



# Residue Decline Curve



# Executive Summary

The U.S. Highbush Blueberry Council (USHBC) has collaborated with Oregon State University, Michigan State University, AG Metrics Group, and Synergistic Pesticide Laboratory, LLC to establish residue decline curves for pesticides that have no established Maximum Residue Limits (MRL) and MRLs are lower than U.S. tolerances.

Specifically, research entities have applied 18 insecticides and 15 fungicides on highbush blueberries for three years in five growing sites (to account for variation in climate, varieties, and pest and disease vulnerability). Research entities sent samples to Synergistic Pesticide Laboratory, LLC for chemical residue extraction and analysis. Three years of data have been collected and analyzed by Synergistic Pesticide Laboratory, LLC, Portland, OR.



# Accomplishments

This residue decline curve study was conducted by the research staff from Agriculture Development Group, Inc. from 2020–2022 at two separate locations: a research farm at Eltopia, WA 15 miles north of Pasco, WA, and a commercial farm at near Everson, WA. The objective is to investigate the residual level of multiple pesticides (Table 1) at different consequential timings after application on blueberry, thus understanding their degradation ratio/speed for better application/harvesting strategies and developing low residue programs that meet the low MRL standards.

The experimental design for this trial was an RCB with 4 replications and plot sizes of 10ft x 50ft. Plots were on exactly the same spot as the 2020 study for the Eltopia trial. Applications for this trial were made with over-the-row sprayers that cover both sides of the blueberry bushes (Photo 1 and 2) and calibrated to apply treatment sprays at 50 gallons per acre on “Duke” at the Eltopia location and 85 gallons per acre on “Bluecrop” at the Everson location. The difference in gallonage was due to the larger sized plants at Everson.

Michigan trials were conducted by Michigan State University researchers at the Trevor Nichols Research Center in Fenville, MI. An airblast sprayer was used at 50 gallons per acre on “Bluecrop” variety.

Oregon trials conducted by Oregon State University researchers took place in Canby, OR on “Calypso”. The application method was over-the-row sprayer at 40 PSI and 50 gallons per acre.

There were two California locations: 2021 on the coast at Carpenter Canyon, CA using “Jewel” and 2021-2022 in the valley at Five Points, CA using “Cielo”. Both locations used over-the-row sprayers at 60 PSI and 50 GPA.

For all locations, blueberries were sampled at 0 (after residue dried), 1, 3, 5, 7, 14, and 21 days after application. At one location for one year, the day 5 sampling was missed, and a sampling was added at 28 days. Personnel who sampled the fruits constantly changed new gloves between each plot, and samples were evenly harvested from both sides of plants, high & low, inside & outer canopy.

As requested by the cooperating Synergistic Pesticide Laboratory, LLC in Portland, OR, 0.5 to 1.0 lbs. of blueberries were sampled from each plot and frozen immediately for at least 24 hours, and then shipped in a coolant box with frozen gel coolant for overnight delivery to this lab for residue analysis. Frozen samples from Oregon were transferred directly to the lab.

All samples were received at the lab in acceptable condition. Samples were homogenized and stored frozen pending extraction using the QuEChERS EN 15662 method with dispersive Solid Phase Extraction (dsPE) cleanup. Analysis was conducted via LC/MS/MS and GC/MS/MS. Individual sample results were calculated then replicates averaged to form the points along the decline curves for each analyte, for each year at each location with a 95% confidence interval.

Treatment No.	Type	Treatment Type	AI	Form Type	Rate	Rate Unit	Amt Product To Measure
1	INSE	Agri-Mek	Abamectin	L	3.5	fl oz/a	5.703 mL/mx
	FUNG	Quadris Top	Azoxystrobin, Difenconazole	L	14	fl oz/a	22.81 mL/mx
	FUNG	Captan 4L	Captan	L	48	fl/oz	
	INSE	Magister	Fenazaquin	L	36	fl oz/a	58.66 mL/mx
	INSE	Knack	Pyriproxyfen	L	16	fl oz/a	26.07 mL/mx
	INSE	Confirm	Tebufenozide	L	16	fl oz/a	26.07 mL/mx
	INSE	Movento	Spirotetramat	L	10	fl oz/a	16.29 mL/mx
2	INSE	Kanemite	Acequinocyl	L	31	fl oz/a	50.51 mL/mx
	INSE	Talus 70DF	Buprofezine	D	14	oz/a	21.87 g/mx
	INSE	Fujimite	Fenpyroximate	L	2	pt/a	52.14 mL/mx
	FUNG	Luna Tranquility	Fluopyram, Pyrimethanil	L	27	fl oz/a	43.99 mL/mx
	INSE	Sivanto 200SL	Flupyradifurone	L	14	fl oz/a	22.81 mL/mx
	FUNG	Proline	Prothioconazole	L	5.7	fl oz/a	9.287 mL/mx
	FUNG	Miravis	Pydiflumetofen	L	3.4	fl oz/a	5.54 mL/mx
3	INSE	Assail 70WP	Acetamiprid	D	2.3	oz/a	3.592 g/mx
	INSE	Altacor	Chlorantraniliprole	D	4.5	oz/a	7.029 g/mx
	INSE	Beleaf	Flonicamid	D	2.8	oz/a	4.373 g/mx
	FUNG	Captan 80 WG	Captan	D	2	lb	
	FUNG	Merivon	Pyraclostrobin, Fluxapyroxad	L	10.3	fl/oz/a	
	FUNG	Kenja 400SC	Isofetamid	L	15.5	fl oz/a	25.26 mL/mx
	FUNG	Quash	Metconazole	D	2.5	oz/a	3.905 g/mx
	INSE	Bexar	Tolfenpyrad	L	27	fl oz/a	43.99 mL/mx
4	INSE	Acramite	Bifenazate	D	1	lb/a	24.99 g/mx
	INSE	Verdipryn 100SL	Cyclaniliprole	L	11	fl oz/a	17.92 mL/mx
	INSE	Diazinon AG500	Diazinon	L	2	qt/a	104.3 mL/mx
	FUNG	Prolio	Pyriofenone	L	5	fl oz/a	
	INSE	Rimon 0.83EC	Novaluron	L	30	fl oz/a	48.88 mL/mx
	FUNG	Cevya	Mefentrifluconazole	L	5	fl oz/a	
	FUNG	Fontelis	Penthiopyrad	L	24	fl oz/a	39.1 mL/mx
	INSE	Transform	Sulfoxaflo	D	2.75	oz/a	4.295 g/mx

Table 1. Treatment list for all locations





Photo 1.  
Over-the-row sprayer used for the treatments applied at the Eltopia location.



Photo 2.  
Over-the-row sprayer used for the treatments applied at Everson location..

# DECLINE CURVES

## MRLs

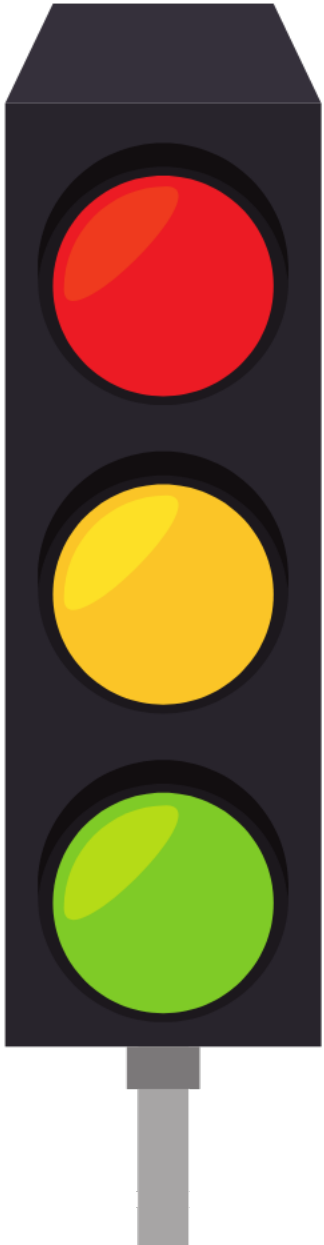
## STOPLIGHT GUIDANCE CHARTS

### Notes:

MRLs listed are from the Food Chain ID website [www.bcglobal.bryantchristie.com](http://www.bcglobal.bryantchristie.com) and are current as of 1/5/23. All values are in parts per million (ppm). Key export markets were selected for the charts; however, this information can be used for any country not just those listed.

Six pesticides included have registrations pending as indicated on the decline curve graphs. When these products become registered, stoplight charts will be generated. The graphs need to be updated regularly as MRL change. Also, for newly registered active ingredients, MRLs are added frequently.

Each stoplight guidance chart is color coded for the days after treatment for each export market for a particular product. Where products contain multiple active ingredients, the color code is based on the most restrictive MRL for a given country



# STOPLIGHT LEGEND

## RED

It means that the product should not be used during this time either because of EPA label restrictions or due to a high risk of exceeding

## YELLOW

It means that the product should be used with caution during this time given all the variables (e.g., tank mixes, application method and calibration, use of adjuvants, environmental conditions, and post-harvest handling) that can impact the time it takes for a residue to degrade in order to meet the MRL for a given market.

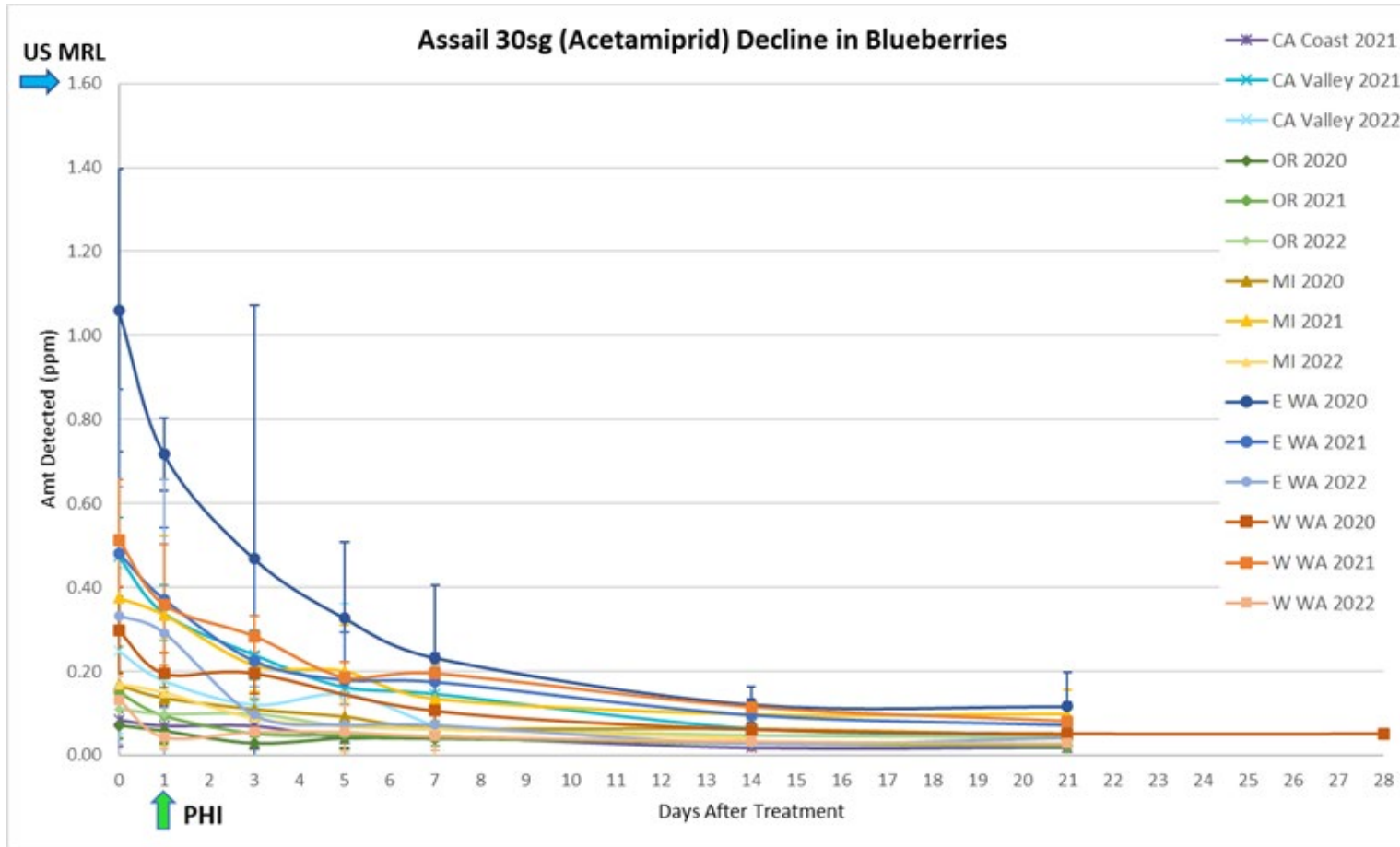
## GREEN

Means that the product is likely to be safe for use at this time with low risk of residue remaining at harvest that would exceed MRLs for a given market.



# INSECTICIDES

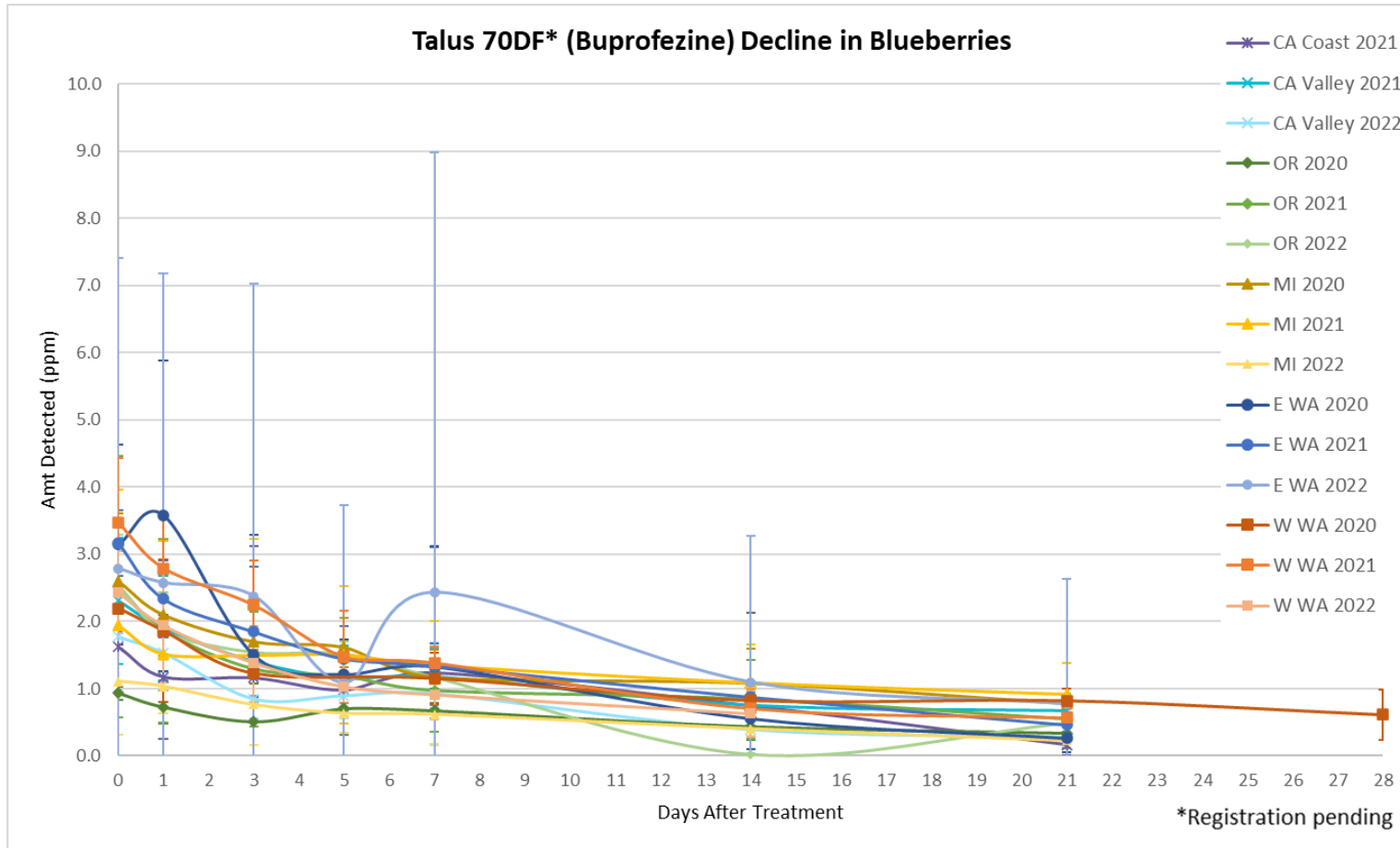
# ASSAIL: ACETAMIPRID



MRLs	
US	1.6
AU	1.6
CA	1.6
EU	2
JA	2
KO	0.5
PH	2
SG	2
TA	1
VN	2

Assail (acetamiprid)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Green	Green	Green	Green	Green	Green
Australia	Red	Green	Green	Green	Green	Green	Green
Canada	Red	Green	Green	Green	Green	Green	Green
EU	Red	Green	Green	Green	Green	Green	Green
Japan	Red	Green	Green	Green	Green	Green	Green
Korea	Red	Yellow	Green	Green	Green	Green	Green
Philippines	Red	Green	Green	Green	Green	Green	Green
Singapore	Red	Green	Green	Green	Green	Green	Green
Taiwan	Red	Green	Green	Green	Green	Green	Green
Vietnam	Red	Green	Green	Green	Green	Green	Green

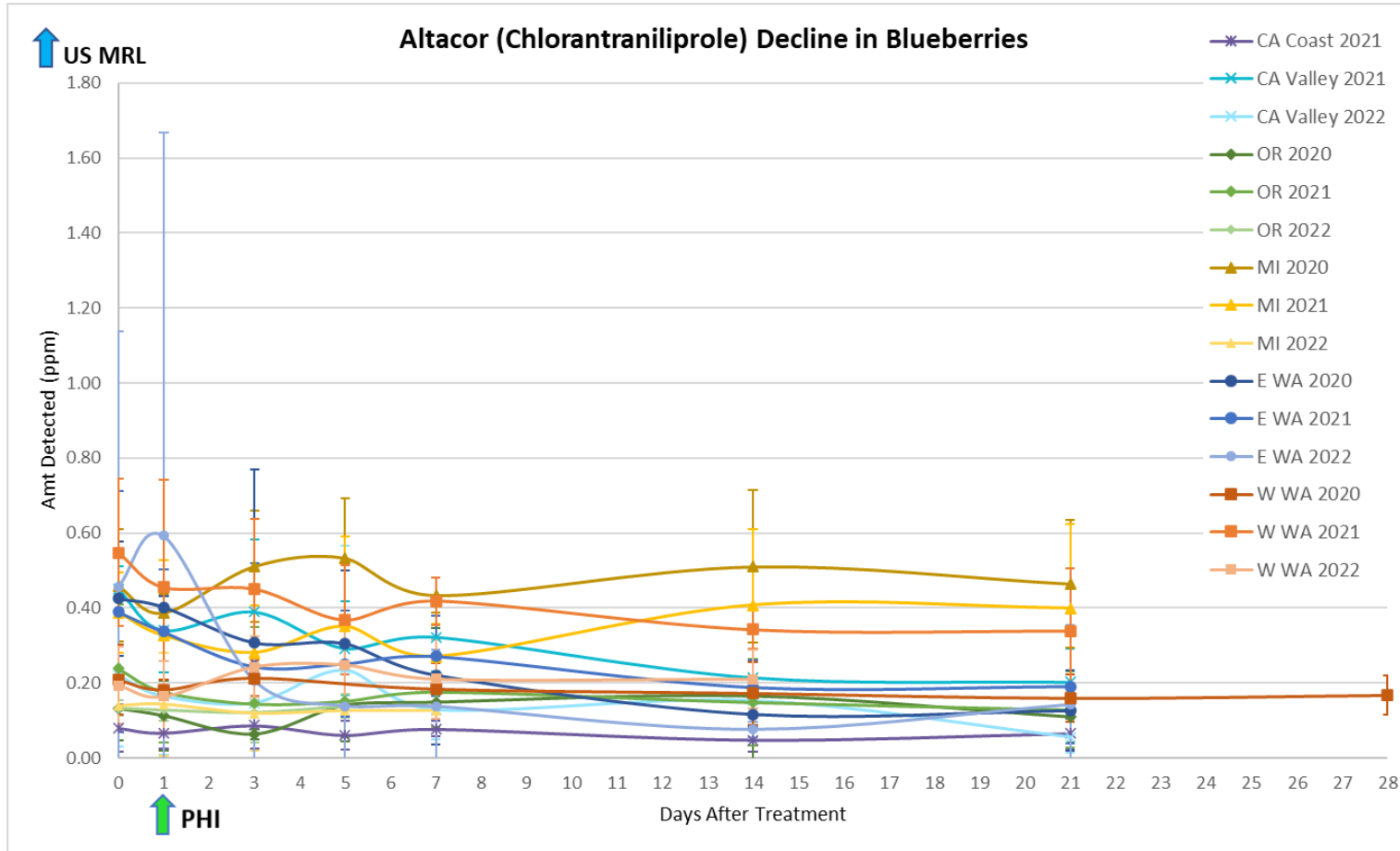
# TALUS: BUPROFEZINE



MRLs	
US	0.08
AU	0.1
CA	0.1
EU	0.01
JA	0.01
KO	0.5
PH	No MRL= 0
SG	No MRL= 0
TA	No MRL= 0
VN	No MRL= 0



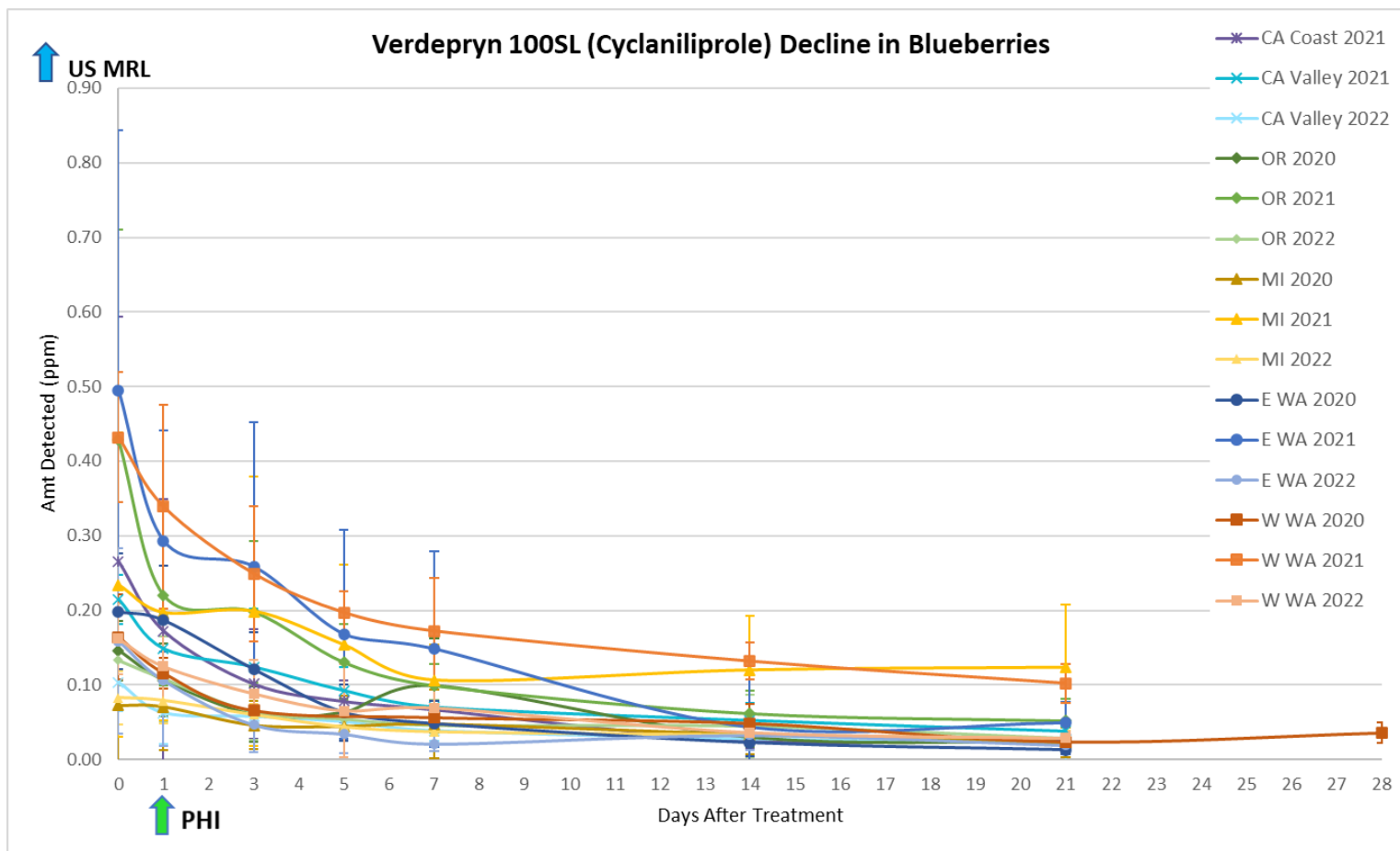
# ALTACOR: CHLORANTRANILIPROLE



MRLs	
US	2.5
AU	3
CA	0.35
EU	1.5
JA	3
KO	1
PH	1
SG	1
TA	2
VN	1

Altacor (chlorantraniliprole)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

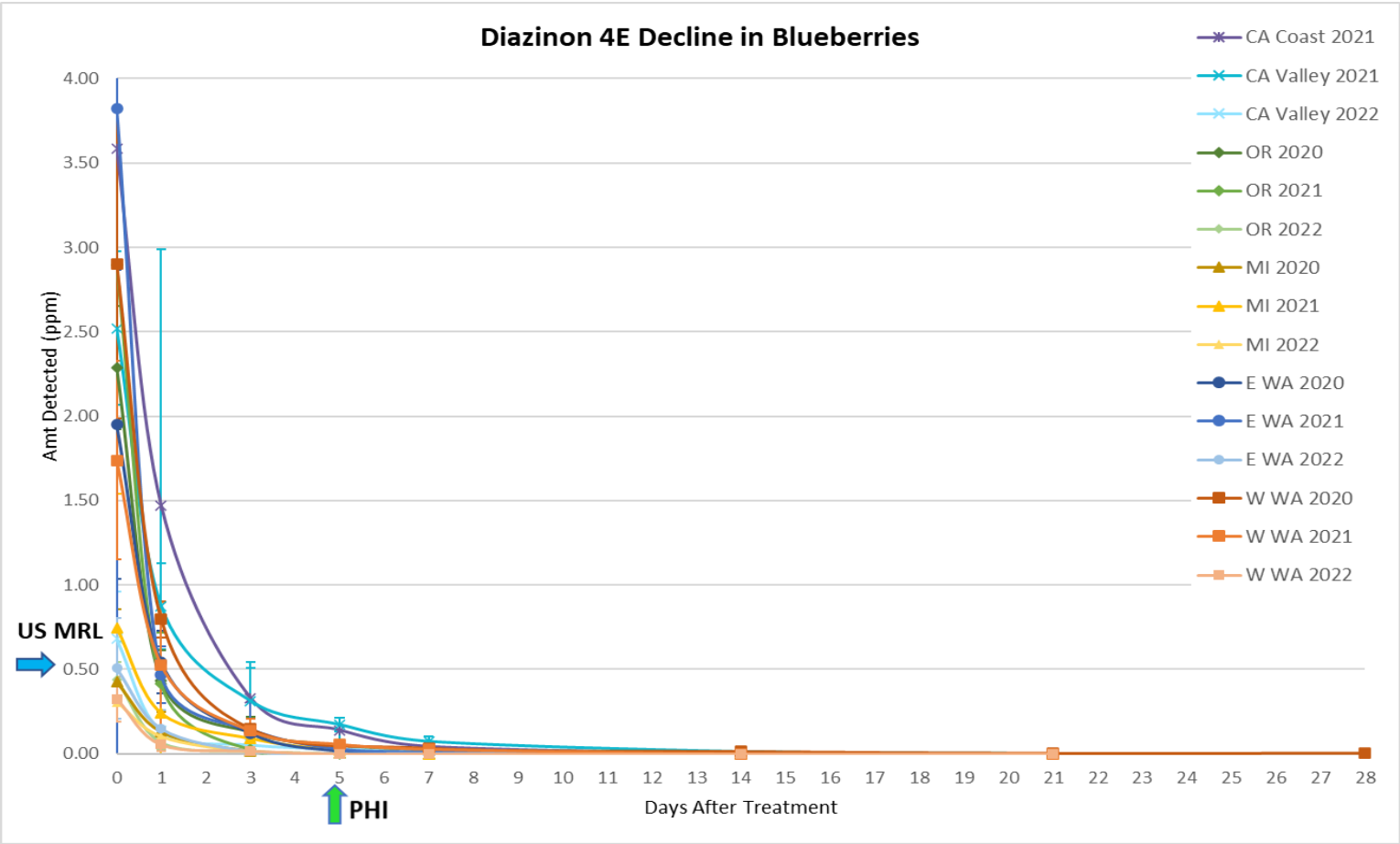
# VERDEPRYN: CYCLANILIPROLE



MRLs	
US	1.5
AU	1.5
CA	1.5
EU	0.01
JA	2
KO	1.5
PH	1.5
SG	1.5
TA	No MRL= 0
VN	No MRL= 0

Verdepryn (cydaniliprole)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

# DIAZINON

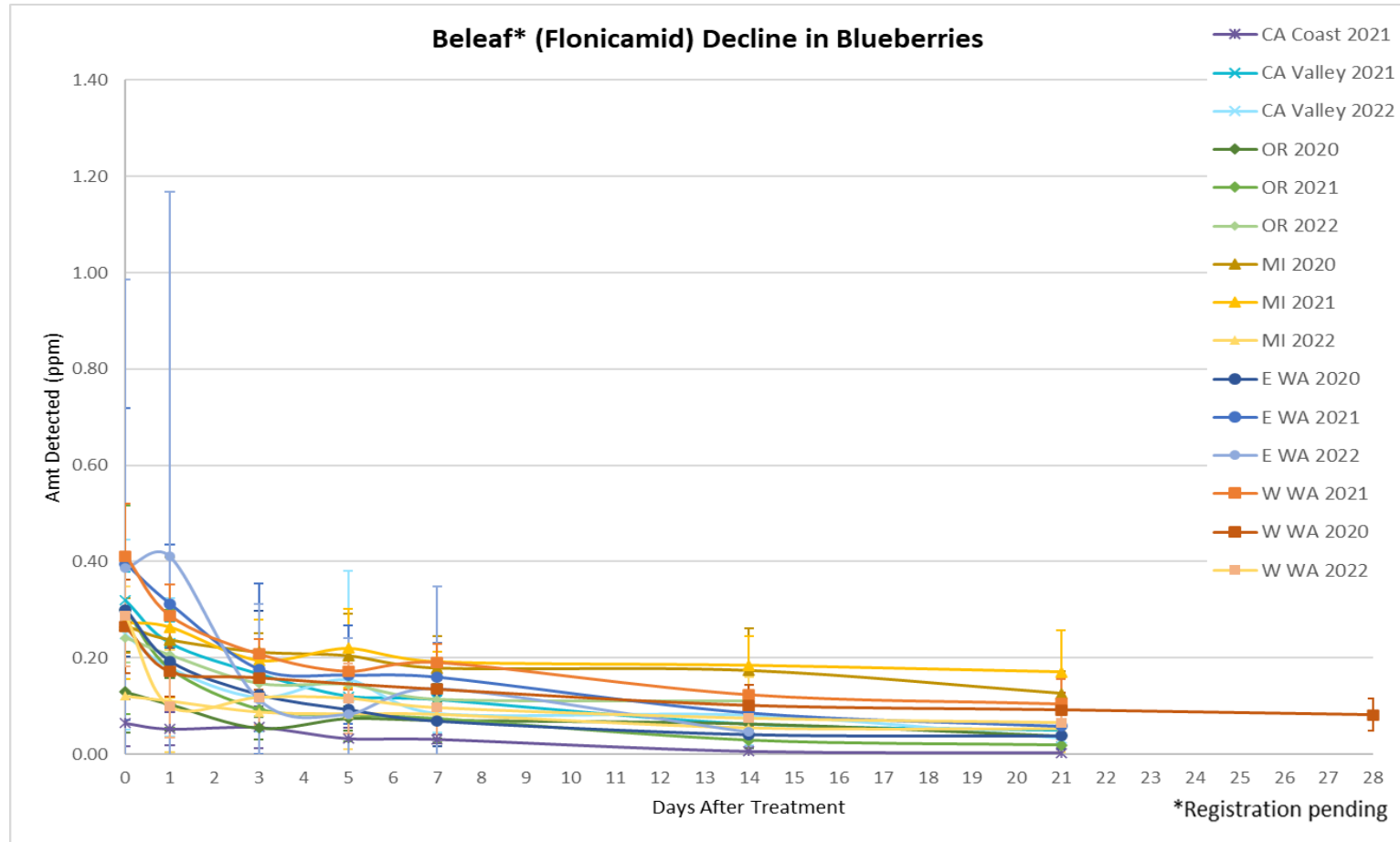


MRLs	
US	0.5
AU	0.5
CA	0.1
EU	0.01
JA	0.05
KO	0.01
PH	No MRL=
SG	0.5
TA	0.5
VN	No MRL=

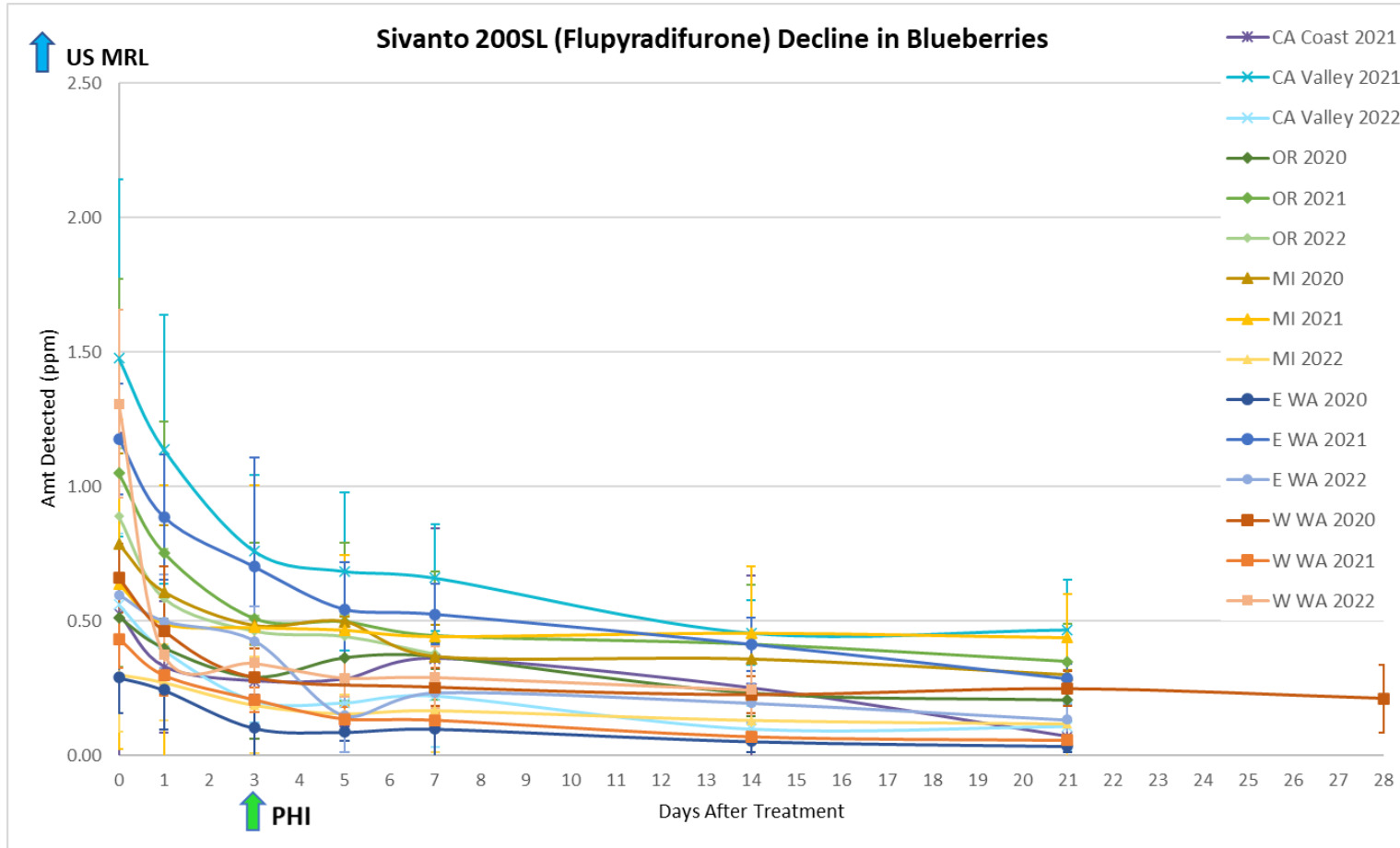
Diazinon							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Red	Red	Green	Green	Green	Green
Australia	Red	Red	Red	Green	Green	Green	Green
Canada	Red	Red	Red	Yellow	Green	Green	Green
EU	Red	Red	Red	Red	Yellow	Green	Green
Japan	Red	Red	Red	Green	Green	Green	Green
Korea	Red	Red	Red	Red	Yellow	Green	Green
Philippines	Red	Red	Red	Red	Yellow	Green	Green
Singapore	Red	Red	Red	Green	Green	Green	Green
Taiwan	Red	Red	Red	Green	Green	Green	Green
Vietnam	Red	Red	Red	Red	Yellow	Green	Green



# BELAF: FLONICAMID



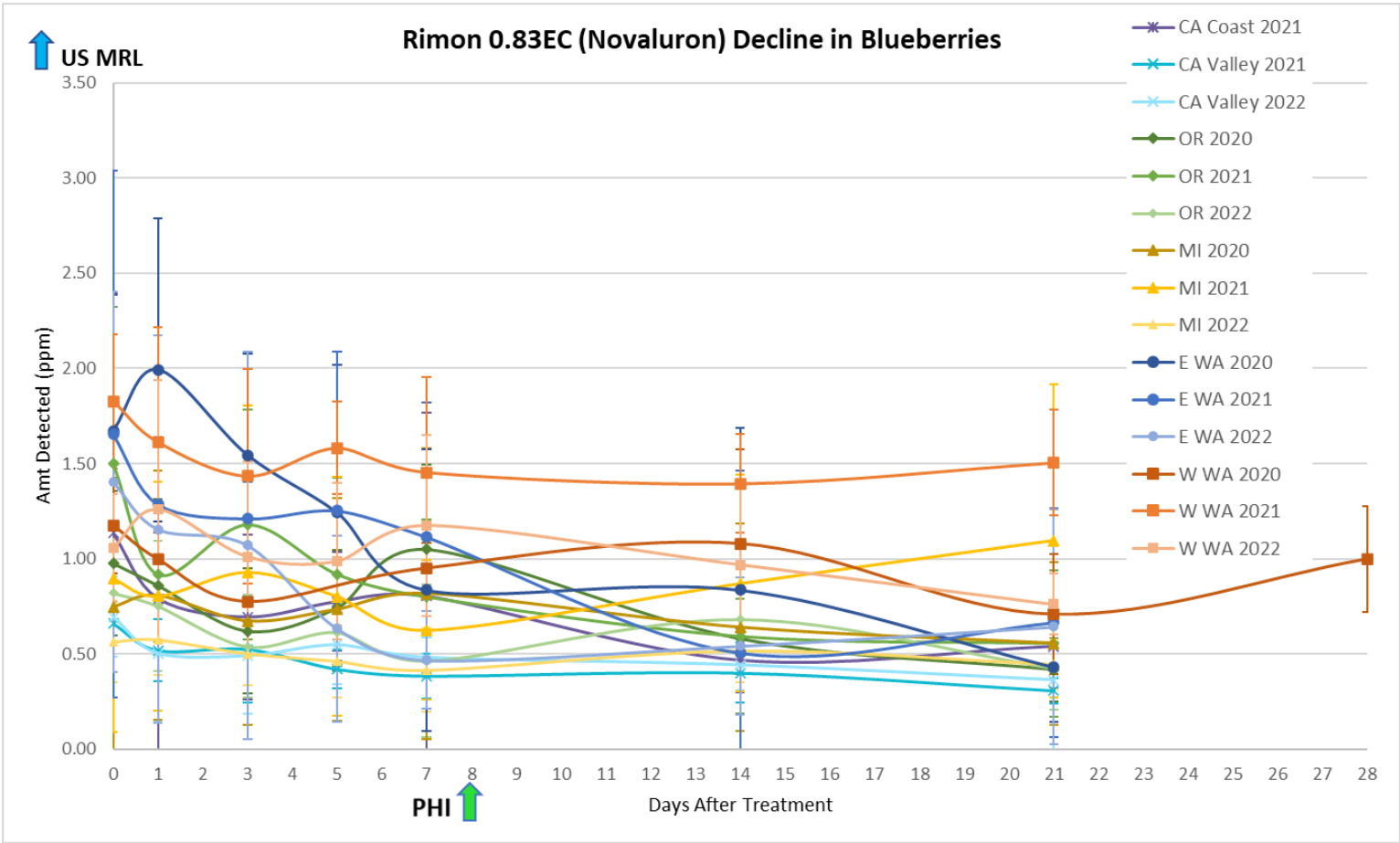
# SIVANTO: FLUPYRADIFURONE



MRLs	
US	4
AU	4
CA	4
EU	4
JA	4
KO	4
PH	4
SG	4
TA	4
VN	No MRL= 0

Sivanto (flupyradifurone)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Red	Green	Green	Green	Green	Green
Australia	Red	Red	Green	Green	Green	Green	Green
Canada	Red	Red	Green	Green	Green	Green	Green
EU	Red	Red	Green	Green	Green	Green	Green
Japan	Red	Red	Green	Green	Green	Green	Green
Korea	Red	Red	Green	Green	Green	Green	Green
Philippines	Red	Red	Green	Green	Green	Green	Green
Singapore	Red	Red	Green	Green	Green	Green	Green
Taiwan	Red	Red	Green	Green	Green	Green	Green
Vietnam	Red	Red	Red	Red	Red	Red	Red

# RIMON: NOVALURON

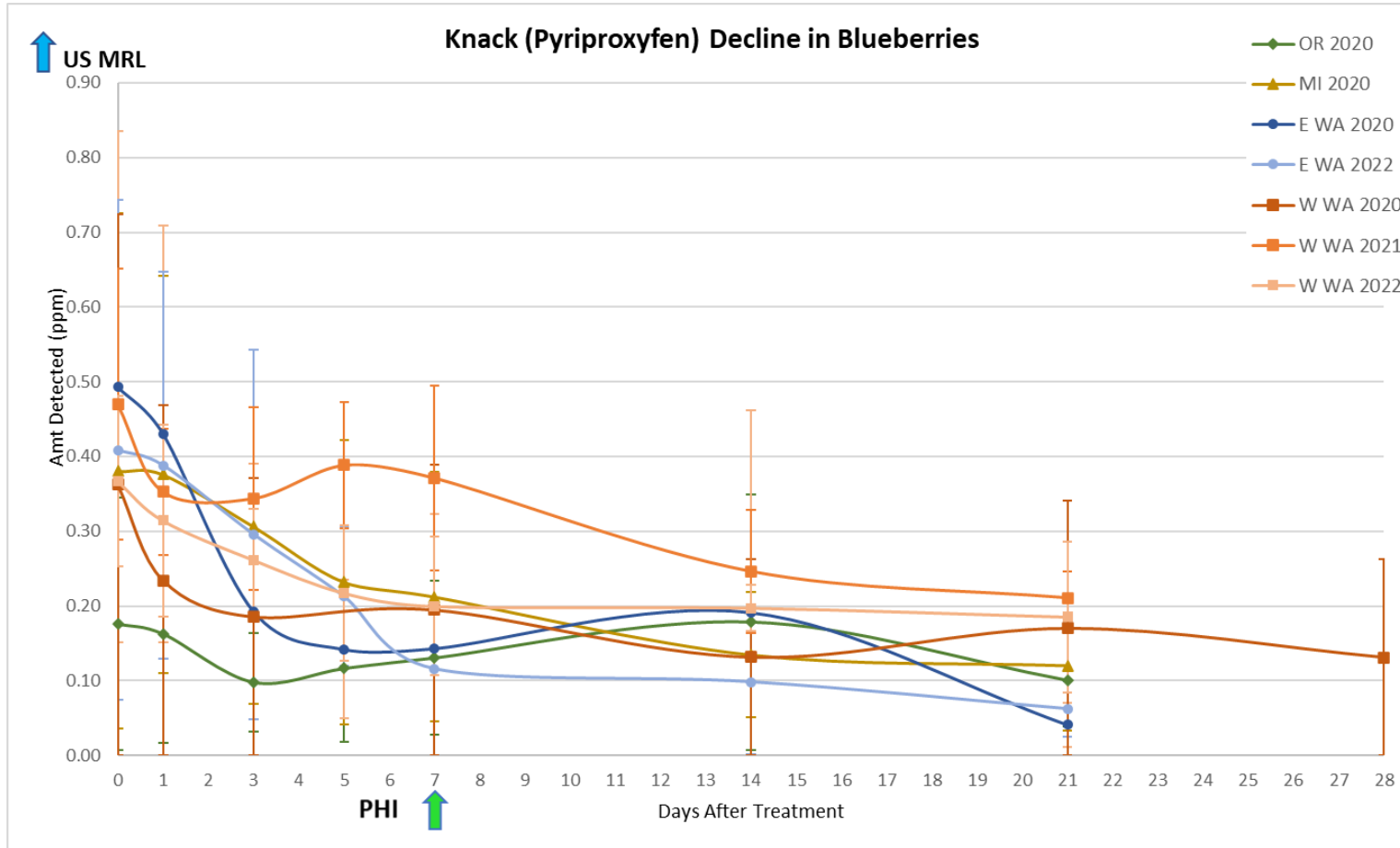


MRLs	
US	7
AU	7
CA	7
EU	7
JA	7
KO	7
PH	7
SG	7
TA	No MRL= 0
VN	7

Rimon (novaluron)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							



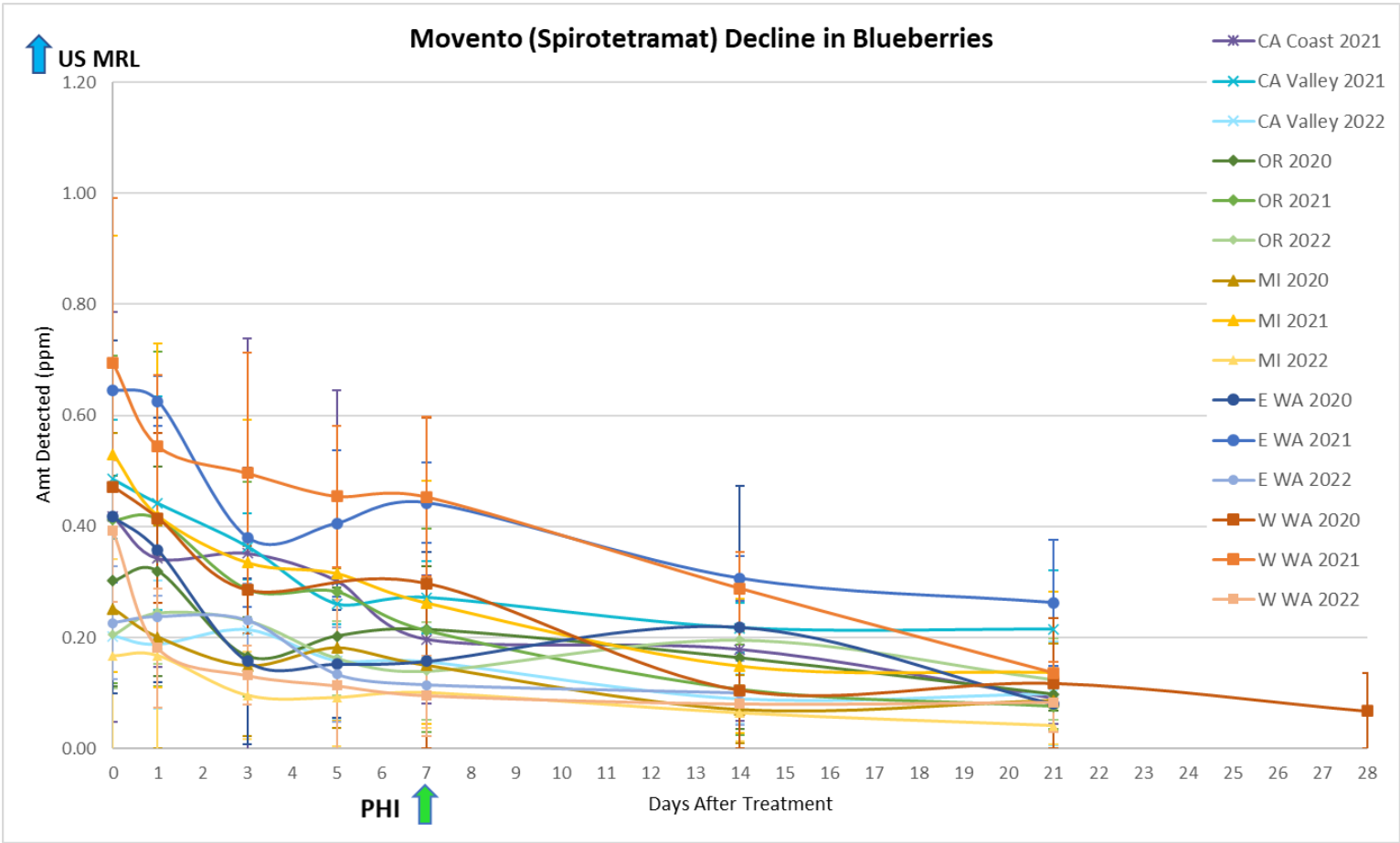
# KNACK: PYRIPROXYFEN



MRLs	
US	1
AU	1
CA	1.5
EU	0.05
JA	1
KO	1
PH	No MRL= 0
SG	No MRL= 0
TA	0.5
VN	No MRL= 0

Knack (pyriproxyfen)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Red	Red	Red	Green	Green	Green
Australia	Red	Red	Red	Red	Green	Green	Green
Canada	Red	Red	Red	Red	Green	Green	Green
EU	Red	Red	Red	Red	Red	Red	Red
Japan	Red	Red	Red	Red	Green	Green	Green
Korea	Red	Red	Red	Red	Green	Green	Green
Philippines	Red	Red	Red	Red	Red	Red	Red
Singapore	Red	Red	Red	Red	Red	Red	Red
Taiwan	Red	Red	Red	Red	Green	Green	Green
Vietnam	Red	Red	Red	Red	Red	Red	Red

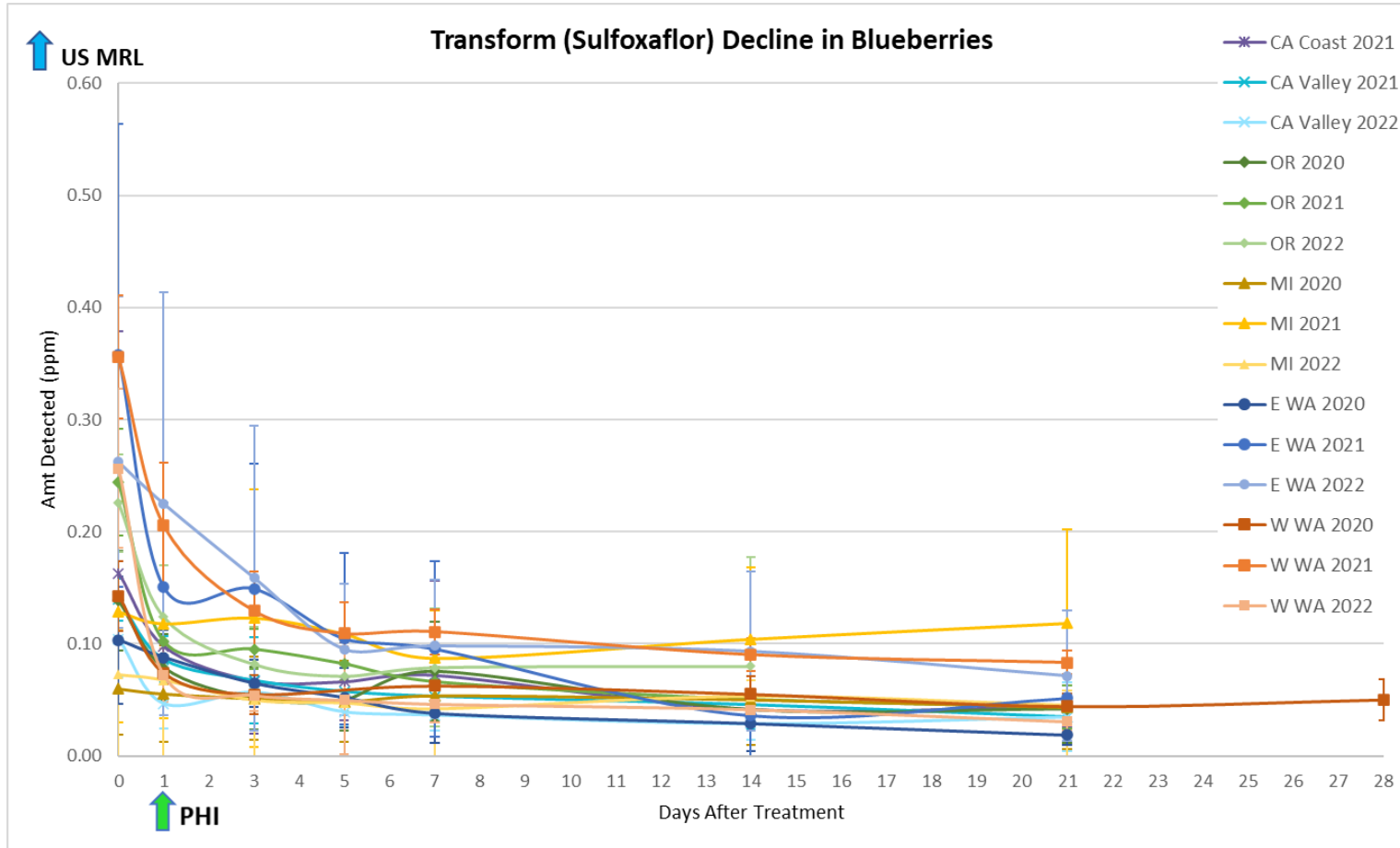
# MOVENTO: SPIROTETRAMAT



MRLs	
US	3
AU	3
CA	3
EU	1.5
JA	3
KO	3
PH	1.5
SG	1.5
TA	No MRL= 0
VN	1.5

Movento (spirotetramat)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

# TRANSFORM: SULFOXAFLOR

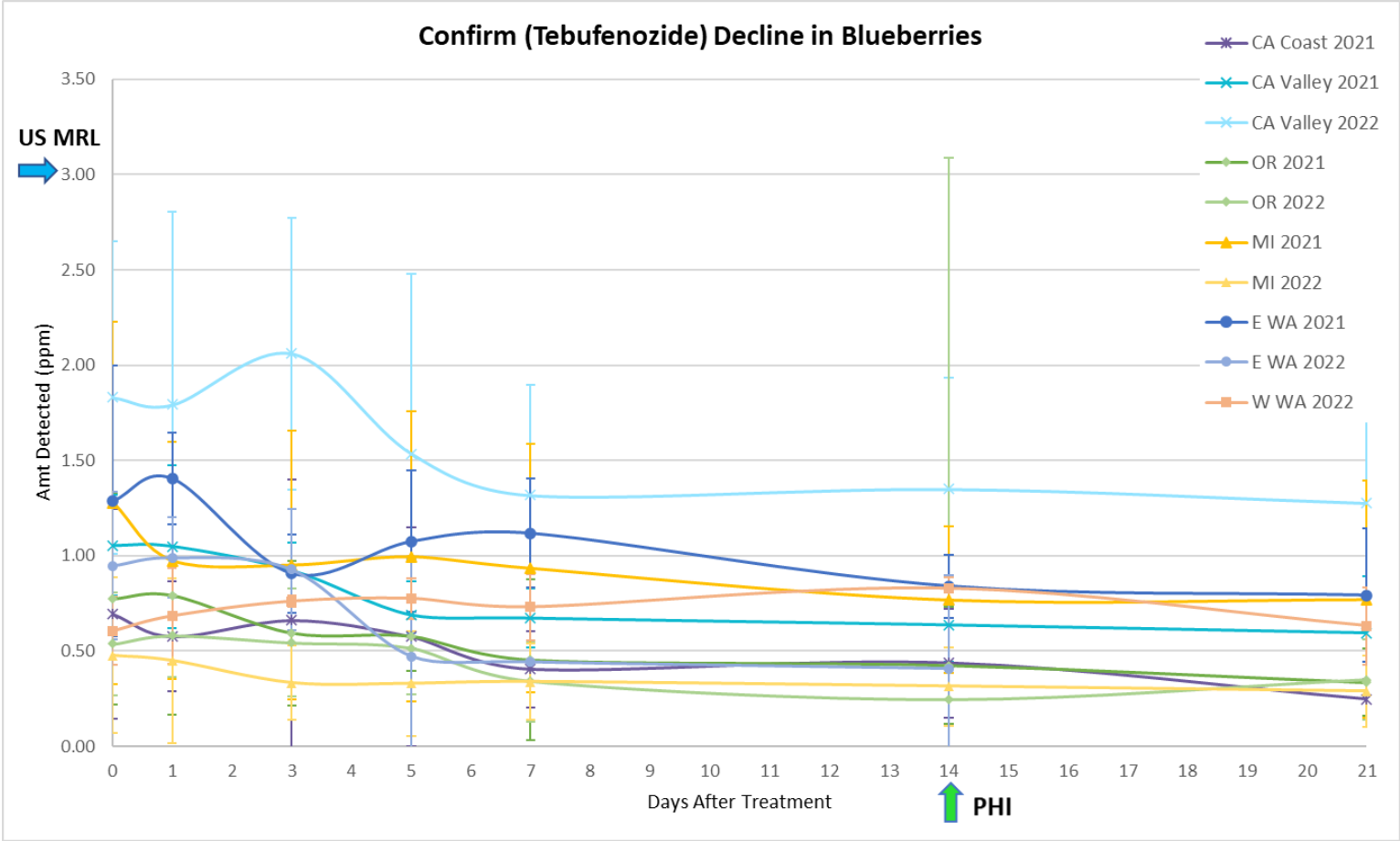


MRLs	
US	2
AU	2
CA	0.1 default
EU	0.01
JA	2
KO	2
PH	No MRL= 0
SG	No MRL= 0
TA	2
VN	No MRL= 0

Transform (sulfoxaflor)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Green	Green	Green	Green	Green	Green
Australia	Red	Green	Green	Green	Green	Green	Green
Canada	Red	Red	Red	Yellow	Yellow	Yellow	Yellow
EU	Red	Red	Red	Red	Red	Red	Red
Japan	Red	Green	Green	Green	Green	Green	Green
Korea	Red	Green	Green	Green	Green	Green	Green
Philippines	Red	Red	Red	Red	Red	Red	Red
Singapore	Red	Red	Red	Red	Red	Red	Red
Taiwan	Red	Green	Green	Green	Green	Green	Green
Vietnam	Red	Red	Red	Red	Red	Red	Red



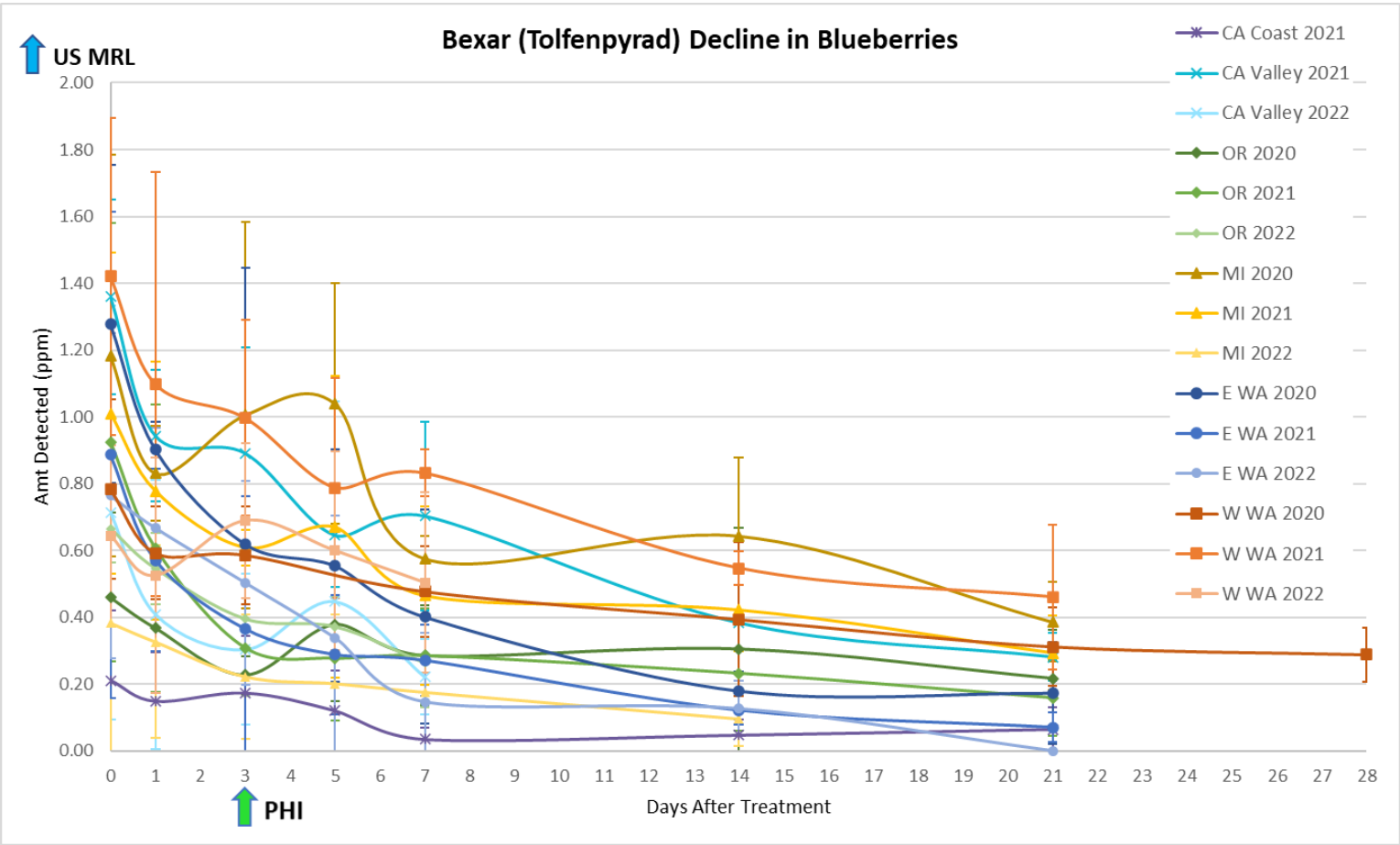
# CONFIRM: TEBUFENOZIDE



MRLs	
US	3
AU	3
CA	3
EU	3
JA	3
KO	3
PH	3
SG	3
TA	0.01
VN	3

Confirm (tebufenozide)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

# BEXAR: TOLFENPYRAD

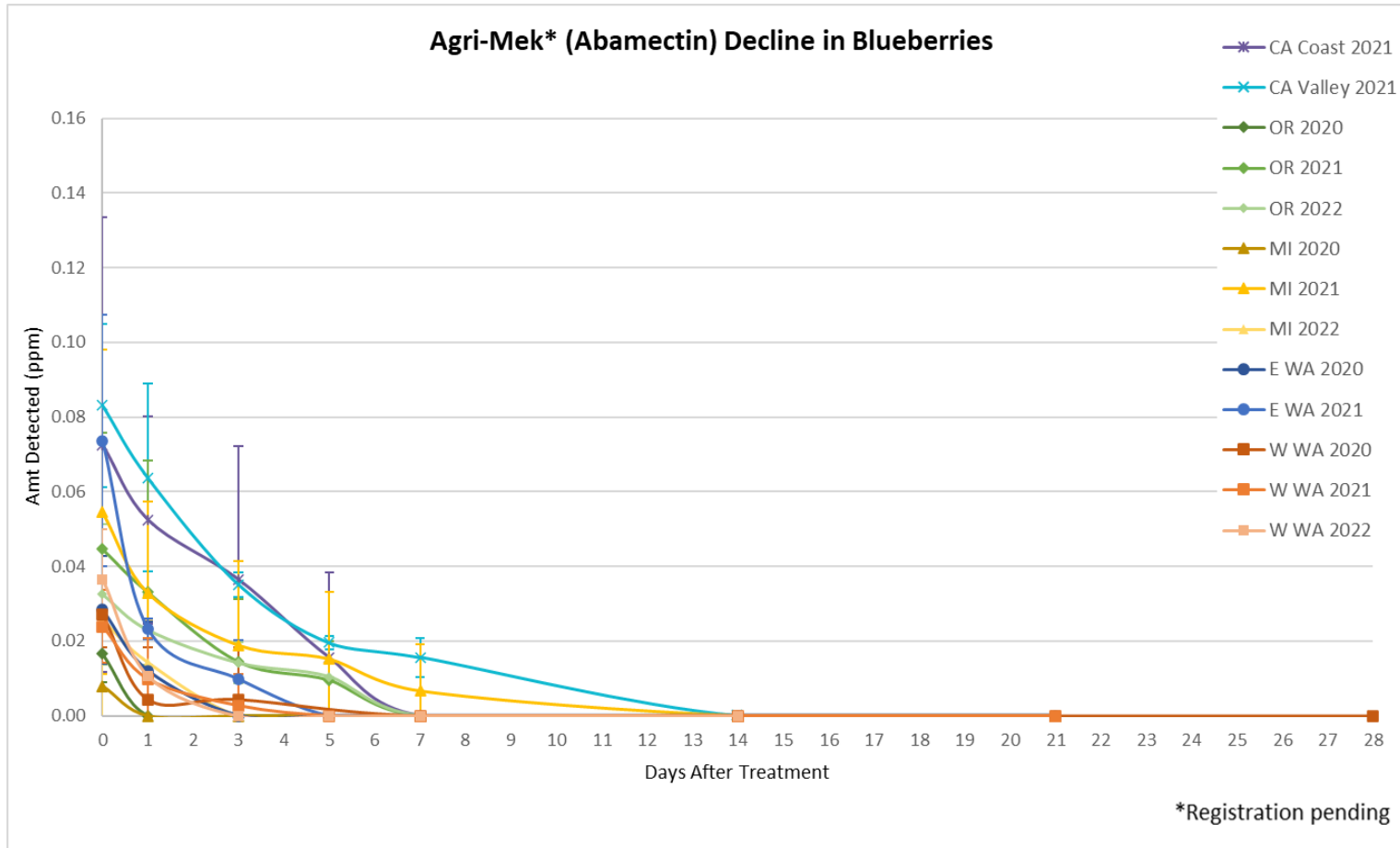


MRLs	
US	7
AU	No MRL= 0
CA	0.1
EU	0.01
JA	0.01 default
KO	0.01 default
PH	No MRL= 0
SG	No MRL= 0
TA	0.01
VN	No MRL= 0

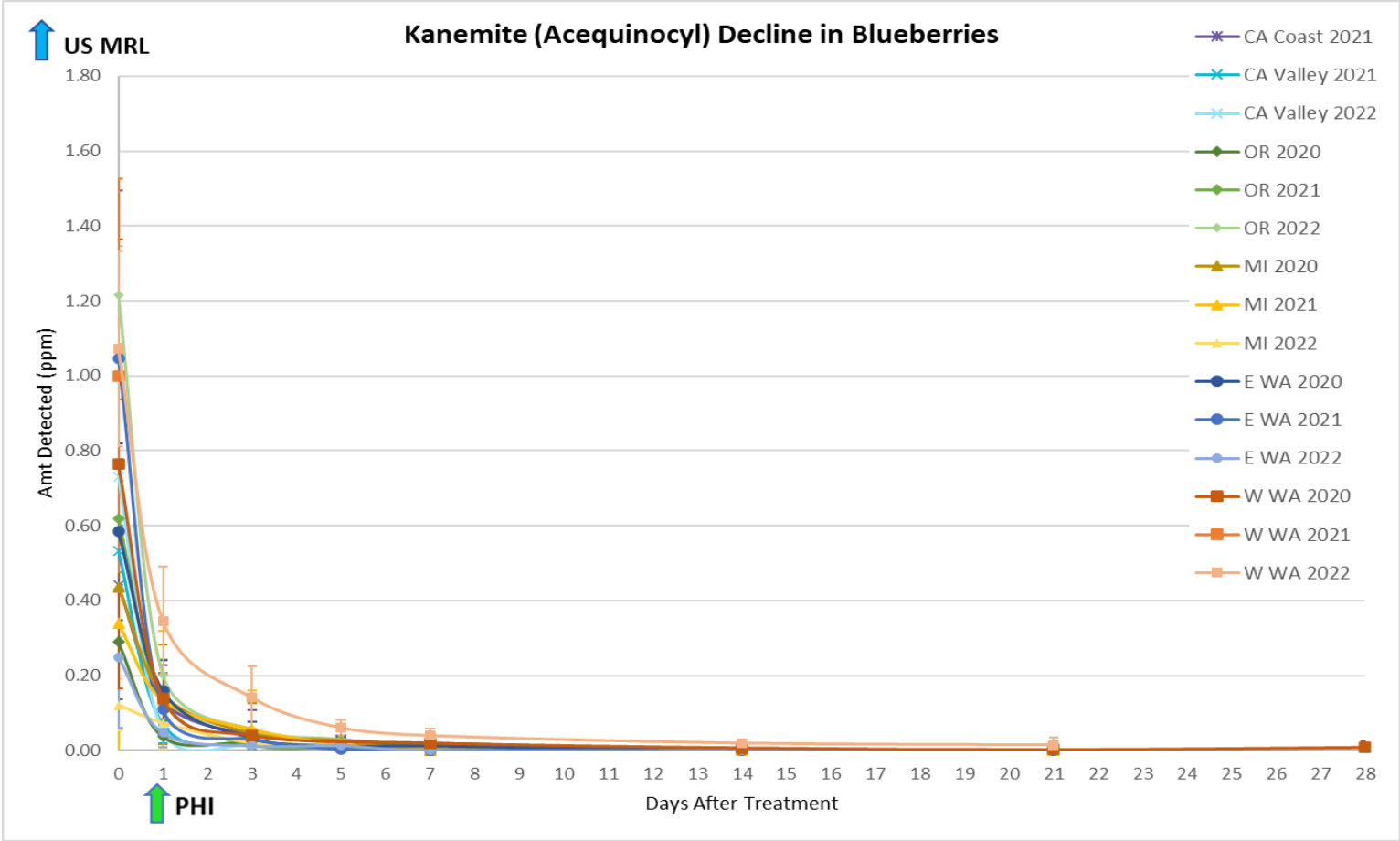
Bexar (tolfenpyrad)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

# MITICIDES

# AGRI-MEK: ABAMECTIN



# KANEMITE: ACEQUINOCYL

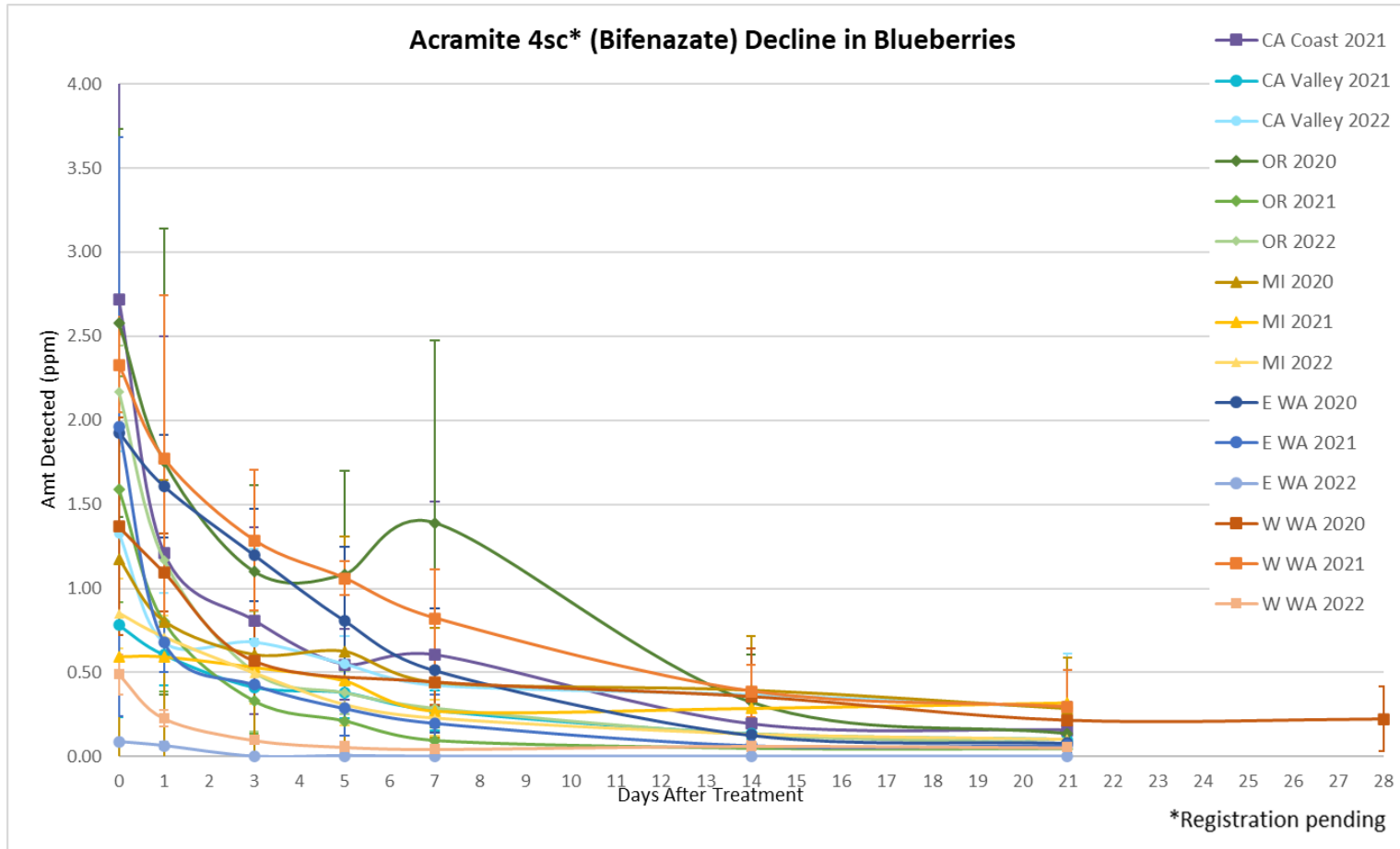


MRLs	
US	3
AU	3
CA	0.1 default
EU	0.01
JA	0.01 default
KO	3
PH	No MRL= 0
SG	No MRL= 0
TA	No MRL= 0
VN	No MRL= 0

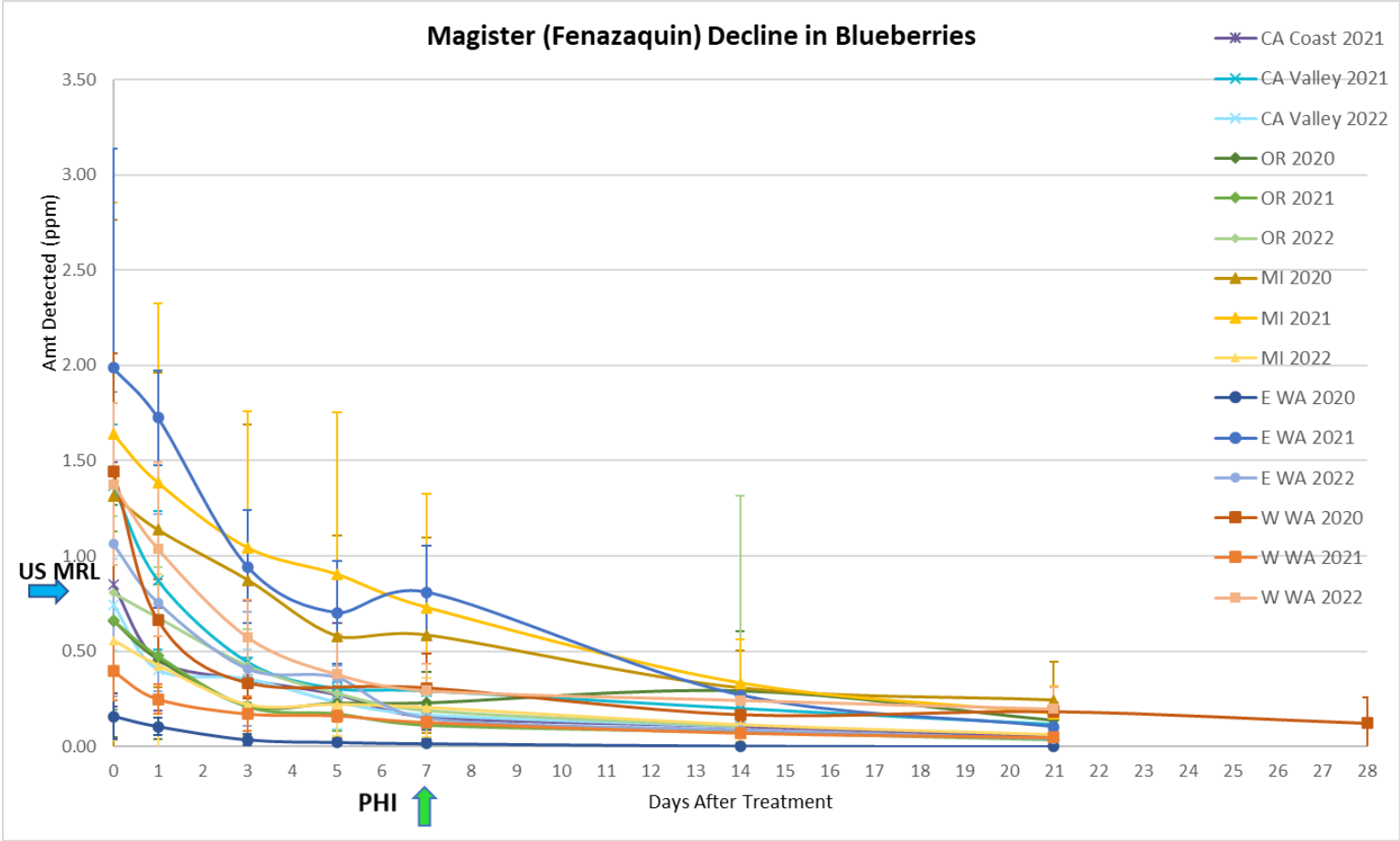
Kanemite (acequinocyl)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Green	Green	Green	Green	Green	Green
Australia	Red	Green	Green	Green	Green	Green	Green
Canada	Red	Red	Yellow	Green	Green	Green	Green
EU	Red	Red	Red	Red	Red	Yellow	Yellow
Japan	Red	Red	Red	Red	Red	Yellow	Yellow
Korea	Red	Green	Green	Green	Green	Green	Green
Philippines	Red	Red	Red	Red	Red	Yellow	Yellow
Singapore	Red	Red	Red	Red	Red	Yellow	Yellow
Taiwan	Red	Red	Red	Red	Red	Yellow	Yellow
Vietnam	Red	Red	Red	Red	Red	Yellow	Yellow



# ACRAMITE: BIFENAZATE



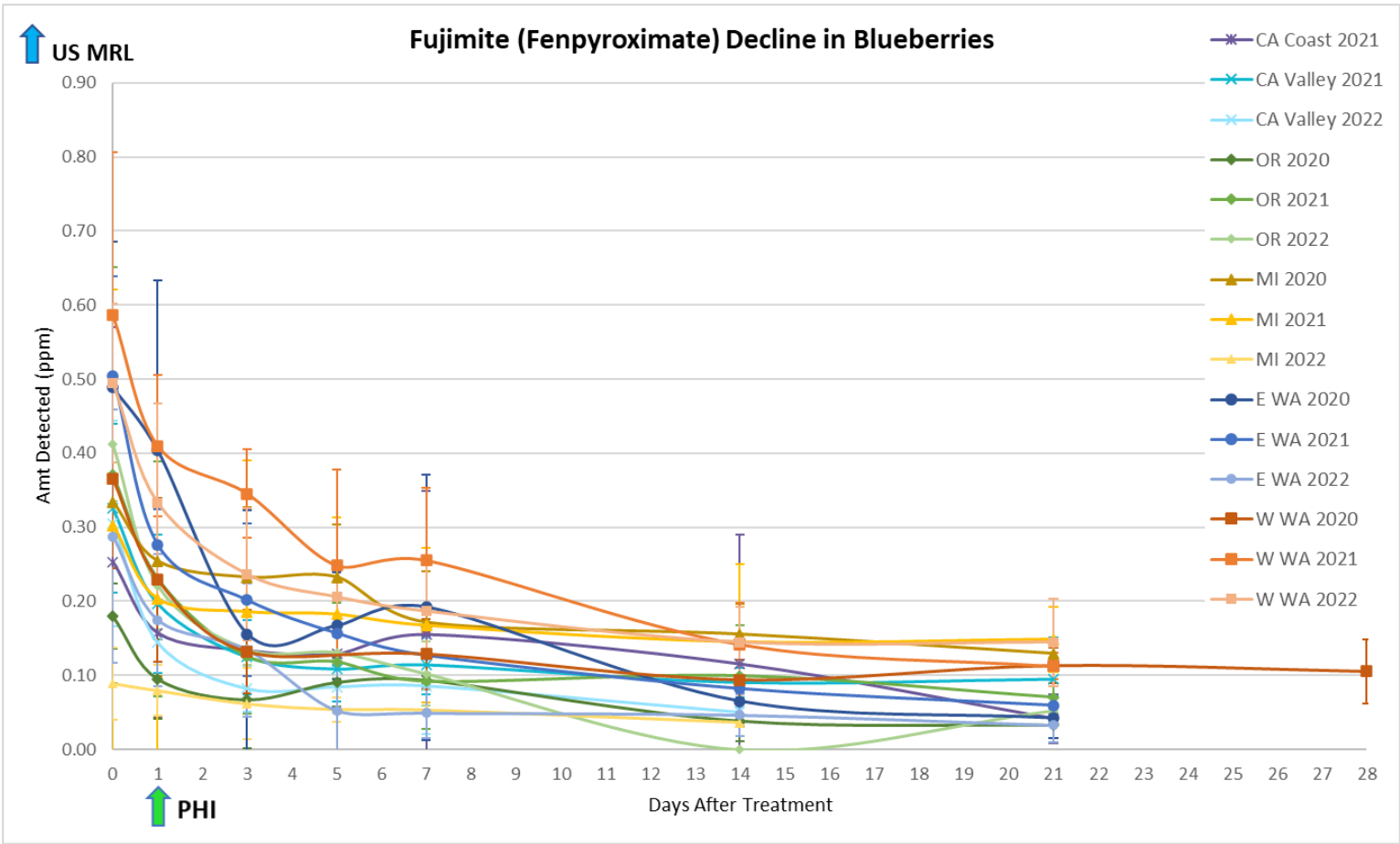
# MAGISTER: FENAZAQUIN



MRLs	
US	0.8
AU	No MRL= 0
CA	0.1
EU	0.01
JA	2
KO	0.8
PH	No MRL= 0
SG	No MRL= 0
TA	0.01
VN	No MRL= 0

Magister (fenazaquin)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

# FUJIMITE: FENPYROXIMATE

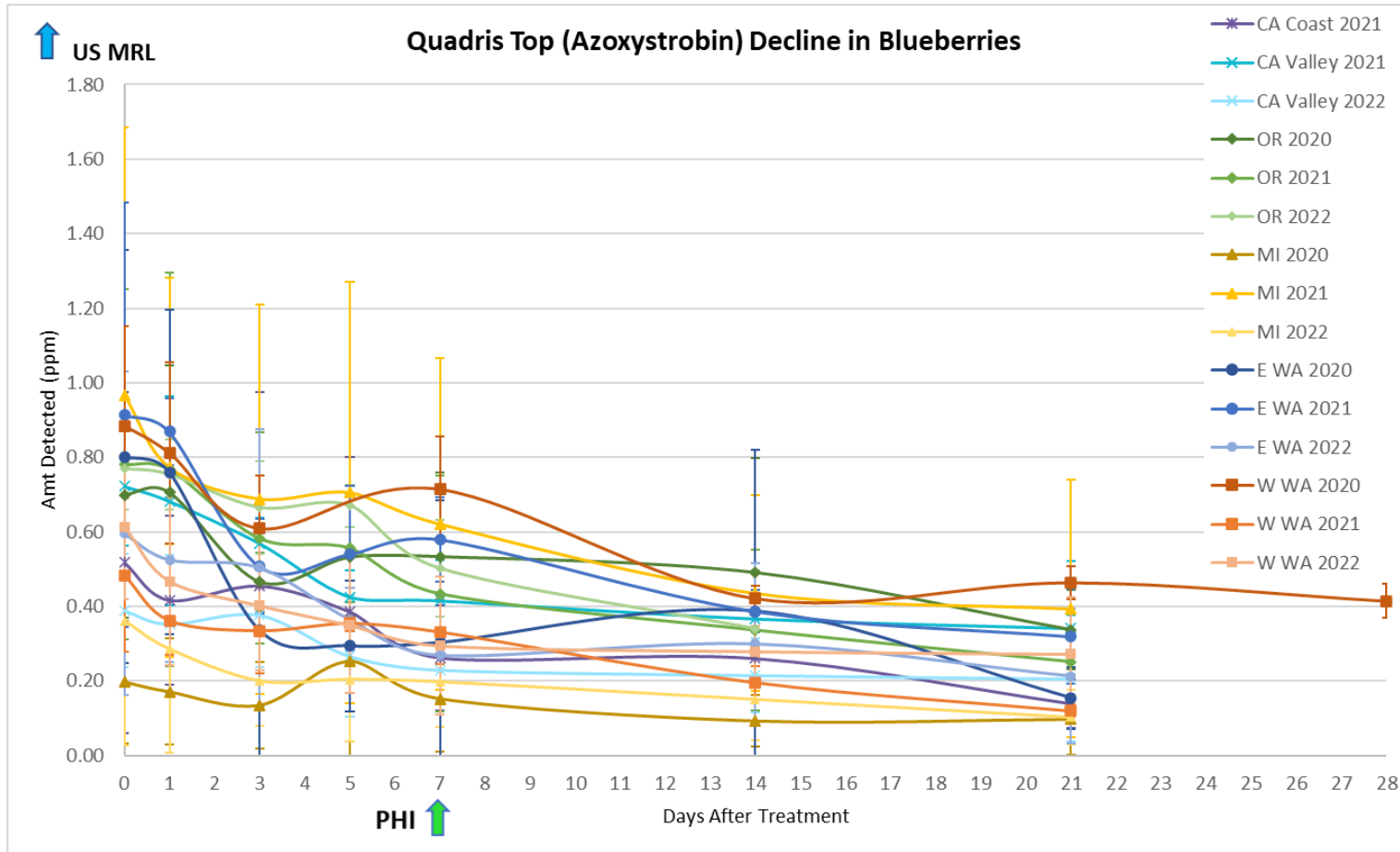


MRLs	
US	3
AU	0.1
CA	0.1
EU	0.4
JA	2
KO	0.3
PH	No MRL= 0
SG	No MRL= 0
TA	0.5
VN	No MRL= 0

Fujimite (fenpyroximate)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Green	Green	Green	Green	Green	Green
Australia	Red	Red	Red	Red	Red	Red	Red
Canada	Red	Red	Red	Red	Red	Red	Red
EU	Red	Yellow	Green	Green	Green	Green	Green
Japan	Red	Green	Green	Green	Green	Green	Green
Korea	Red	Red	Yellow	Green	Green	Green	Green
Philippines	Red	Red	Red	Red	Red	Red	Red
Singapore	Red	Red	Red	Red	Red	Red	Red
Taiwan	Red	Green	Green	Green	Green	Green	Green
Vietnam	Red	Red	Red	Red	Red	Red	Red

# FUNGICIDES

# QUADRIS TOP: AZOXYSTROBIN

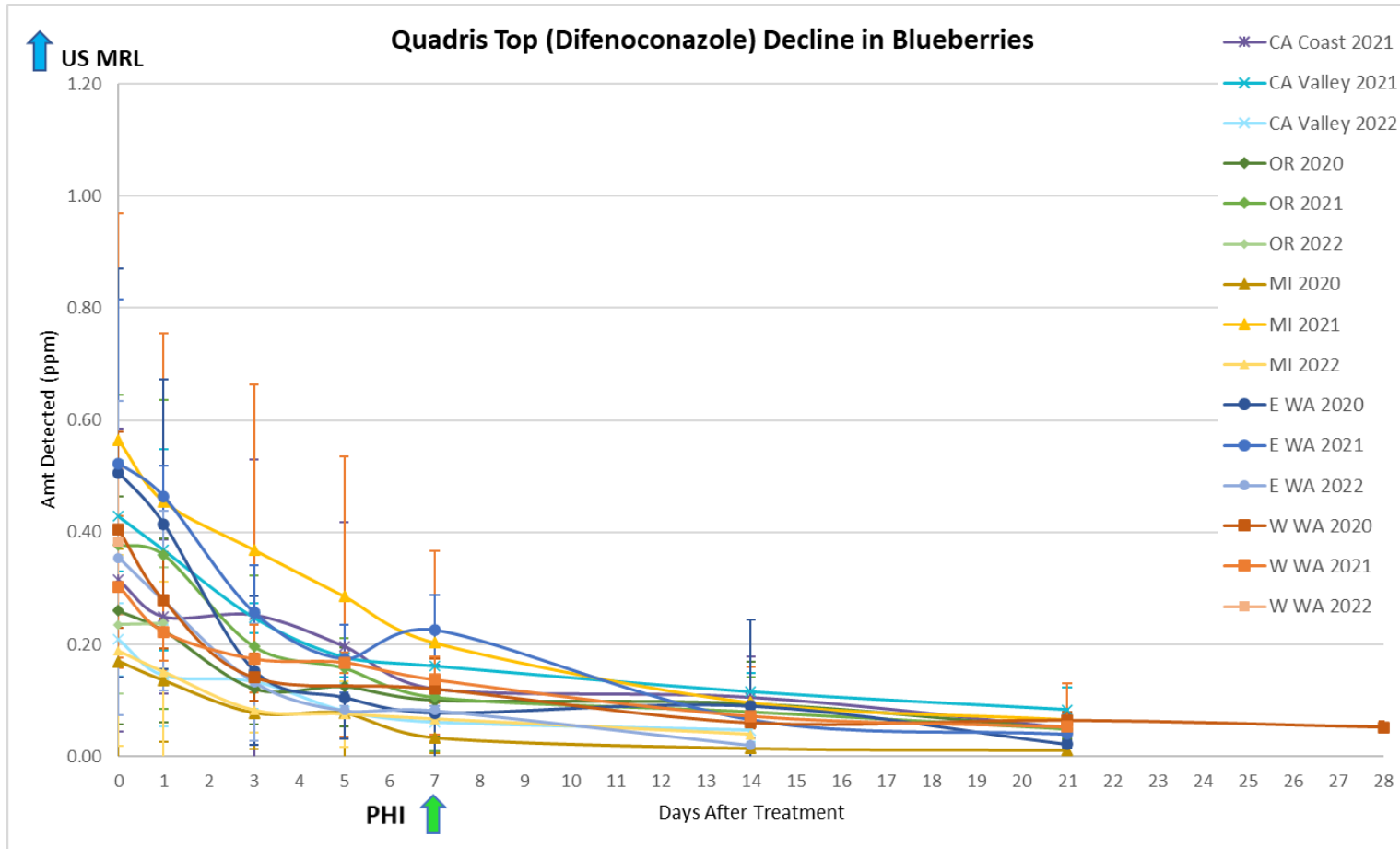


MRLs	
US	5
AU	5
CA	3
EU	5
JA	5
KO	7
PH	5
SG	5
TA	5
VN	5

Quadris Top (azoxystrobin + difenoconazole*)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

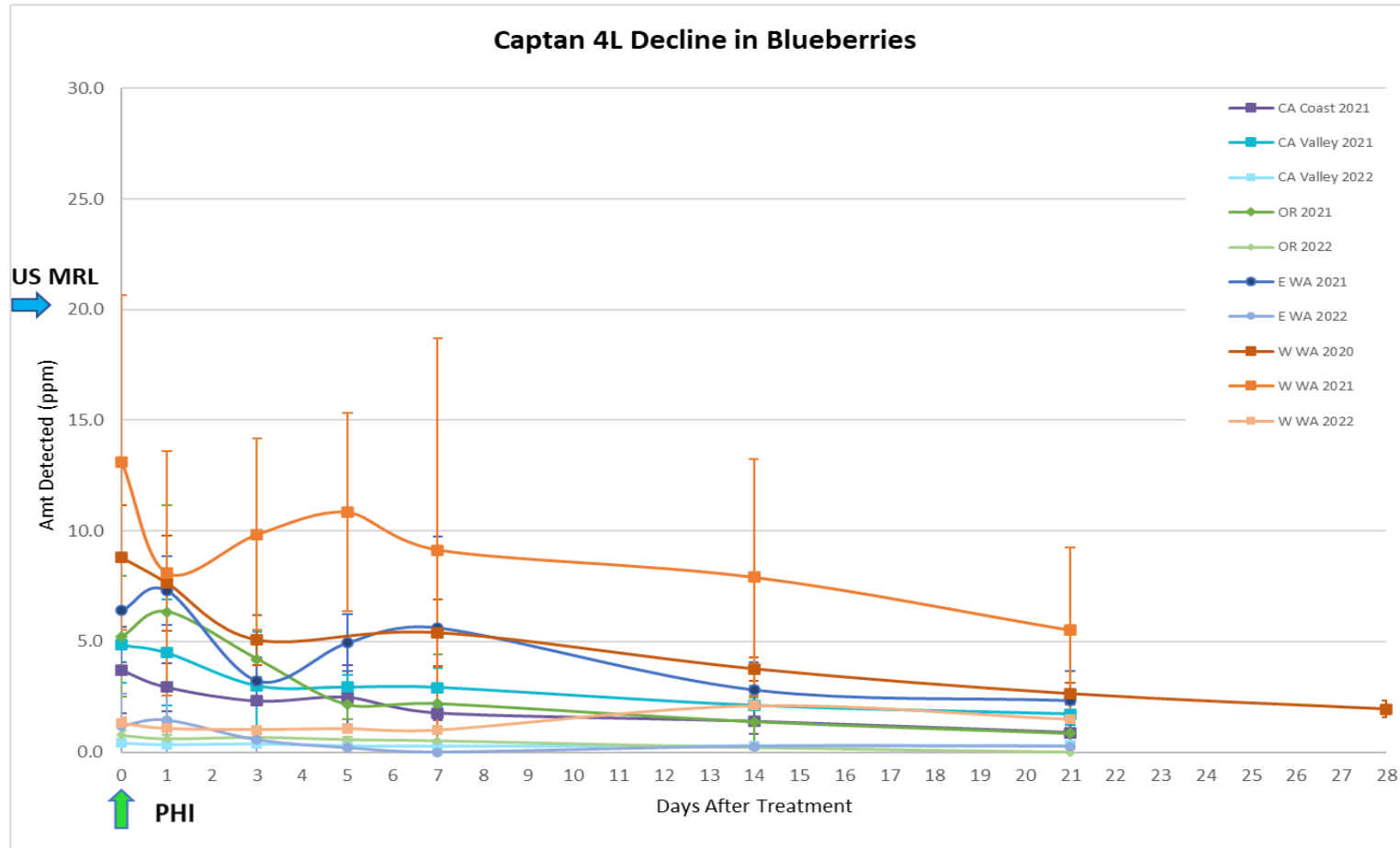


# QUADRIIS TOP: DIFENOCONAZOLE



MRLs	
US	4
AU	4
CA	4
EU	4
JA	4
KO	4
PH	4
SG	4
TA	1
VN	No MRL= 0

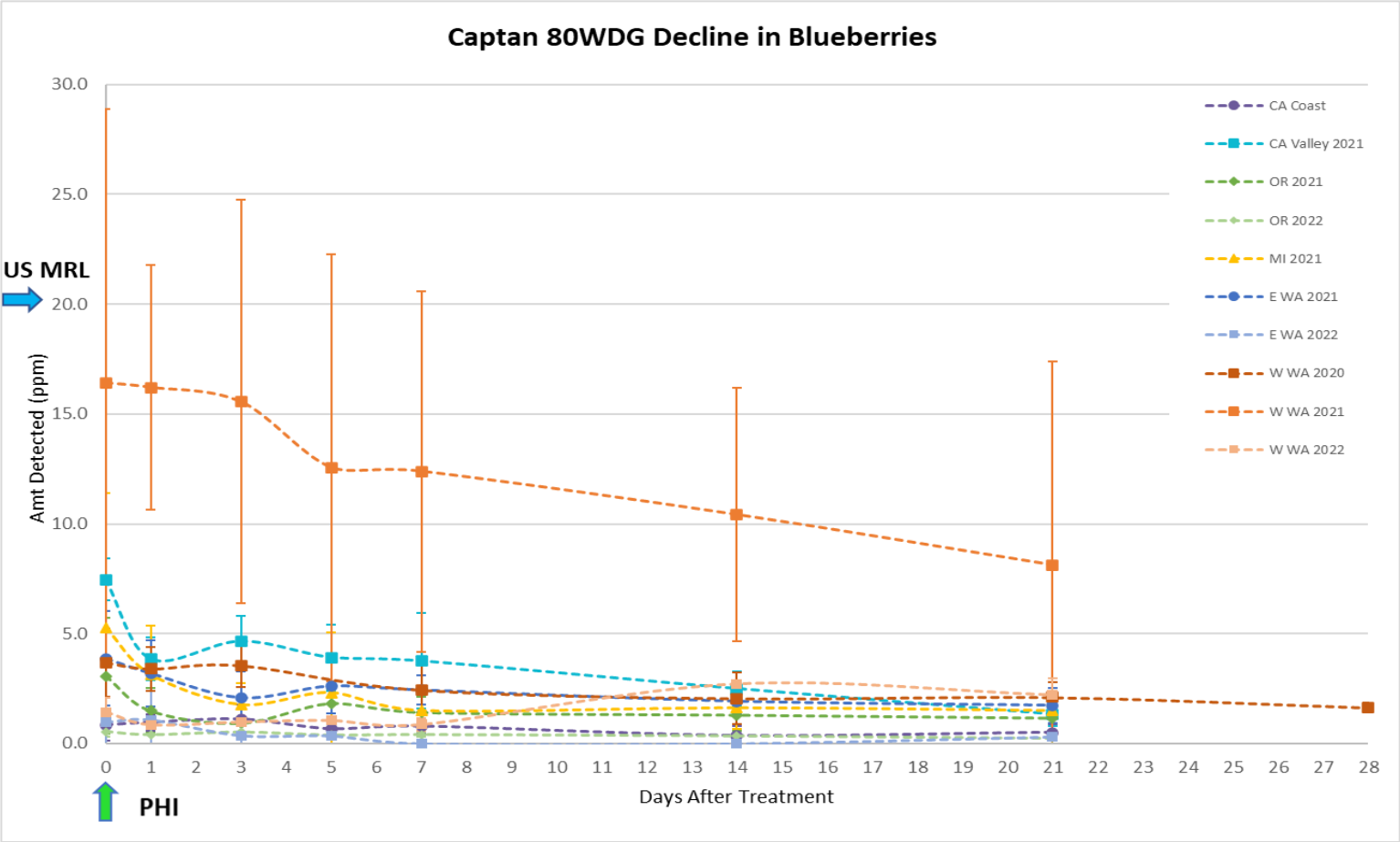
# CAPTAN 4L



MRLs	
US	20
AU	20
CA	5
EU	30
JA	20
KO	20
PH	20
SG	20
TA	20
VN	20

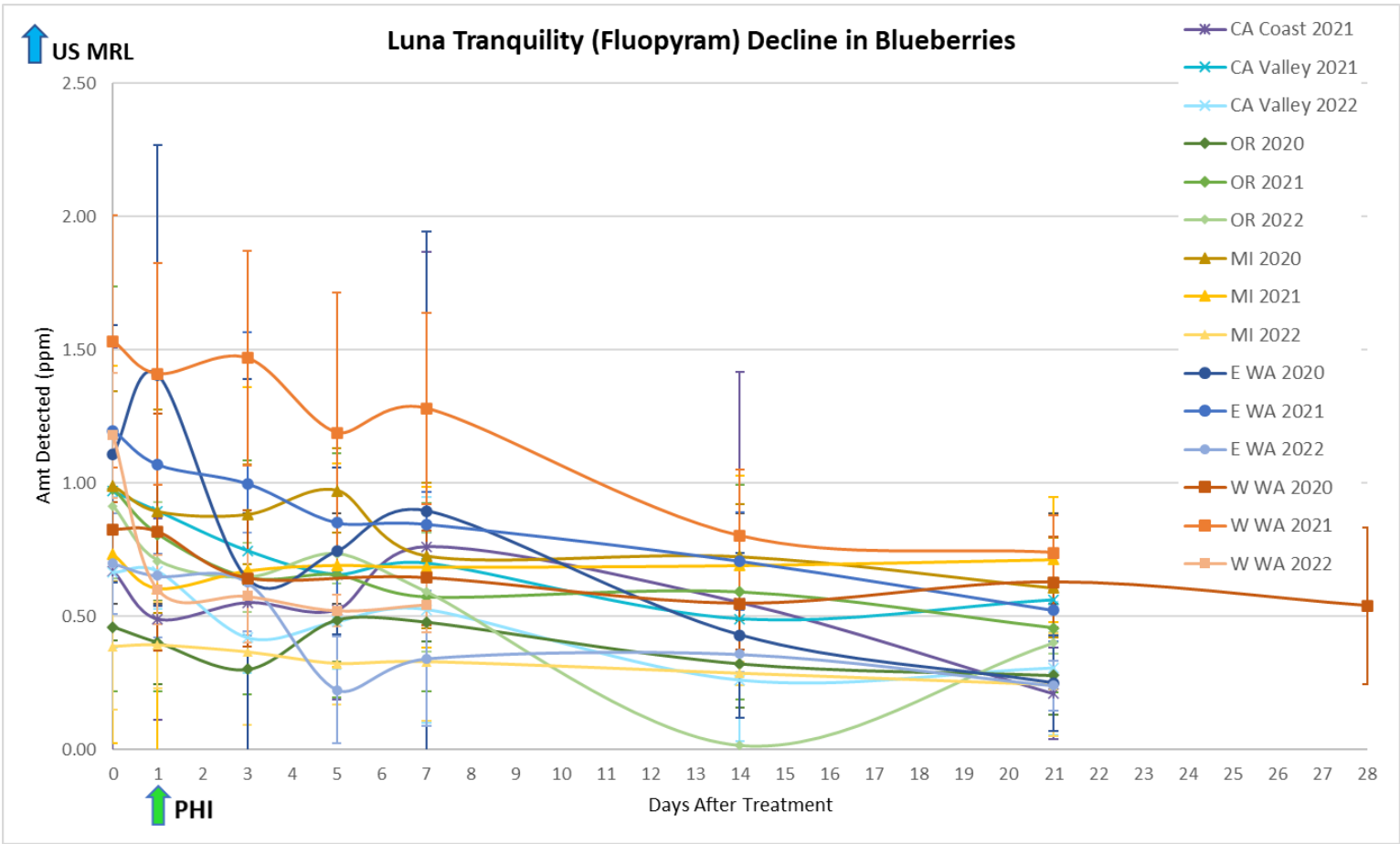
Captan 4L							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

# CAPTAN 80WDG



Captan 80 WDG							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

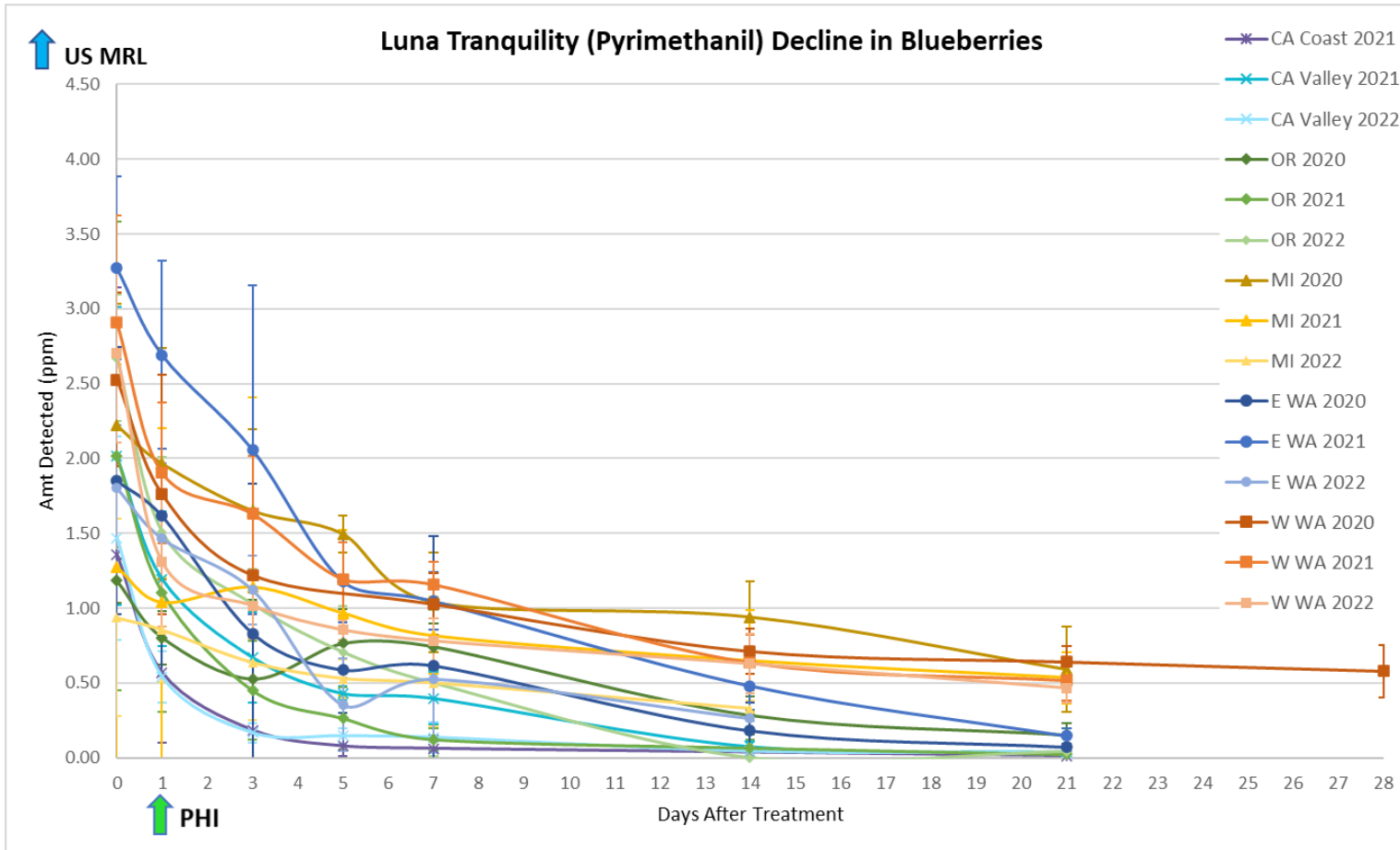
# LUNA TRANQUILITY: FLUOPYRAM



MRLs	
US	7
AU	7
CA	7
EU	7
JA	7
KO	6
PH	7
SG	7
TA	2
VN	No MRL= 0

Luna Tranquility (fluopyram + pyrimethanil)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

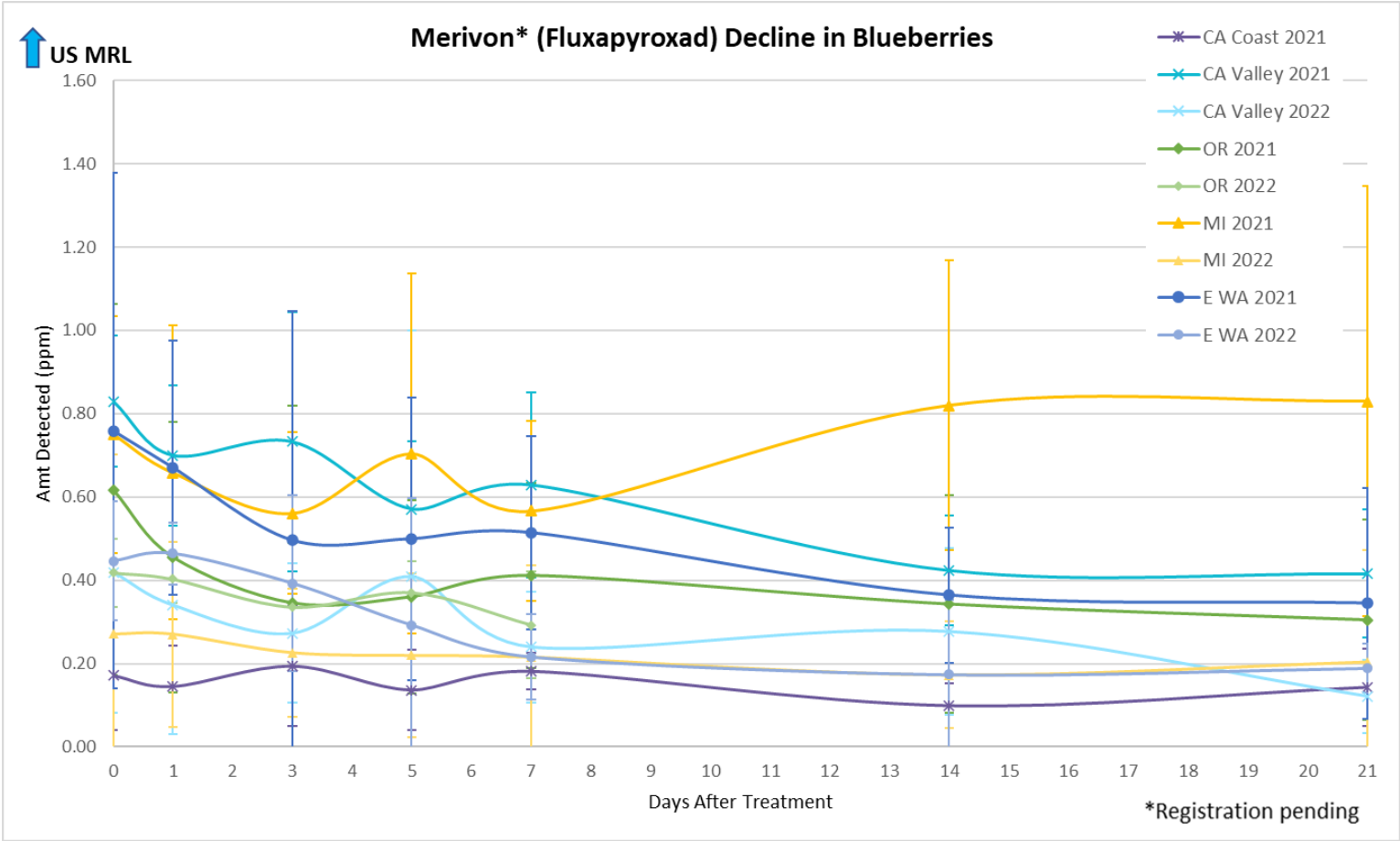
# LUNA TRANQUILITY: PYRIMETHANIL



MRLs	
US	8
AU	8
CA	8
EU	8
JA	5
KO	8
PH	8
SG	8
TA	7
VN	No MRL= 0

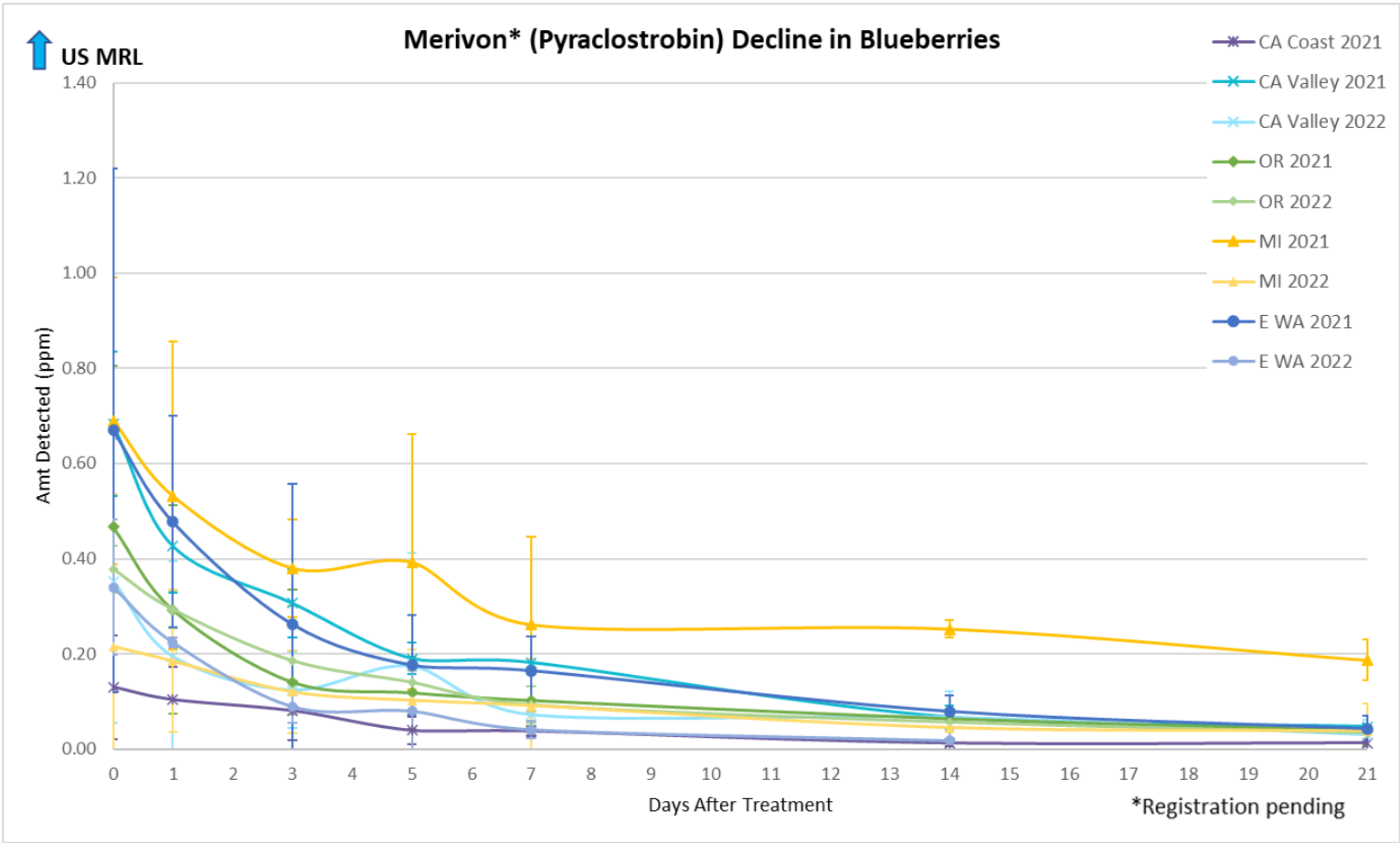


# MERIVON: FLUXAPYROXAD



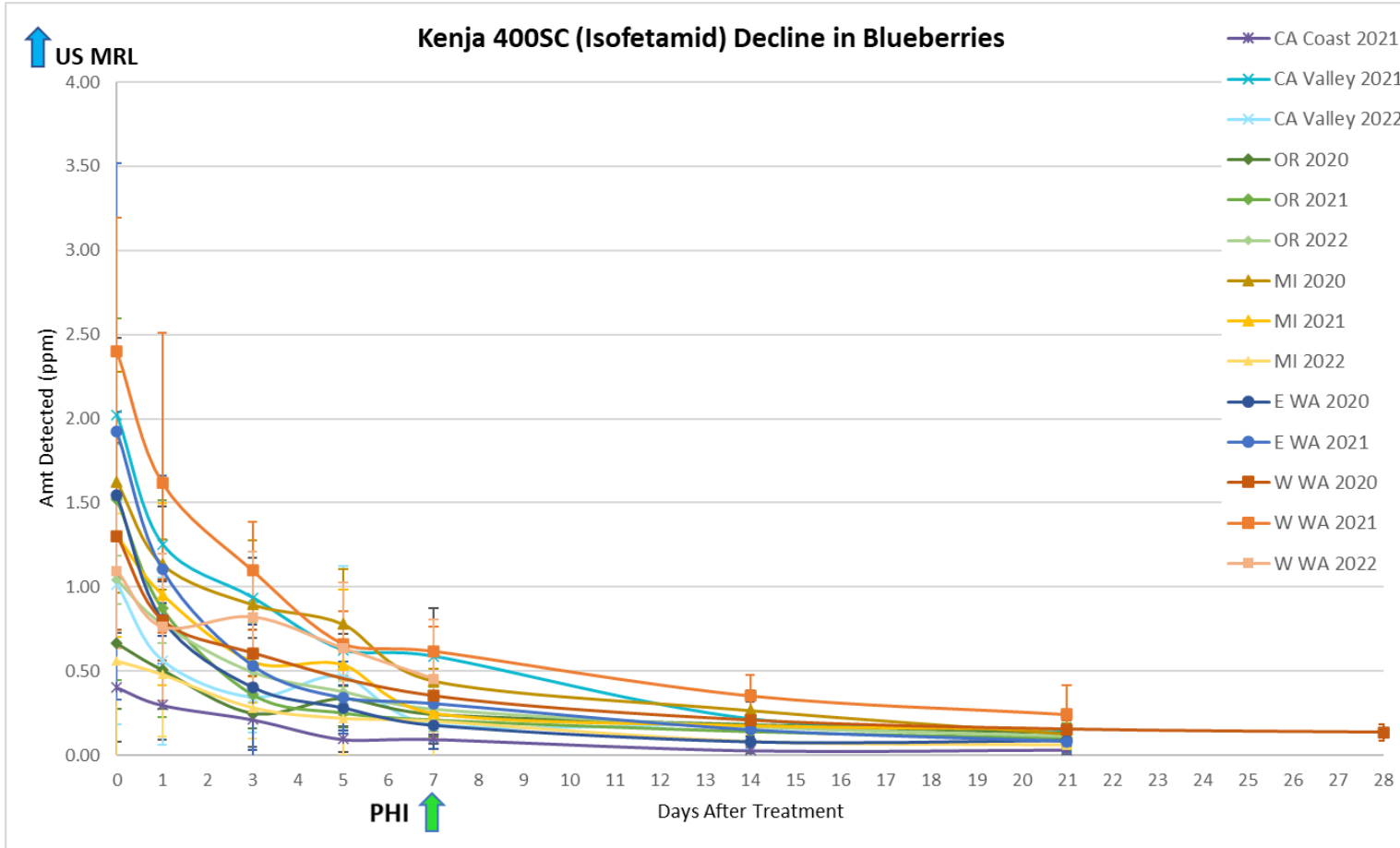
MRLs	
US	7
AU	7
CA	7
EU	7
JA	7
KO	7
PH	7
SG	7
TA	5
VN	No MRL= 0

# MERIVON: PYRACLOSTROBIN



MRLs	
US	4
AU	5
CA	3.5
EU	4
JA	4
KO	4
PH	4
SG	4
TA	1
VN	4

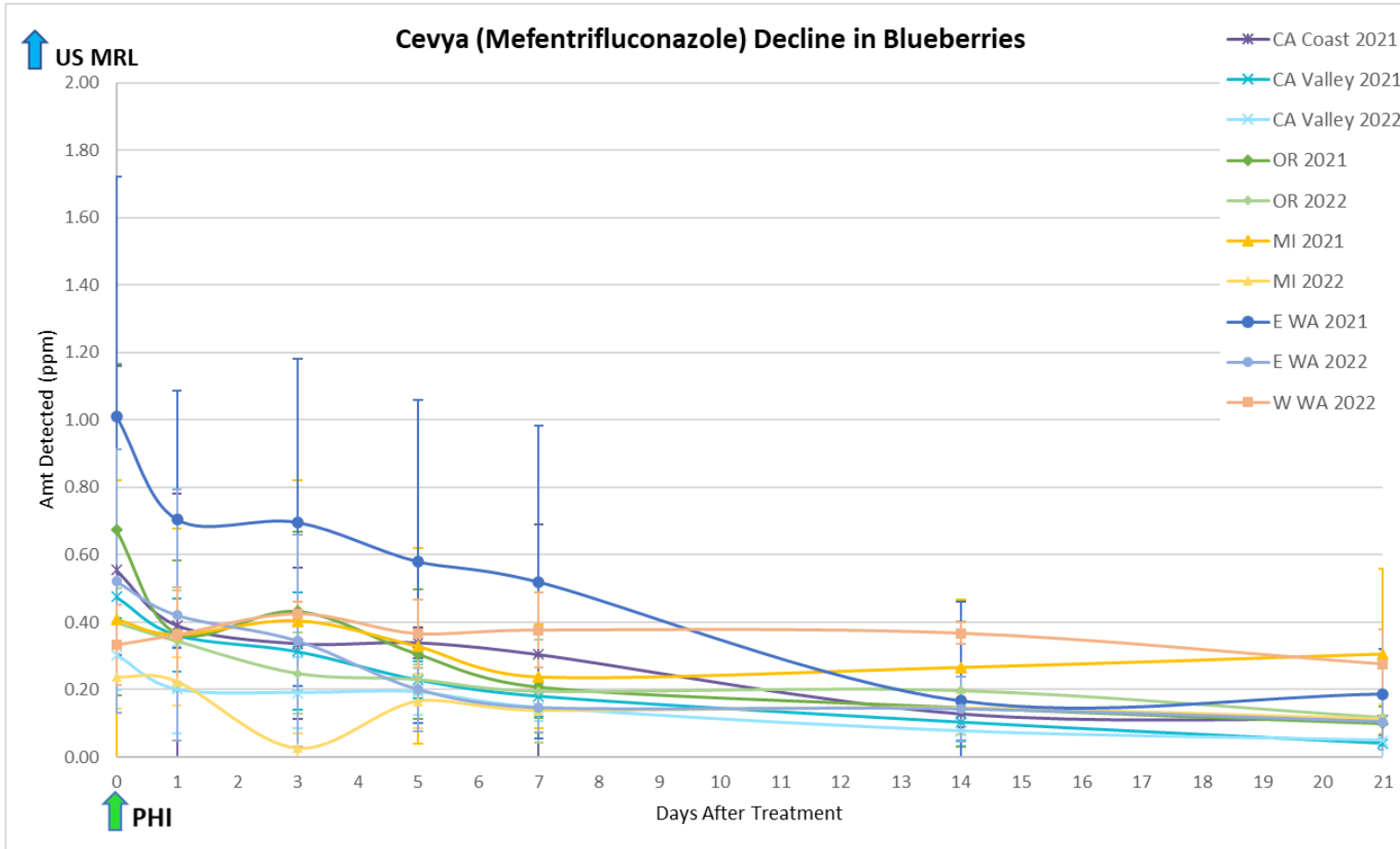
# KENJA: ISOFETAMID



MRLs	
US	5
AU	5
CA	5
EU	0.01
JA	5
KO	7
PH	4
SG	4
TA	No MRL= 0
VN	No MRL= 0

Kenja (isofetamid)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Red	Red	Red	Red	Red	Red
Australia	Red	Red	Red	Red	Red	Green	Green
Canada	Red	Red	Red	Red	Red	Green	Green
EU	Red	Red	Red	Red	Red	Red	Red
Japan	Red	Red	Red	Red	Red	Green	Green
Korea	Red	Red	Red	Red	Red	Green	Green
Philippines	Red	Red	Red	Red	Red	Green	Green
Singapore	Red	Red	Red	Red	Red	Green	Green
Taiwan	Red	Red	Red	Red	Red	Red	Red
Vietnam	Red	Red	Red	Red	Red	Red	Red

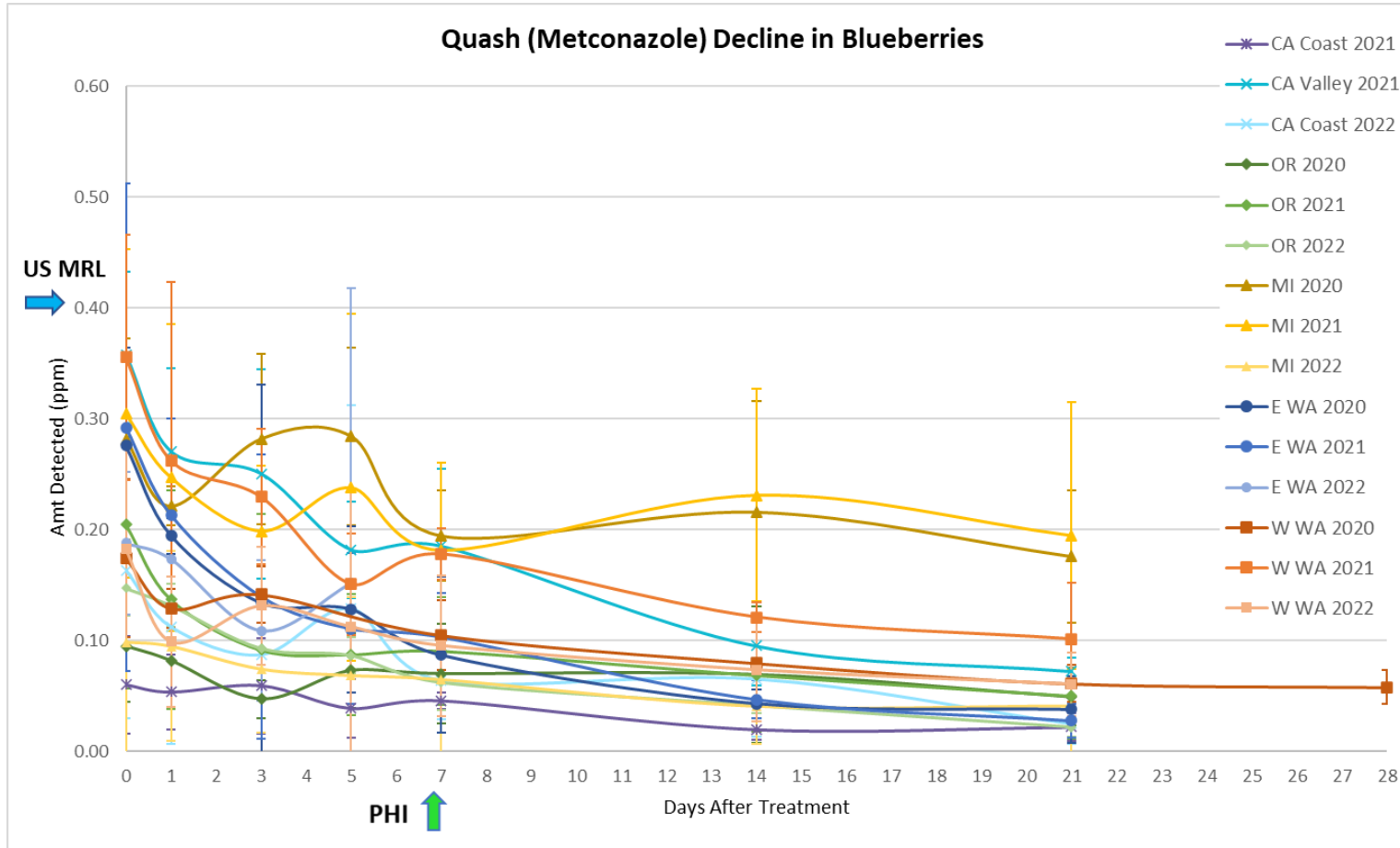
# CEVYA: MEFENTRIFLUCONAZOLE



MRLs	
US	5
AU	5
CA	0.1 default
EU	0.01
JA	0.01 default
KO	5
PH	No MRL= 0
SG	No MRL= 0
TA	No MRL= 0
VN	No MRL= 0

Cevya (mefentrifluconazole)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

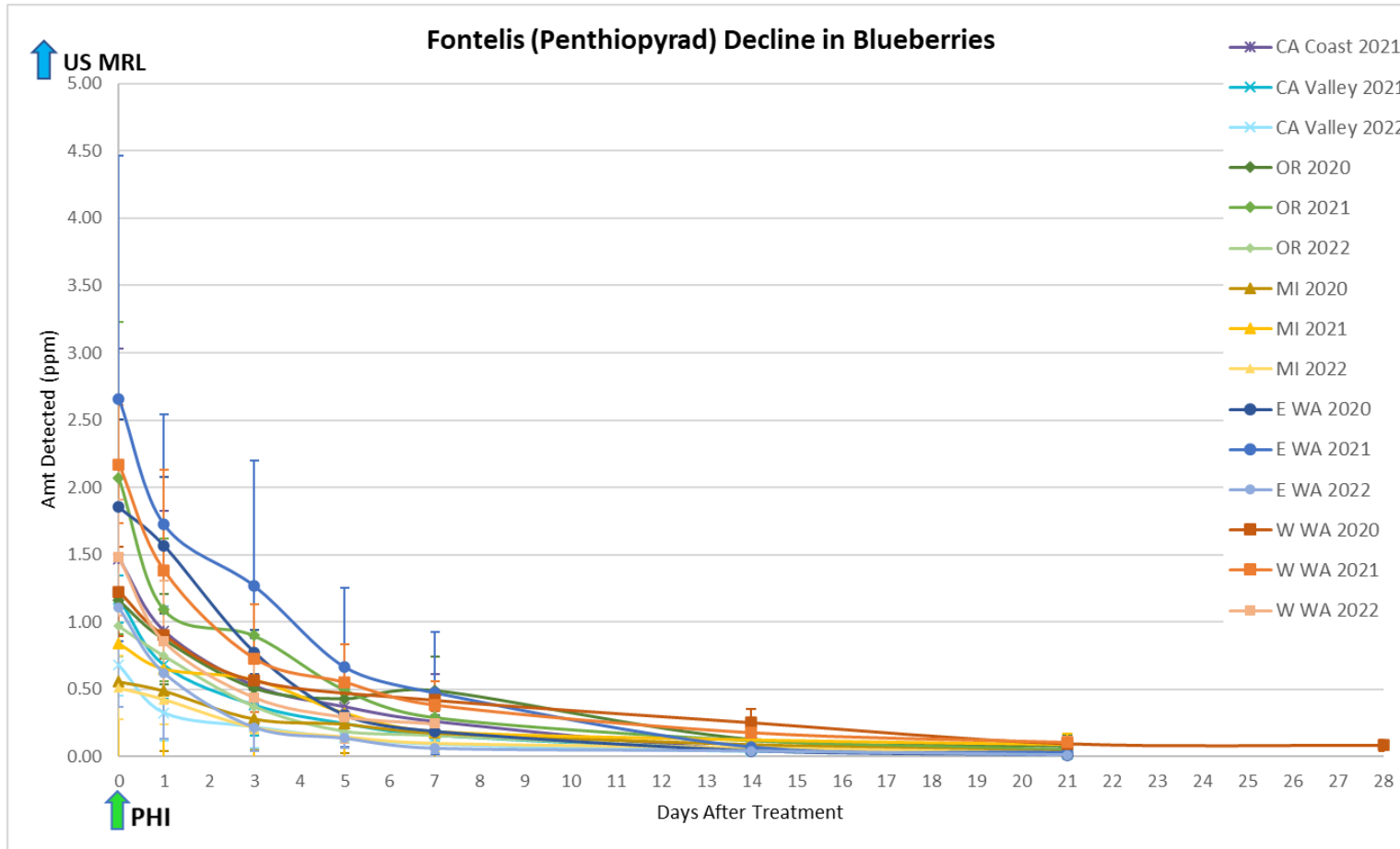
# QUASH: METCONAZOLE



MRLs	
US	0.4
AU	0.5
CA	0.4
EU	0.4
JA	0.4
KO	2
PH	0.5
SG	0.5
TA	0.4
VN	No MRL= 0

Quash (metconazole)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

# Fontelis: PENTHIOPYRAD

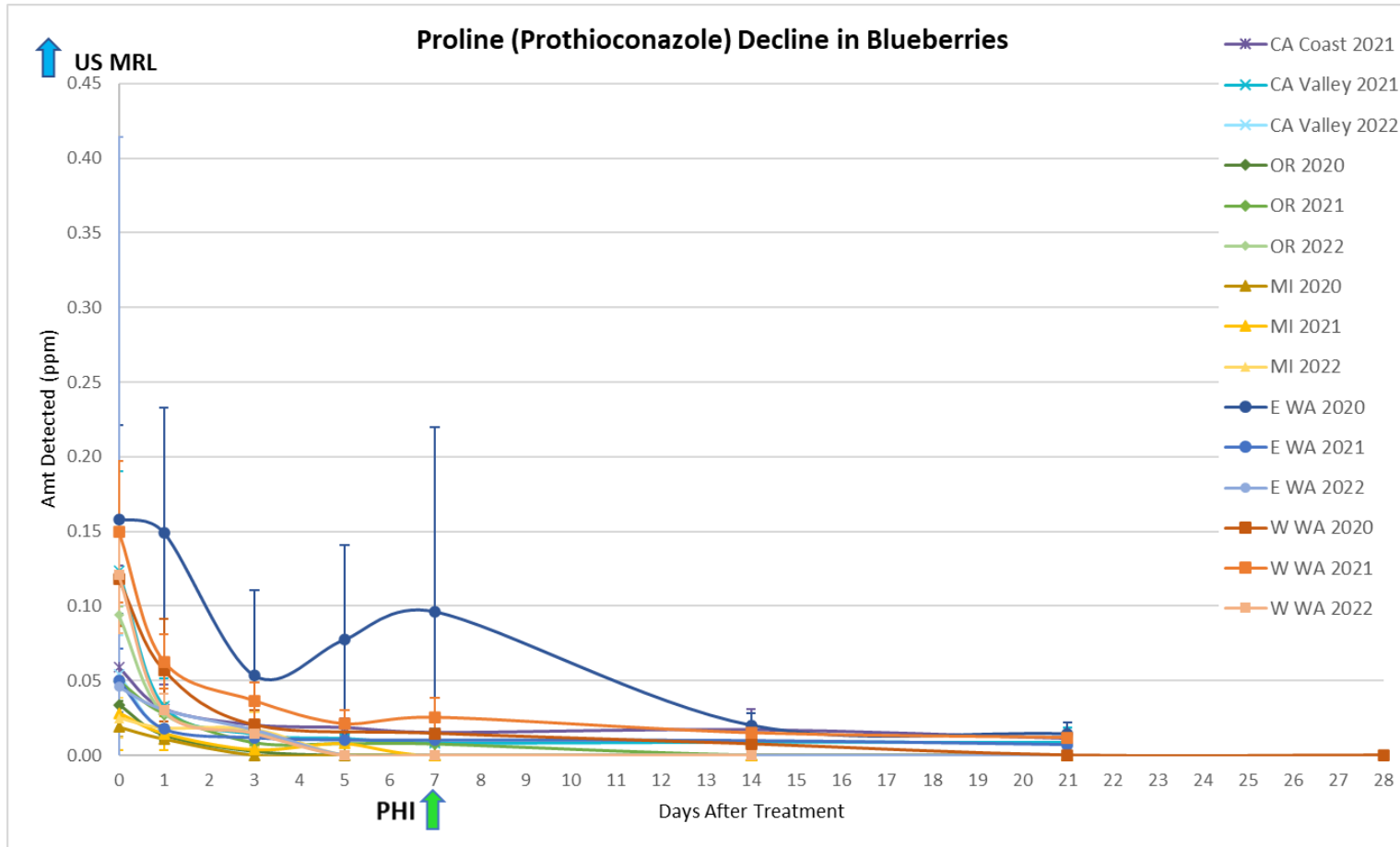


MRLs	
US	6
AU	7
CA	6
EU	0.01
JA	3
KO	0.07
PH	7
SG	7
TA	No MRL= 0
VN	No MRL= 0

Fontelis (penthiopyrad)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Green	Green	Green	Green	Green	Green	Green
Australia	Green	Green	Green	Green	Green	Green	Green
Canada	Green	Green	Green	Green	Green	Green	Green
EU	Red	Red	Red	Red	Red	Red	Red
Japan	Green	Green	Green	Green	Green	Green	Green
Korea	Red	Red	Red	Red	Red	Red	Yellow
Philippines	Green	Green	Green	Green	Green	Green	Green
Singapore	Green	Green	Green	Green	Green	Green	Green
Taiwan	Red	Red	Red	Red	Red	Red	Red
Vietnam	Red	Red	Red	Red	Red	Red	Red



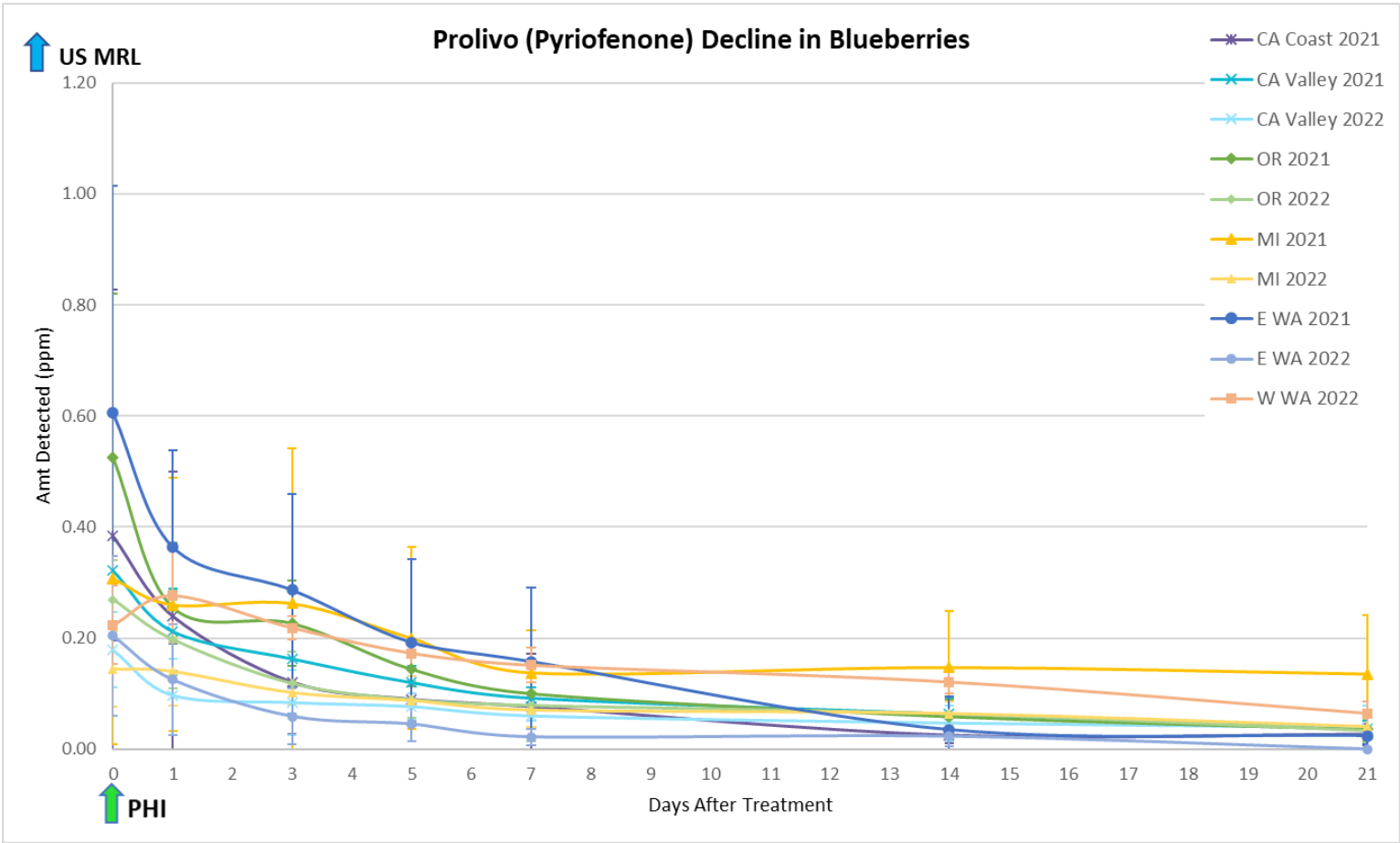
# PROLINE: PROTHIOCONAZOLE



MRLs	
US	2
AU	2
CA	2
EU	0.01
JA	2
KO	1.5
PH	1.5
SG	1.5
TA	1.5
VN	1.5

Proline (prothioconazole)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA	Red	Red	Red	Red	Red	Green	Green
Australia	Red	Red	Red	Red	Red	Green	Green
Canada	Red	Red	Red	Red	Red	Green	Green
EU	Red	Red	Red	Red	Red	Yellow	Yellow
Japan	Red	Red	Red	Red	Red	Green	Green
Korea	Red	Red	Red	Red	Red	Green	Green
Philippines	Red	Red	Red	Red	Red	Green	Green
Singapore	Red	Red	Red	Red	Red	Green	Green
Taiwan	Red	Red	Red	Red	Red	Green	Green
Vietnam	Red	Red	Red	Red	Red	Green	Green

# PROLIVIO: PYRIOFENONE



MRLs	
US	1.5
AU	1.5
CA	1.5
EU	1.5
JA	2
KO	1.5 import
PH	1.5
SG	1.5
TA	No MRL= 0
VN	No MRL= 0

Prolivo (pyriofenone)							
Intended Market	Days After Application						
	0 day	1 day	3 days	5 days	7 days	14 days	21 days
USA							
Australia							
Canada							
EU							
Japan							
Korea							
Philippines							
Singapore							
Taiwan							
Vietnam							

# Thank you.

## Contact

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(916) 345-3979

