



# **Agricultural Economics Report**

**No. 631**

**July 2008**

## **Japan MRL Regulation**

by

**Chifumi Takagi and  
Suzanne Thornsbury**

**Department of Agricultural,  
Food, and Resource  
Economics  
MICHIGAN STATE  
UNIVERSITY  
East Lansing, MI  
48824-1039**

► **New regulation**

On May 29, 2006 the Ministry of Health, Labour and Welfare (MHLW) in Japan introduced the positive list system for agricultural chemicals remaining in all foods-the system to prohibit the distribution of foods that contain agricultural chemicals above a certain level if new low replaces a formal regulation that established maximum residue limits (MRLs) for only a limited number of food product. The agricultural chemicals include pesticides, feed additives and veterinary drugs.

The purpose of this paper is to introduce the new Japanese regulation to Michigan cherry growers.

► **Michigan fruits exported to Japan**

According to “Michigan Agricultural Statistics 2004-2005: Fruit”, there are nine primary commodities in Michigan fruit production: apple, blueberry, sweet cherry, tart cherry, grape, peach, pear, plum, and strawberry. Contacts with several Michigan agricultural organizations and agricultural extension offices indicate which commodities are currently exported to Japan (Table 1).

**Table 1: Reported Outlets for Michigan Fruit Products**

Commodity	Contact	Reported Outlet
Apple	Michigan Apple Committee	Some are exported to Japan
Blueberry	Michigan Blueberry Growers Association	Japan is the largest export country for MI
Sweet cherry	Cherry Marketing Institute, Inc.	Domestic purpose
Tart cherry	Cherry Marketing Institute, Inc.	Japan is the third largest export country for MI
Grape	Michigan Grape and Wine Industry Council	Domestic purpose, but some part of juice may be exported to Japan
Peach	Michigan State University Extension	Domestic purpose
Pear	Michigan State University Extension	Domestic purpose
Plum	Michigan State University Extension	Domestic purpose
Strawberry	Michigan State University Extension	Domestic purpose

► **How to obtain the Japanese MRLs list**

The original MRLs list written in Japanese can be obtained at <http://www.mhlw.go.jp/topics/bukyoku/iyaku/syoku-anzen/zanryu2/dl/591228-1a.pdf>. The English version of the list can be obtained at <http://www.mhlw.go.jp/english/topics/foodsafety/positivelist060228/dl/r02.pdf> and, <http://www.mhlw.go.jp/english/topics/foodsafety/positivelist060228/dl/r03.pdf>.

The original MRLs list was sorted by chemical names. Thus, sorting out the list by commodities was needed. To do so, a very useful web site that belongs to the Japan Food Chemical Research Foundation (<http://www.m5.ws001.squarestart.ne.jp/foundation/search.html>) was found. The foundation is an extra-governmental organization of the MHLW and created the web site based on the original MRLs list for research purpose. Anyone can search the new Japanese regulation either by chemical name or by commodity at the web site.

The United States also has its own MRLs for all foods. We obtained the US MRLs for cherry from Sherry Glick (Ms), US EPA/Office of Pesticide Programs, BPPD Environmental Stewardship Branch in Las Vegas, NV.

► **Northwest Michigan Commonly Used Products Compared with Regulation**

The lists of common insecticide and fungicide compounds used in Northwest apples and tart cherry production in 2004 and 2005 were obtained from James Bardenhagen, (Mr). Only trade names were available on the initial list, so adding the names of the chemicals was needed. Chemical names were obtained through a web search and the MRLs list was used to check the regulatory standard. Table 2 compares the commonly used Northwest Michigan products with regulation below.

**Table 2: Northwest Michigan Commonly Used Products Compared with Regulation**

<i>Trade Name</i>	<i>Chemical Name</i>	<i>Japanese MRLs (ppm)</i>	<i>US MRLs (ppm)</i>
<b>Fungicides</b>			
Bravo Weather Stik	Chlorothalonil	0.5	0.5
Bravo Ultrex	Chlorothalonil	0.5	0.5
Captan 50WP	Captan	5	100

Captec	Captan	5	
*Carbamate	Ferbam	N/A	
*Carbamate plus sulfur	Ferbam and Sulfur	N/A	
Dithane M-45, full rate	Mancozeb	5	
Dithane M-45, half rate	Mancozeb	5	
Elite 45DF	Tebuconazole	5	
Flint	Trifloxystrobin	2	
Indar 75WSP	Fenbuconazole	1	
*Manzate 75	Mancozeb	N/A	
Nova 40W, high rate	Myclobutanil	4	
Nova 40W, lower rate	Myclobutanil	4	
Orbit 41.8 WP	Propiconazole	1	
*Penncozeb DF	Mancozeb	N/A	
*Penncozeb DF (1/2 rate)	Mancozeb	N/A	
*Pristine	Boscalid and Pyraclostrobin	N/A	
Rovral 50WP	Iprodione	10	
Rubigan 1EC - high rate	Fenarimol	1	1
Rubigan 1EC - lower rate	Fenarimol	1	1
*Agri-Strep and Agrimycin 17	Streptomycin sulfate	N/A	
Sovran DF	Kresoxim-methyl	20	
*Sulfur microfine, high rate	Sulfur	N/A	
*Sulfur 95WP, low rate	Sulfur	N/A	
*Syllit 65WP (1.5 lb rate)	Dodine	N/A	
Syllit 65WP (2 lb rate)	Dodine	3	
Vangaurd WG	Cyprodinil	2	
*Ziram 76DF	Ziram	N/A	7
Elevate	Fenhexamid	10	
*Mycoshield	Oxytetracycline	N/A	
*Agrimycin17	Streptomycin	N/A	

	Sulfate		
Scala	Pyrimethanil	10	
<b>Insecticide</b>			
Acramite	Bifenazate	2	
Actara	Thiamethoxam	5	
Agrimek .15EC	Abamectin	0.02	
Ambush	Permethrin	5	3
Apollo	Clofantezine	0.1	
*Asana XL	Esfenvalerate	N/A	
Assail-high rate	Acetamiprid	5	
Assail	Acetamiprid	5	
Avaunt	Indoxacarb	2	
Danitol	Fenpropathrin	5	
Dimethoate 400	Dimethoate	2	2
*Dipel	Bacillus thuringiensis (berliner), subsp. Kurstaki, strain SA-11	N/A	
Esteem	Pyriproxyfen	1	
Guthion 50WSP	Azinphos-methyl	2	2
Imidan 70WP	Phosmet	0.1	10
Intrepid	Methoxyfenozide	2	
Kelthane 50W	Dicofol	3	5
*Lannate 90SP	Methomyl	N/A	
Lorsban 50W	Chlorpyrifos	1	1
Pounce	Permethrin	5	3
Provado 1.6F	Imidacloprid	3	
Nexter (E. red mite rate)	Pyridaben	2	
Nexter (2 spot rate)	Pyridaben	2	
Savey	Hexythiazox	2	
Sevin 80S	Carbaryl	10	10

Sevin XLR	Carbaryl	10	10
Spintor	Spinosad	0.2	
Thiodan	Endosulfan	1	
Vendex 50WP	Fenbutatin-oxide	10	
Vydate 2L	Oxamyl	1	
Warrior	Landa-cyhalothrin	0.1	0.75
Calypso	Thiacloprid	5	
Pounce 25WP/Ambush	Permethrin	5	3
Thiodan 3EC	Endosulfan	1	
Zeal	Etoxazole	1	

Note: Trade names that have \* did not have chemical names in the MRL list.

#### ► **The Risk Avoidance and Mitigation Program (RAMP) Project**

The title of the RAMP project was “Reduced Risk Pest Management Systems for US Tart Cherry Production.” The main objective of the project was to develop an integrated pest management (IPM) system for cherry production in Michigan.

In the project, reduced risk insecticides were tested for ability to control tart cherry pests in a statewide on-farm trial. A total of nine sites were established for this study and are located in the three key tart cherry regions of Michigan. Two ten-acre blocks were established on each site. One block received reduced risk insect control strategies (RAMP block). Control decisions in the RAMP block were based on insect monitoring and scouting. A second ten-acre block was used as a comparison and was managed using each grower’s standard pest control strategies (COMP block).

Lists of the pesticides using in the RAMP experiments in tart cherry production from 2004 to 2006 were collected from the spray records of participating growers. Table 3 is the COMP experimental blocks compared with regulation and table 4 is the RAMP experimental blocks compared with regulation below.

**Table 3: COMP experimental blocks compared with regulation**

<i>Trade Name</i>	<i>Chemical Name</i>	<i>Japanese MRLs (ppm)</i>
*Asana XL	Esfenvalerate	N/A
Azinphosmethyl 50W Soluble	Azinphosmethyl	2
Bravo Ultrex	Chlorothalonil	0.5
Bravo Weather Stik	Chlorothalonil	0.5
Captan 50WP	Captan	5
Captec	Captan	5
Cyprex	Dodine	3
Echo 90 DF	Chlorothalonil	0.5
Elite 45DF	Tebuconazole	4
*Equus DF	Chlorothalamid	N/A
Ethrel	Ethephon	10
Flint	Trifloxystrobin	2
*GAA	Gibberlic Acid	N/A
*Glyphos X-Tra	Glyphosate	N/A
Guthion 50WSP	Azinsphosmethyl	2
Imidan 70WP	Phosmet	0.1
Indar 75 WSP	Fenbuconazole	1
Indar wetting agent	Fenbuconazole	1
Lorsban 50W	Chlorpyrifos	1
Syllit 65WP	Dodine	3
Nova 40W	Myclobutanil	4
Perm-Up 3.2EC	Permethrin	5
Pounce	Permethrin	5
Pristine	Pyraclostrobin/boscalid	2
*Pro-Gibb	Gibberellic acid	N/A
Provado 1.6	Imidacloprid	3
Roundup	Glyphosate, isopropylamine salt	0.2

*Sevin XLR	Carbaryl	N/A
*Solubor	Boron	N/A
*Sulfur	Sulfur	N/A
*Super Spread 7000	Alkyl Aryl Polyoxyethylene Glycols	N/A
*Topsin	Thiophanate-methyl	N/A
*Vangaurd WG	Cyprodinil	N/A
*Warrior	Lambda cyhalothrin	N/A
Ziram 76DF	Dithiocarbamate - Zinc Salt	7

Note: Trade names that have \* did not have chemical names in the MRL list.

**Table 4: RAMP experimental blocks compared with regulation**

<i>Trade Name</i>	<i>Chemical Name</i>	<i>Japanese MRLs (ppm)</i>
*Actara	Thimethoxam	N/A
Avaunt	Indoxacarb	2
Captan 80WDG	Captan	5
*Copper	Copper	N/A
*Cuprofix Disperss	Copper	N/A
*Cuprofix Ultra 40	Basic copper sulfate	N/A
Indar 75WSP	Fenbuconazole	1
*Lime	Lime	N/A
Syllit 65WP	Dodine	3

Note: Trade names that have \* did not have chemical names in the MRL list.