

2023 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 <https://nwhort.org/export-manual/>.

TRIAL DETAILS



Harvesting treated cherries

- Mature 'Skeena'/Mazzard multiple leader open vase trees on 10' x 16' spacing near Orondo, WA
- 9 insecticides/acaricides & 6 fungicides applied at or near maximum rates and minimum pre-harvest and re-treatment intervals
- Applications made by Rears PakBlast PTO-driven airblast sprayer with 8 oz non-ionic surfactant (Regulaid)/100 gal water at 200 gal water/acre
- A total of roughly ½" of rain fell on the trial block on 4 separate days during the study, primarily on June 9 (0.38 in) and June 27 (0.11 in)
- Parka was applied by the commercial grower twice during the study (6/7, 6/22) to reduce rain 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

RESULTS & DISCUSSION

Through the years, the primary objective of these studies has been to simulate a *worst case scenario* for residues of legally applied pesticides by using aggressive rates, timings, and spray intervals. As in the past, 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 2023 residues complied with domestic tolerances but some exceeded foreign MRLs for important export markets:**

Insecticides/acaricides: Bexar, Asana XL, Carbaryl 4L, Onager

Fungicides: Torino, Miravis, Cevya

Even though 2023 residue levels were largely consistent with findings from previous years, astute followers of these reports may note relatively fewer chemistries produced results which exceed key MRLs; this is primarily because several foreign markets recently have either relaxed their tolerances or posted official MRLs for these products. These positive developments are due in part to the efforts of the Northwest Horticultural Council to encourage regulators around the world to adopt and publish reasonable pesticide residue standards for imported Northwest cherries. MRLs are known to change frequently and cherry producers should routinely monitor the most current information (<https://nwhort.org/export-manual>) to facilitate compliance with constantly evolving foreign standards.



Dried residues on fruit at harvest

Measured residue levels vs. MRLs for pesticides applied to cherry fruit at 200 gal water/acre. 'Skeena'/Mazzard, Orondo, WA. WTFRC 2023.

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	0.79	2	0.01 (many)
abamectin	Agri-Mek SC	4.25 oz	21	0.014	0.09	0.06 (KOR)
thiamethoxam	Actara	5.5 oz	21, 14	0.21	0.5	0.5 (many)
esfenvalerate	Asana XL	14.5 oz	21, 14	0.20	3	0.01 (THAI)
chlorantraniliprole	Altacor	4.5 oz	21, 10	0.14	2.5	0.5 (KOR)
cyclaniliprole	Verdepryn 100SL	11 oz	14, 7	0.19	1	0.7 (many)
cyflufenamid	Torino	8 oz	14, 7	0.22	0.6	0.01 (THAI)
carbaryl	Carbaryl 4L	96 oz	10, 3	2.0	10	0.01 (THAI)
flutianil	Gatten	8 oz	10, 3	0.052	0.4	0.4 (many)
zeta-cypermethrin	Mustang Maxx	4 oz	10, 3	0.12	2	1 (KOR)
propiconazole	Orbit	4 oz	10, 1	0.24	4	2 (many)
thiophanate-methyl*	Topsin 4.5FL	30 oz	10, 1	1.06	20	3 (JPN)
pydiflumetofen	Miravis	5.1 oz	10, 1	0.18	2	0.01 (JPN)
mefentrifluconazole	Cevya	5 oz	10, 1	0.53	4	0.01 (THAI)
hexythiazox	Onager	24 oz	7	0.47	1	0.2 (KOR)

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

² 25 July 2023. http://mrldb.nwhort.org/#top_markets

³ Major export markets for Pacific Northwest cherries; 25 July 2023. http://mrldb.nwhort.org/#top_markets

* 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.