

2020 WTFRC CHERRY PESTICIDE RESIDUE STUDY

Since 2011, the WA Tree Fruit Research Commission has conducted annual studies of residues of commonly used pesticides on cherry fruit at harvest. Digital versions of this report and similar studies on apple and cherry including comprehensive summaries of multiple years' results are available at www.treefruitresearch.org. For current information on maximum residues levels (MRLs) and other regulatory issues, please consult the Northwest Horticultural Council website at <http://nwhort.org/export-manual>.

TRIAL DETAILS

- Mature 'Bing'/Mazzard multiple leader open vase trees on 10' x 20' spacing near Orondo, WA
- 11 insecticides/acaricides & 6 fungicides applied at or near maximum rates and minimum pre-harvest and re-treatment intervals
- Ground applications made by Rears PakBlast PTO-driven airblast sprayer of the same rate of product per acre with 8 oz Regulaid surfactant/100 gal water at 200 gal water/acre
- Approx. 0.4" of rain fell on trial block over the course of the study, including ¼ inch falling 12 days before harvest (May 30)
- Grower applied RainGard 4 times during the study (5/29, 6/5, 6/10, 6/19) to reduce cracking, which may have helped preserve residues of pesticides applied by WTFRC staff
- Samples submitted overnight to Pacific Agricultural Labs (Sherwood, OR) for chemical analysis



Airblast application @
200 gal/acre

RESULTS & DISCUSSION

This study generally simulates a *worst case scenario* for residues of legally applied pesticides by using aggressive rates, timings, and spray intervals. Most materials were applied twice as allowed by product labels, whether or not typical commercial use patterns would do the same. With that approach, all residues complied with domestic tolerances but most **exceeded some foreign tolerances**, whether from published MRLs or national default values:



Cherries dripping
after application

Insecticides/acaricides: Bexar, Agri-Mek 0.15SEC, Transform WG, Danitol 2.4EC, Perm-Up 3.2EC, Carbaryl 4L, Onager

Fungicides: TopGuard, Torino, Gatten, Orbit, Topsin 4.5FL

Residue levels were generally higher in the 2020 study than in "typical" seasons, most likely due to multiple applications by the grower of the anti-cracking agent RainGard, which may have provided a protective coating against rain and UV light which would typically degrade residues. Previous WTFRC studies (2013-2015) have also demonstrated a tendency for rain protectants (RainGard, Parka) to preserve residues on cherry. MRLs are known to change frequently and cherry producers should routinely monitor the most current information (<http://nwhort.org/export-manual>) to facilitate compliance with constantly shifting foreign standards.

Measured residue levels vs. MRLs for pesticides applied to cherry fruit at 200 gal water/acre. 'Bing'/Mazzard, Orondo, WA. WTFRC 2020.

Common name	Trade name	Application rate ¹	Application timing(s)	Measured residue	US tolerance ²	Lowest export tolerance ³
		<i>per acre</i>	<i>days before harvest</i>	<i>ppm</i>	<i>ppm</i>	<i>ppm</i>
tolfenpyrad	Bexar	27 oz	28, 14	0.77	2	0.01 (many)
abamectin	Agri-Mek 0.15SEC	20 oz	21	0.030	0.09	0.01 (EU)
zeta-cypermethrin	Mustang MAX	4 oz	21, 14	0.21	1	1 (Kor)
thiamethoxam	Actara	5.5 oz	21, 14	0.40	0.5	0.5 (many)
chlorantraniliprole	Altacor	4.5 oz	21, 10	0.18	2.5	0.5 (Kor)
acetamiprid	Assail 70WP	3.4 oz	21, 7	0.56	1.5	1 (Tai)
flutriafol	TopGuard	14 oz	14, 7	0.49	1.5	0.8 (Codex, Kor)
myclobutanil	Rally 40WSP	6 oz	10, 1	0.79	5	1 (Can, Tai)
sulfoxaflor	Transform WG	2.75 oz	14, 7	0.52	3	1.5 (many)
cyflufenamid	Torino	8 oz	14, 7	0.27	0.6	0.02 (Aus)
fenpropathrin	Danitol 2.4EC	21.3 oz	14, 3	1.7	5	0.01 (EU)
permethrin	Perm-Up 3.2EC	8 oz	14, 3	0.96	4	0.05 (EU)
carbaryl	Carbaryl 4L	96 oz	10, 3	7.4	10	0.01 (EU)
flutianil	Gatten	8 oz	10, 3	0.074	0.4	0.01 (many)
propiconazole	Orbit	4 oz	10, 1	0.48	4	0.01 (EU)
thiophanate-methyl*	Topsin 4.5FL	30 oz	10, 1	1.96	20	0.3 (EU)
hexythiazox	Onager	24 oz	7	0.29	1	0.1 (Kor)

¹ All materials were applied by Rears PakBlast sprayer with 8 oz Regulaid/100 gal water

² 5 Aug 2020. <http://nwhort.org/export-manual/comparisonmrls/cherry-mrls/>

³ Major export markets for Pacific Northwest cherries; 5 Aug 2020; tolerances may be based on published MRLs or default values. <http://nwhort.org/export-manual/comparisonmrls/cherry-mrls/>

* Reported thiophanate-methyl values reflect sum total of thiophanate-methyl and carbenzadim residue levels

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Results of this lone unreplicated trial are shared for informational purposes only and should not be construed as endorsements of any product, reflections of their efficacy against any arthropod or fungal pest, or a guarantee of similar results regarding residues for any user. Cherry growers should consult with extension team members, crop advisors, and warehouses to develop responsible pest control programs.