

Proposed 2019-20 OHC Research

Researcher	Proposal Topic	15-16 Actual		16-17 Actual		17-18 Actual		18-19 Actual		19-20 Proposed	
		Other	OHC	Other	OHC	Other	OHC	Other	OHC	Other	OHC
Mehlenbacher	Hazelnut Breeding		220,000		227,000		225,000		210,000		210,000
Mehlenbacher	Hazelnut Genomics			1/	0	1/	0	1/	0	1/	0
McCluskey	Advanced Selections		71,408		71,731		77,890		61,000		57,885
Pscheidt	Disease Management	39,000	34,931		36,747		67,808		76,063		77,119
Reed/Wada	Propagation		12,500		15,500		20,375		22,035		34,000
Reed/Wada	Maintenance: Gemplasm										17,300
Walton	Mating Disruption		60,328		47,078		35,220				
Walton	BMSB		16,150		16,150						
Walton	Biology & Behavior of Filbertworm								38,810		
Walton	Develop Pest Management Systems										64,333
Wiman	Precision Irrigation				12,370		17,283		31,360		23,903
Wiman	Foliar Nutrient Analysis				16,935		29,864		28,604		18,346
Wiman	Bacterial Blight				9,799						
Wiman	Remote Sensing - HOH Stress						13,889				
Wiman	Flatheaded Borer Mngmt						14,643		24,968		13,278
Wiman	Evaluating Trunk Guard Effects								14,968		
Wiman	GPS Weigh Cart for Harvest Data								10,334		
Wiman	Field Grafting Hazelnuts										2,898
Moretti	Optimizing Sucker Control						5,000		18,240		21,782
Moretti	Propagation Technique & Herbicide Crop Safety								23,916		23,916
Moretti	Herbicide Tools to Control Italian Ryegrass										15,000
Zhao	Ensuring Nut Quality & Safety								99,343		85,324
Johnson	Evaluation of Systemic Acquired Resistance								38,543		
Vining										50,000	50,000
Totals		39,000	\$ 415,317	\$ -	\$ 453,310	\$ -	\$ 506,972	\$ -	\$ 698,184	\$ 50,000	\$ 715,084

2018 Hazelnut Industry Acreage Data Sheet (updated 12/03/2018)

Year-End 2018 Notes:

With no release of USDA NAIP imagery for Oregon the 2018 acreage inventory is based on commercially available imagery. Coverage for the Willamette Valley had been uneven until early August with some areas lacking 2018 imagery or having cloudy and unusable imagery from January and February. In late summer and early fall new imagery was released that covers most of the main growing regions of the Willamette Valley. The acreage totals in this data sheet reflect the latest information available as of 12/03/2018. The rapid growth in new plantings continues, though 2018 appears not to reach the peak levels of 2017. New acreage for 2017 was revised upwards significantly as better quality and expanded imagery coverage became available this year. Marion and Yamhill counties continue to have the largest total acreage while Benton and Linn counties are experiencing the fastest growth in new acreage.

Updated Industry Acreage Totals - December 2018

78,603 total acres
39,716 acres 1-5 years
11,284 acres 6-10 years
27,603 acres mature
30,389 acres new and maturing trees in double-density

New Acres Planted by Year

<u>Year</u>	<u>Acres Planted</u>	
2007	207	Age Class 3
2008	613	
2009	1,677	
2010	1,443	Age Class 2
2011	1,643	
2012	3,413	
2013	3,108	
2014	4,358	Age Class 1
2015	6,390	
2016	9,435	
2017	10,881	
2018	8,652	

Recent Mature Acreage Loss

<u>Year</u>	<u>Acres Removed</u>
2015	297
2016	832
2017	877
2018	399

Hazelnut Acreage by County - 2018

County	Age Class 1 (1-5 years)	Age Class 2 (6-10 years)	Age Class 3 (11 years +)	County Total
Benton	4,226	860	629	5,715
Clackamas	2,806	729	3,639	7,174
Douglas	135	25	155	315
Lane	1,855	552	3,178	5,585
Linn	6,426	1,489	1,585	9,500
Marion	11,573	3,132	5,791	20,496
Multnomah	134	-	-	134
Polk	3,898	537	2,663	7,098
Washington	1,924	641	3,954	6,519
Yamhill	6,739	3,319	6,009	16,067
Industry Total	39,716	11,284	27,603	78,603

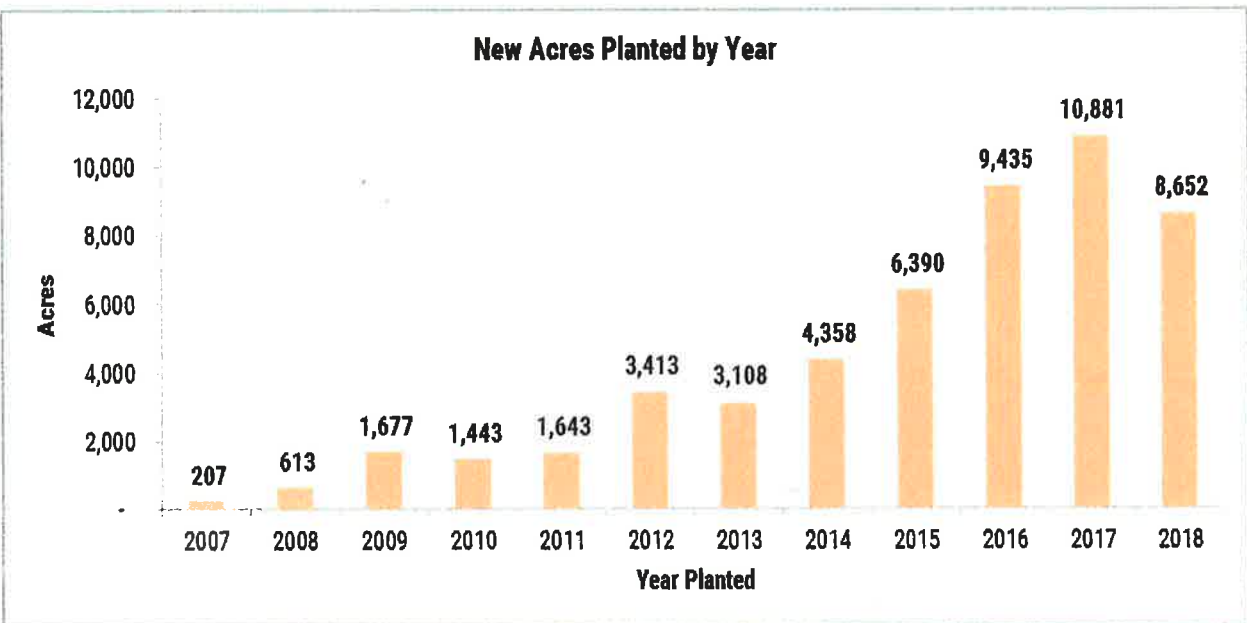


Table 1. Quick Reference Guide to Herbicides Labeled for Use in Fruit and Nut Crops

- Shaded boxes indicate the herbicide is labeled for use in that crop.
- Nonbearing (NB) indicates the herbicide is labeled only for crops that will not be harvested for 1 year (365-day preharvest interval).
- Herbicides in **bold, italic** type are recommended for new plantings.
- For more complete information, please refer to the *PNW Weed Management Handbook*: <http://pnwhandbooks.org/weed/>.

Ingredient common name (herbicide mode of action)	Product name example	Nuts			Pome fruits		Stone fruits					Rates	
		Chestnut	Hazelnut	Walnut	Apple	Pear	Apricot	Cherry	Nectarine	Peach	Plum		Prune
Applications that are soil active (herbicides in italics and bold are recommended for new plantings)													
diuron (7)	Karmex												1.6 to 3.2 lb ai/A (2 to 4 lb/A Karmex 80DF)
dichlobenil (20)	Casoron												4 to 6 lb ai/A (100 to 150 lb/A Casoron); apply in cold and wet weather.
<i>isoxaben</i> (21)	Trellis SC				NB	NB	NB	NB	NB	NB	NB	NB	0.5 to 1 lb ai/A (0.66 to 1.33 lb/A product)
indaziflam (29)	Alion												0.046 to 0.085 lb ai/A (3.5 to 6.5 oz/A product) depending on soil texture.
<i>mesotrione</i> (27)	Broadworks												0.093 to 0.187 lb ai/A (3 to 6 fl. oz/A product)
<i>napropamide</i> (3)	Devrinol												4 lb ai/A (8 lb/A)
norflurazon (12)	Solicam												1.95 to 3.98 lb ai/A (2.5 to 5 lb/A Solicam)
<i>oryzalin</i> (3)	Surflan												2 to 6 lb ai/A (2 to 6 quarts/A Surflan)
<i>pendimethalin</i> (3)	Prowl												Prowl H ₂ O: 1.9 to 6 lb ai/A (2 to 6.3 quarts/A) depending on desired length of weed control and crop.
<i>pronamide</i> (3)	Kerb												1 to 4 lb ai/A (2 to 8 lb/A) depending on species present and soil texture.
simazine (5)	Princep												See product label for rates. Princep Caliber 90 is a Special Local Needs label (OR-080038) for sweet cherries only.
sulfentrazone (14)	Zeus XC/ Petra 4SC												0.125 to 0.375 lb ai/A (4 to 12 oz/A) depending on soil classification; established 3 years.
terbacil (5)	Sinbar WDG				NB		NB	NB				NB	0.4 to 0.8 lb ai/A (0.5 to 1 lb/A), newly established; 2 to 4 lb/A Sinbar, bearing, depending on soil type.
<i>trifluralin</i> (3)	Treflan 4L/EC		NB										0.5 to 1 lb ai/A (1 to 2 pints/A Treflan 4L)
trifluralin (3)+ <i>isoxaben</i> (21)+ oxyfluorfen (14)	Showcase	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	2.5 to 5 lb ai/A (100 to 200 lb/A Showcase)
Applications that are soil and foliar active													
flazasulfuron (2)	Mission												0.033 to 0.045 lb ai/A (2.14 to 2.85 oz/A)
flumioxazin (14)	Chateau SW/ WDG												0.188 to 0.38 lb ai/A (6 to 12 oz/A Chateau WDG). Slight differences in rates and uses in SW and WDG labels.
oxyfluorfen (14)	Goal 2XL												1.25 to 2 lb ai/A (5 to 8 pints/A Goal 2XL)
oxyfluorfen (14)+ penoxsulam (2)	Pindar GT				*	*	*	*	*	*	*	*	1.47 lb ai/A oxyfluorfen + 0.015 lbs ai/A penoxsulam (1.5 to 3 pints/A) *Until March 2019

Table 1 continues on next page

Use only one material except where a combination is indicated. Follow label precautions when tank-mixing oils, fungicides, and insecticides. Materials are not listed in order of preference.

**Table 3. Effectiveness of Fungicides
for Eastern Filbert Blight Management* (cont'd)**

Echo	chlorothalonil	M5	Excellent	No
Gem	trifloxystrobin	11	Good-Excellent	Yes
Inspire Super	difenoconazole + cyprodinil	3 + 9	Good	OK
Kocide	copper hydroxide	M1	Good	Yes
Merivon	fluxapyroxad + pyraclostrobin	7 + 11	Good	OK
Nu-Cop	copper hydroxide	M1	Good	Yes
Ph-D	polyoxin D	19	Fair	Yes
Procure	triflumizole	3	Fair-Good	Yes
Propi-Max	propiconazole	3	Good-Excellent	Yes
Quadris Top	azoxystrobin + difenoconazole	3 + 11	Good-Excellent	Yes, but consult label
Quash	metconazole	3	Good	Yes
Quilt Xcel	azoxystrobin + propiconazole	3 + 11	Excellent	Yes
Stratego	propiconazole + trifloxystrobin	3 + 11	Excellent	Yes
Tilt	propiconazole	3	Good-Excellent	Yes
TopGuard	flutriafol	3	Good	No
TopGuard EQ	flutriafol + azoxystrobin	3 + 11	Good	Yes, but avoid silicone- based products
Trionic	triflumizole	3	Fair-Good	Yes
Unicorn	tebuconazole + sulfur	3 + M2	Good	Yes
Willowood Azoxy 2SC	azoxystrobin	11	Fair-Good	Yes, but avoid silicone- based products
Ziram	ziram	M3	Excellent	Yes

*These ratings are relative rankings based on full application rates, good spray coverage, and proper spray timing. Actual levels of disease control will be influenced by these factors in addition to cultivar susceptibility, disease pressure, and weather conditions. Possible ratings for disease control include none, slight, fair, good, or excellent.

Strategies for Using Fungicides for Management of Eastern Filbert Blight

Fungicides have been useful to suppress or delay development of eastern filbert blight (EFB) in an orchard of susceptible cultivars like Ennis or Barcelona. Cultivars, such as Jefferson or McDonald, with the single dominant gene for resistance only need protection the first spring after planting, when located near heavily infected orchards. Fungicides will not remove or eliminate cankers from the tree.

Fungicides are best used to protect susceptible tissue in the spring at budbreak and for the next 8 weeks. Most fungicides will last 2 weeks before another application is needed. This means a total of four applications starting with the first at budbreak. Although hazelnuts are still susceptible after this period, additional applications have not resulted in consistent, significant disease control.

Use only one material except where a combination is indicated. Follow label precautions when tank-mixing oils, fungicides, and insecticides. Materials are not listed in order of preference.