</tr>
<tr>
<td>Blood meal</td>
<td>12.5</td>
<td>1.5</td>
<td>0.6</td>
<td>$2.00</td>
<td>75</td>
<td>$12.80</td>
</tr>
<tr>
<td>Fish meal</td>
<td>10</td>
<td>6</td>
<td>2.4</td>
<td>$2.65</td>
<td>75</td>
<td>$11.33</td>
</tr>
<tr>
<td>Manure (raw)</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>---</td>
<td>50</td>
<td>$0.40-1.50</td>
</tr>
<tr>
<td>Manure (pelletized)</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>$0.32</td>
<td>50</td>
<td>$9.00</td>
</tr>
<tr>
<td>Urea</td>
<td>46</td>
<td>0</td>
<td>0</td>
<td>$0.21</td>
<td>100</td>
<td>$0.43</td>
</tr>
</tbody>
</table>

Vetch cover crop² | 3 | 0 | 0 | $0.028 | 3 | $2.33

¹ Manure is currently under evaluation by FDA, USDA organic rules apply, 120 day before harvest.
² Assumes production cost of $140/ac with 2.5 tons DM; see PNW 636 Estimating plant-available nitrogen release from cover crops by Sullivan and Andrews.

Quick math: 1-2 lb N per tree per year for bearing orchard (single density) = 108-216 lbs N per year = $675 - $1,350/Ac for feather meal = $1,223 - $2,447/Ac for fish meal. Compare to $46.44 - $92.88 for urea. In reality, cover crop would likely be used in combination with other fertility sources.

Annual cover crop mix (triticale, vetch, and phacelia) on Feb. 20 (left) and April 20, (right). The relatively large seed size of the annual mix compared to the perennial crops tested likely helped the annual cover crop establish.

Cover crop issues specific to hazelnuts in WV
- Optimal seeding time is before hazelnut harvest – winter kill and leaf drop
Legume cover crop is best killed at bud stage = mid May. This could allow drought-resistant summer weeds to establish
Method of incorporation/kill and timing of PAN release – too late?
Legume crops are very attractive to rodents
Erosional loss during winter
Shade in mature orchards
Harvest surface and regeneration of perennial cover crops with early rain

Biomass and N uptake from the annual cover crop mix (triticale, vetch, and phacelia) taken from cover crop trials in May. Each bar is the average of 3 replicates (2 subsamples per replicate).

**Organic filbertworm management:** Unmanaged filbertworm infestations will ultimately result in approximately 30-40% wormy nuts. Industry tolerance for insect damage is currently 1%. Mating disruption is only appropriate when the FBW population is already under control.

Some growers have struggled to manage FBW with organic materials. Here are some take homes from our trial work:

- High populations may take several seasons to get under control without conventional materials. Problems can start early: keep on top of FBW or transition from conventional.
- Use oils when possible/compatible – oil can greatly enhance efficacy especially when used with the FBW phenology model to time applications to oviposition.
- We will pursue labeling for virus if it succeeds again this year.
- Surround can be utilized for long-term FBW control but may be difficult wash off shells.

1. UTC: untreated control
2. Asan: Asana, conventional standard
3. En + O: Entrust + Horticultural Oil (OMRI)
4. Altc: Altacor, reduced risk conventional
5. Srrn: Surround, kaolin clay (OMRI)
6. Cydx: Cyd-X insecticidal virus (OMRI – not yet registered for hazels)
7. Entr: Entrust (OMRI)
8. AzDr: Aza-Direct azadirachtin (OMRI)
9. Vnrt: Venerate bioinsecticide (OMRI)

2018 trial: Entrust, Entrust + Oil, Cyd-X, Cyd-X HP, Grandevo, Venerate, Oil alone, Surround