2024 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/.

Spraying new trial block

TRIAL DETAILS

- New trial block established in mature 'Skeena'/K.6 central leader trees on 10' x 16' spacing near East Wenatchee, WA
- 11 insecticides/acaricides & 3 fungicides applied at or near maximum rates and minimum pre-harvest and re-treatment intervals; products were applied twice if allowed by labels
- 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 0.06" of rain fell on the trial block on June 2 & 3; this precipitation was unlikely to affect residues on the fruit
- Fruit samples shipped 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 2024 residues complied with domestic tolerances but some exceeded foreign MRLs for important export markets**:

Insectides/acaricides: Bexar, Esteem, Asana XL, Carbaryl 4L

Fungicides: Torino, Miravis

It should be noted that some key export markets in Asia have adopted MRLs for several popular pesticides set at the Limit of Quantitation (LOQ), or the lowest amount of residue that can be reliably measured; these low tolerances make it virtually impossible to meet these standards if the product applied leaves any residue at all. On a positive note, compliance with MRLs on some products continues to get easier as those tolerances relax or are posted for the first time rather than relying on default values. 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 cherries at harvest

Measured residue levels vs. MRLs for pesticides applied to cherry fruit at 200 gal water/acre. 'Skeena'/K.6, East Wenatchee, WA. WTFRC 2024.

Common name	Trade name	Application rate[1]	Application timing(s)	Measured residue	US tolerance[2]	Lowest export tolerance[3]
		per acre	*days before harvest*	*ppm*	*ppm*	*ppm*
tolfenpyrad	Bexar	27 oz	28, 14	**0.19**	2	0.01 (many)
pyriproxyfen	Esteem	16 oz	28, 14	**0.31**	1	0.01 (THA)
thiamethoxam*	Actara	5.5 oz	21, 14	0.106	0.5	0.5 (many)
esfenvalerate	Asana XL	14.5 oz	21, 14	**0.044**	3	0.01 (THA)
chlorantraniliprole	Altacor	4.5 oz	21, 10	0.15	2.5	0.5 (KOR)
cyclaniliprole	Verdepryn 100SL	11 oz	14, 7	0.059	1	0.6 (TWN)
cyflufenamid	Torino	8 oz	14, 7	**0.073**	0.6	0.01 (THA)
flonicamid	Beleaf 50SG	2.8 oz	14, 7	0.24	0.6	0.6 (many)
emamectin benzoate	Proclaim	4.8 oz	14, 7	<0.01	0.09	0.005 (AUS,THA)
carbaryl	Carbaryl 4L	96 oz	10, 3	**2.6**	10	0.01 (THA)
pydiflumetofen	Miravis	5.1 oz	10, 1	**0.12**	2	0.01 (JPN)
mefentrifluconazole	Cevya	5 oz	10, 1	0.25	4	4 (many)
hexythiazox	Onager	24 oz	7	0.18	1	0.2 (KOR)
pyrethrins	Pyganic 5.0EC	15.6 oz	3, 1	<0.05	1	0.01 (THA)

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

[2] 14 August 2024. http://mrldb.nwhort.org/#top_markets

[3] Major export markets for Pacific Northwest cherries; 14 August 2024. http://mrldb.nwhort.org/#top_markets

* Reported thiomethoxam values reflect sum total of thiomethoxam and clothiandin 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.