



**Rotterdam Convention on the Prior  
Informed Consent Procedure for  
Certain Hazardous Chemicals and  
Pesticides in International Trade**

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**Chemical Review Committee**  
**Sixth meeting**  
Geneva, 15–19 March 2010  
Item 6 of the provisional agenda\*  
**Other matters**

**Information on trade in chemicals under consideration by the  
Chemical Review Committee at its sixth meeting**

**Note by the Secretariat**

The annex to the present note contains information submitted by two observer organizations regarding trade in chemicals under consideration by the Chemical Review Committee at its sixth meeting. The annex has not been formally edited by the Secretariat.

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\* UNEP/FAO/RC/CRC.6/1.

## **Annex**

- (a) **Information submitted by CropLife International**
- (b) **Information submitted by Pesticide Action Network UK**



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January 19, 2010

Secretariat for the Rotterdam Convention  
Plant Protection Service  
Plant Production and Protection Service  
FAO  
Viale delle Terme di Caracalla  
00100 Rome, Italy

Gentlemen;

Subject: On-going Trade for Amitraz, Azinphos-methyl, Endosulfan and Methyl Bromide

On behalf of CropLife International I am pleased to provide a response to the Secretariat's query as to whether there is continuing international trade in the four subject chemicals.

Based on comments from manufacturers and import/export statistics, we can confirm there is international trade for all four chemicals.

Sincerely,

A handwritten signature in cursive script that reads "Michael A. Morelli".

Michael A. Morelli, Ph.D.  
Chair, PIC Project Team  
CropLife International

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**PESTICIDE  
ACTION  
NETWORK UK**

An independent body working to  
eliminate the hazards of pesticides

Peter Kenmore  
Food and Agriculture Organization of the United Nations (FAO)  
Viale delle Terme di Caracalla  
00100 Rome, Italy

14 January 2010

**PIC Procedure – determination of ongoing trade**

Dear Peter

Further to your letter of 17 December 2009, here is the relevant information on the chemicals scheduled for review at the PIC Chemical Review Committee (CRC6) in March 2010. This information has been gathered from PAN Groups around the world.

Yours sincerely

Linda Craig  
Director  
PAN UK

## **Amitraz**

In the USA, Amitraz continues to be used for mite, tick, and lice management in livestock and in flea and tick collars for dogs.<sup>i</sup> The National Pesticide Information Retrieval System lists the following products:<sup>ii</sup>

- PREVENTIC TICK COLLAR FOR DOGS (Virbac AH, Inc.)
- TAKTIC E.C. (Intervet, Inc.)
- PROMERIS SPOT ON FOR DOGS (Fort Dodge Animal Health)
- Amitraz Solid (Fort Dodge Animal Health)
- Amitraz Insecticide (Arysta)

The last two are registrations for the technical (i.e. manufacture use) product.

In New Zealand, Amitraz is registered, since 2003, under the trade name *Apivar* by the Registrant Veto-Pharma (France) for use in beehives to control varroa mite on honeybees. *Apivar* contains 33g/kg amitraz in the form of an impregnated plastic strip (500mg amitraz per strip). The strips are suspended in the honeybee brood chamber.

Amitraz is registered in Argentina, Bolivia, Colombia, Cuba, Ecuador, Mexico, Paraguay, Peru, and Uruguay.<sup>iii</sup>

## **Azinphos-methyl**

Sold and marketed in many countries, under several names<sup>iv</sup>. Examples include:

- Sold by Farnoz of Australia, as Gusathion (MSDS dated 2007) and Cotnion (MSDS dated 2006)
- Manufactured by Bayer Crop Science Chile (Gusathion)

In the USA: Azinphos-methyl (AZM) is being phased out in the U.S. Currently, AZM is only permitted for use on alkali bee beds, apples, blueberries, cherries, parsley, and pears, and these uses will be prohibited after September 30, 2012. All previous uses have been cancelled.<sup>v</sup>

Availability: According to the National Pesticide Information Retrieval System, the following AZM products have active registrations in the U.S.:<sup>vi</sup>

- GOWAN AZINPHOS-M 50 WSB (Gowan)
- COTNION-METHYL AZINPHOS METHYL 50W (Makhteshim Agan)
- GUTHION SOLUPAK 50% WETTABLE POWDER INSECTICIDE (Makhteshim Agan)
- AZINPHOSMETHYL 50W (Arysta)

Gowan and Makhteshim Agan are also listed as registrants of technical AZM (i.e. relatively pure AZM for use in formulating end-use products).

Neither Gowan nor Arysta advertise AZM products on their U.S. websites;<sup>vii</sup> meanwhile Makhteshim Agan claims that AZM is “exclusive” to Makhteshim Agan and offers Guthion solupak on its website.<sup>viii</sup>

Phaseout: The IRED determined that AZM posed unacceptably large risks to agricultural workers and to the environment, and U.S. EPA proposed a phase out of all uses. The Agency also proposed a number of mitigation measures intended to protect workers and the environment during the phaseout. These included increased restricted entry intervals and pre-harvest intervals, a requirement that applicators be in enclosed cabs or wear maximum personal protective equipment during applications, and no-spray zones around water bodies.

U.S. EPA initially proposed cancelling 28 uses immediately, phasing out 7 uses after four years, and granting 8 uses “time limited registration”—essentially a phaseout without a definite end date. After negotiations with manufacturers and growers, finalizing the interim RED, and settling a lawsuit brought by public interest groups, the Agency established a final phaseout plan. This phaseout provided that the 6 uses listed in the first paragraph could continue into 2012; phased out use on almonds, pistachios, and walnuts in 2009; and phased out use on Brussels sprouts and nursery stock in 2008. All other uses had previously been cancelled. The plan also mandates no spray zones around homes and occupied structures to protect bystanders, and ratchets down the maximum allowable application rates over the course of the phaseout.

Current Use: California is the one U.S. state that compiles and makes available comprehensive pesticide use data. Data from 1991 to 2008 are available. Over that period, AZM use peaked in 1992 at 520,000 lbs (summed over all uses). While there are fluctuations in annual use, the general trend over this period has been a steady decline. In 2008, only 16,212 lbs were used. Consistent with the phaseout schedule described above, its use in 2008 was limited to almond, apple, cherry, pear, pistachio and walnut. A small amount (29 lbs) was used for research and for onion.ix

New Zealand: Azinphos methyl has been recently reassessed by the Environmental Risk Management Authority of New Zealand (ERMANZ), and as a result is being phased out. The only registered product is Cotnion 200 Insecticide, for restricted use on summerfruit, potatoes and strawberry runners until 2015.

Approximately 7 to 8000 litres is used in New Zealand per annum, mainly on potatoes and strawberry runner plants with a small quantity being used on summerfruit.<sup>x</sup>

On November 5, 2009, ERMENZ stated that it:

(a) declines the further importation, manufacture or use of azinphos methyl and formulations containing azinphos methyl under the following approvals:

- (i) azinphos methyl (Approval Number HSR002815);
- (ii) Suspension concentrate containing 350g/litre azinphos methyl (Approval Number HSR000160);
- (ii) Wettable powder containing 350g/kg azinphos methyl (Approval Number HSR000161);
- (iii) Cotnion 200 Insecticide (Approval Number HSR002486) except as provided in

(b) below; and revokes the approvals; and

(b) subject to paragraphs 1.2 to 1.4 below, approves the importation, manufacture, and/or use of Cotnion 200 Insecticide (Approval Number HSR002486) until the expiry of 31 December 2014 for use on:

potato crops;  
summerfruit crops; and  
strawberry runner plants.

Controls on these uses include:

- (i) Restricted entry interval for contact re-entry potato, summerfruit and strawberry runner plants – 0-7 days - full PPE;
- (ii) Restricted entry interval for contact re-entry potato, summerfruit and strawberry runner plants – 8-14 days - reduced PPE;
- (iii) Restricted entry interval for non contact re-entry potato – no PPE requirements;  
Restricted entry interval for non contact re-entry summerfruit and strawberry runner plants – 0-3 days - reduced PPE.

Summer fruit: Applicators must use a closed cab with appropriate filtering system and have the above RPE (respiratory protective equipment) and PPE (personal protective equipment)

immediately available for use if leaving the cab in the treated area, and a system for storing the used RPE and PPE to prevent contamination of the cab. At least long-sleeved shirt and long-legged trousers, footwear plus socks should be worn in the functioning enclosed cab.

Potato and strawberry: PPE to be worn during mixing/loading and application should comprise at least:

Coveralls over long-sleeved shirt, long-legged trousers.

Chemical resistant gloves.

Chemical resistant footwear plus socks.

Protective eyewear.

For exposure in enclosed areas, a respirator with either an organic vapour-removing cartridge with a prefilter approved for pesticides, or a canister approved for pesticides.

For exposure outdoors, dust/mist filtering respirator.

Summerfruit: Buffer zone upwind of public areas or the nearest farm buildings or dwellings to exceed 50 m. Buffer zone areas may not include employee housing, private property and other areas people may occupy. Definition of public areas: any place where members of the public can legally be.

Summerfruit, potato & strawberry: Buffer zones upwind of waterways to exceed 50 m. Definition of a waterway: waterways including modified water courses such as reservoirs, irrigation canals, water-supply races, canals for the supply of water for electricity generation or farm drainage canals, as well as natural water bodies.

Limited to 2 applications per year.

Cotnion 200 Insecticide (Approval Number HSR002486) must not be applied by aerial application and must not be available for use or used for domestic use from the date that this decision comes into effect.

By 1 January 2015, all then existing stocks of the substance must be used or disposed of in accordance with the storage and disposal controls set out in Appendix 2.

This decision will come into effect 28 days after publication of the direction in the New Zealand Gazette. It has been used in New Zealand since 1965, although from 2003 to 2006 no azinphos methyl products were marketed.

ERMANZ concluded that the use of alternative products is preferable to the continued use of azinphos methyl, but for crops where there are no registered alternatives available a five year phase out period that allows time for alternatives to be registered is recommended. It also recommended that during this phase out period additional controls designed to better manage the risks should be applied.

In relation to human health effects, the Agency noted in the application that potentially significant risks to human health might arise for the following people: operators; re-entry workers; and bystanders.

ERMA notes that the human health assessment has identified risks in terms of toxicity. Modelling data indicates that risk mitigation measures (such as PPE) for operators will not reduce these risks to an acceptable level due to dermal exposure and the same applies for re-entry workers not wearing PPE. The Committee further notes the risks to bystanders particularly children exposed to surfaces contaminated with spray drift<sup>xi</sup>.

## **Endosulfan**

Endosulfan is registered in Argentina, Bolivia, Brasil, Cuba, Ecuador, Chile, México, Perú, Paraguay, Honduras, Uruguay (see sources at note iii)

It is marketed in India by (for example) Hindustani Insecticides Ltd and Excel Crop Care.<sup>xii</sup>

It is in use in the USA, although relative to other insecticides, its use is small, and it is use is on the decline. U.S. EPA has determined that there are affordable and effective alternative chemicals for all uses of endosulfan, and that costs to growers of switching to alternatives would be minor. U.S. EPA also identified a number of non-chemical (e.g. cultural and biological) alternatives to endosulfan for certain crops, though the Agency's review of these methods was not comprehensive, nor did it estimate the economic costs or savings associated with implementing these methods. Tomatoes—specifically, those grown in Florida—are the one crop where use of endosulfan is increasing, but EPA has documented that a variety of alternatives are currently available, and employing them in lieu of endosulfan would result in negligible losses to the industry.

Currently, only Drexel and Makhteshim Agan in the USA are actively marketing crop protection products containing endosulfan.<sup>xviii</sup> These products are:

- Thionex 3EC (Makhteshim Agan)<sup>xiii</sup>
- Thionex 50W (Makhteshim Agan)<sup>xiii</sup>
- Endosulfan 3EC (Drexel)<sup>xiv</sup>

U.S. EPA last provided an estimate of total national use in 2002 when it calculated that, on average, 1.38 million lbs of endosulfan were used annually between 1987–97.<sup>xxii</sup> That same period, on average, 736 million lbs of conventional<sup>1</sup> pesticide active ingredient were used American agriculture each year.<sup>xv</sup> Thus, endosulfan represents less than 0.2% of the total amount of pesticide active ingredient applied each year. Furthermore, endosulfan is not included on any of the annual lists of most commonly used 25 conventional pesticides compiled by U.S. EPA.<sup>xv</sup>

U.S. EPA has not since updated its estimate of total endosulfan use, but it has released estimates of recent use for the on crops which endosulfan is most frequently used. This data is summarized in the table below. Comparing average annual use during the period 1990–99 to later use, it can be seen that usage has dropped for almost all crops, often dramatically. The only crop exhibiting a significant increase in use (in terms of lbs applied/year) is tomatoes, with 55,000 lbs/year for 1990–99 versus 106,500 for 2002–07, but this increase is more than offset by large decreases in its use on apples, cotton, and potatoes. Thus it can be concluded that use in the U.S is declining.

Similarly, in California—a state with one of the highest agricultural outputs and pesticide use in the U.S.—the use of endosulfan has been steadily declining. In 1992, 338,480 lbs were used in the state; in 1997, 238,034 lbs; in 2002 some 140,836 lbs; and in 2007, there were just 52,392 lbs applied.<sup>xvi</sup> In 2002, endosulfan ranked 89<sup>th</sup> on state's list of 100 most applied pesticides, in 2003 it was 91<sup>st</sup>, in 2004 it was 84<sup>th</sup>, and since then it has not ranked in the top 100.<sup>xvii</sup>

Paralleling the trend in decreasing usage is a downward trend in the number of registrants. In 2002, there were six companies manufacturing endosulfan products for the U.S. market: Bayer, Makhteshim-Agan, FMC, Gowan, Platte, and Drexel.<sup>xxii</sup> By 2007, only Bayer, Makhteshim-Agan, and Drexel remained, and in July of that year, Bayer cancelled all of its products.<sup>xviii</sup>

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<sup>1</sup> “Conventional pesticide” does not include sulfur or petroleum distillates.



All endosulfan products registered in the U.S. are restricted use, meaning they can only be applied by registered pesticide applicators. There are no endosulfan products registered for residential, home & garden, or public health use.<sup>xxii</sup> Currently, endosulfan is registered for use on the following food crops: almonds, apples, apricots, beans (dry only), blueberries, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, celery, cherries, collards, cucumbers, eggplant, filberts, kale, kohlrabi, lettuce, macadamia nuts, melons, mustard greens, nectarines, peaches, pears, peas (dry only), peppers, pineapple, plums, potatoes, pumpkins, squash, strawberries, sweet corn (fresh only), sweet potatoes, tomatoes, and walnuts. In addition, products are registered for the following non-food uses: alfalfa (seed only), Chinese cabbage (seed only), citrus (non-bearing, and nursery stock), cotton, certain ornamental trees and shrubs (grown in nurseries), radish (seed only), rutabaga (seed only), tobacco, and turnip (seed only).<sup>xix</sup> Finally, in 2006, an endosulfan-containing ear tag for dairy and beef cattle was approved.<sup>xx</sup>

The table below summarizes endosulfan usage data from EPA for those crops that the Agency has reviewed at least twice in the last 10 years. Not included in the above table are crops with relatively little usage. Data for these crops is provided in EPA's 2002 RED (Ref xxii), but EPA has not since updated its usage estimates. For many of these crops, EPA indicated in 2009 that "since publishing the 2007 usage analysis, the Agency has not received any comments suggesting that the use of endosulfan is important."<sup>xxi</sup> These crops are: alfalfa grown for seed, almonds, barley, beans, carrots, collards, grapes, grapefruit, hazelnuts, macadamia nuts, mustard greens, oats/rye, oranges, peas, pecans, pineapple, plums and prunes, roots/tubers, spinach, sweet potatoes, other leafy vegetables, and walnuts. For most of these, EPA's 2002 estimates indicate that endosulfan was used on less than 5% of the total crop planted. The exceptions are collards (6% of acres treated), hazelnuts (7%), macadamia nuts (7%), pecans (11%), and sweet potatoes (31%). In addition, the RED reports 50,000 lbs used in horticultural nurseries.<sup>xxii</sup> EPA's 2007 assessment also reports an unspecified but "low" amount of usage on onions, a crop which endosulfan is not labeled for use on. This must represent illegal use or a temporary, emergency use granted under FIFRA Section 18.

Since EPA's 2002 RED, the use of endosulfan on grapes, green beans, green peas, pecans, and spinach was cancelled, while the use of endosulfan in cattle ear tags was provisionally approved in 2006. We are not aware of any data on the amount of endosulfan used in this new application.

Crop	Year	% Crop Treated	Lbs applied/year	Source	EPA characterization of benefits to producers
Apples	1990-99	13	110,000	EPA 2002 <sup>xxii</sup>	"low"
	2002-07	11.9	58,700	EPA 2007 <sup>xxiii</sup>	
	2001-07	10.3	52,900	EPA 2009a <sup>xxiv</sup>	
Blueberry	1990-99	2	1000	EPA 2002 <sup>xxii</sup>	"low"
	2002-07	1.4	300	EPA 2007	
Broccoli	1990-99	13	16,000	EPA 2002 <sup>xxii</sup>	"low"
	2002-07	2.3	2,400	EPA 2007	
Brussels sprouts	1990-99	2	<1000	EPA 2002 <sup>xxii</sup>	"low"
	2002-07	1.2	<100	EPA 2007	
Cabbage	1990-99	14	18,000	EPA 2002 <sup>xxii</sup>	"low"
	2002-07	7.9	7,800	EPA 2007	
Cauliflower	1990-99	9	4,000	EPA 2002 <sup>xxii</sup>	"low"
	2002-07	4.8	2,700	EPA 2007	
Celery	1990-99	6	2,000	EPA 2002 <sup>xxii</sup>	

<b>Cherries</b>	2002–07	3.0	700	EPA 2007	“low”
	1990–99	3	5,000	EPA 2002 <sup>xxii</sup>	
<b>Cotton</b>	2002–07	7.2	7,500	EPA 2007	“low”
	1990–99	2	286,000	EPA 2002 <sup>xxii</sup>	
<b>Cucumber</b>	2002–07	1.1	258,900	EPA 2007	“moderate”
	2001–08	<1	106,000	EPA 2009 <sup>xxv</sup>	
	1990–99	8	27,000	EPA 2002 <sup>xxii</sup>	
<b>Eggplant</b>	2002–07	29.2	26,100	EPA 2007	“moderate”
	2003–07	28	24,700	EPA 2009 <sup>c,xxvi</sup>	
	1990–99	41	3,000	EPA 2002 <sup>xxii</sup>	
<b>Lettuce</b>	2002–07	25.4	1,300	EPA 2007	“moderate”
	1990–99	14	58,000	EPA 2002 <sup>xxii</sup>	
<b>Melon<sup>2</sup></b>	2002–07	8.0	23,900	EPA 2007	“moderate”
	1990–99	12–19	46,000	EPA 2002 <sup>xxii</sup>	
	2002–07	13.3	35,500	EPA 2007	“low to moderate”
<b>Nectarine<sup>3</sup></b>	2000–06	21.5	37,100	EPA 2009 <sup>d,xxvii</sup>	
	1990–99	2	2,000	EPA 2002 <sup>xxii</sup>	“low”
<b>Peach</b>	2002–07	0.2	200	EPA 2007	
	1990–99	7	29,000	EPA 2002 <sup>xxii</sup>	
<b>Pear</b>	2002–07	5.1	14,600	EPA 2007	“low”
	1990–99	20	35,000	EPA 2002 <sup>xxii</sup>	
<b>Pepper</b>	2002–07	35.7	45,400	EPA 2007	“low”
	1990–99	12	14,000	EPA 2002 <sup>xxii</sup>	
<b>Potato</b>	2002–07	8.9	3,700	EPA 2007	“low”
	1990–99	10	120,000	EPA 2002 <sup>xxii</sup>	
<b>Pumpkin<sup>4</sup></b>	2002–07	7.8	84,500	EPA 2007	“low”
	2001–07	4	30,000	EPA 2009 <sup>e,xxviii</sup>	
	1990–99	20	11,000	EPA 2002 <sup>xxii</sup>	
	2002–07	12.2	5,700	EPA 2007	“moderate to high”
<b>Squash</b>	2000–06	24.2	6,600	EPA 2009 <sup>f,xxix</sup>	
	1990–99	40	44,000	EPA 2002 <sup>xxii</sup>	
	2002–07	27.8	31,400	EPA 2007	“may” be “high”
<b>Strawberry</b>	2002–06	28	28,133	EPA 2009 <sup>g,xxx</sup>	
	1990–99	14	9,000	EPA 2002 <sup>xxii</sup>	
<b>Sweet Corn</b>	2002–07	5.3	3,900	EPA 2007	“moderate”
	1990–99	<1	4,000	EPA 2002 <sup>xxii</sup>	
<b>Tobacco</b>	2002–07	1.9	6,000	EPA 2007	“low”
	1990–99	8	63,000	EPA 2002 <sup>xxii</sup>	
<b>Tomato</b>	2002–07	7.9	27,300	EPA 2007	“moderate”
	1990–99	6	55,000	EPA 2002 <sup>xxii</sup>	
	2002–07	3.7	106,500	EPA 2007	“moderate to high”
	2003–07	n/a	n/a	EPA 2009 <sup>h,xxxi</sup>	

In 2009, EPA released crop specific analyses of endosulfan use for the eight crops on which endosulfan use is most prevalent. With regard to these crops:

<sup>2</sup> 2000–06 data is calculated from Ref xxvii, and includes data only for watermelons grown in Florida, Texas, and Arizona for cantaloupe grown in California and Arizona, which are the major production area for these crops. Data is from even numbered years only.

<sup>3</sup> 1990–99 data includes use on apricots in addition to use on nectarines

<sup>4</sup> 2000–06 data is calculated from Ref xxix, and includes data only for pumpkins grown in Pennsylvania, Ohio, and Michigan. These three states account for about a third of US pumpkin production by quantity, but half by value.

- EPA determined that switching to alternatives would have “little impact” on potato production costs.<sup>xxviii</sup>
- EPA concluded that banning would result in “minimal impacts . . . not likely to exceed 1% of operating revenue” for cotton growers. Furthermore, the Agency “believes that endosulfan’s current role in resistance management is minimal and that the loss of endosulfan will not result in adverse resistance management outcomes.”<sup>xxv</sup>
- For apple growers in the Pacific Northwest, EPA concluded that “use of alternatives should not increase costs although there may be regulatory issues that make the alternative less desirable.” For other apple growers, EPA acknowledged that “[e]ffective chemical alternatives are available” but noted that those alternatives “are somewhat more costly and managerially complex.”<sup>xxiv</sup>
- For cucumbers growers, EPA determined that the impacts of moving to alternatives would be “generally minor,” and that “[equally e]fficacious and affordable alternatives exist” for niche use in Florida against whiteflies.<sup>xxvi</sup>
- For watermelons and cantaloupe producers, EPA found that “[t]here are alternatives to endosulfan, which according to published efficacy data, can control the pest spectrum as well as endosulfan.”<sup>xxvii</sup>
- For pumpkin growers, EPA concluded that “[t]here are at least two alternatives which control the same pest spectrum as endosulfan but have slightly higher costs per acre.”<sup>xxix</sup>
- EPA concluded that “the overall benefits of endosulfan on squash are generally minor,” and “available data indicates that efficacious and affordable alternatives exist” for the niche use on squash in Florida against whiteflies.<sup>xxx</sup>
- According to EPA, “[e]ffective chemical alternatives are available, although some are more expensive[,]” for fresh tomato producers.<sup>xxxi</sup>

EPA’s quantitative estimates of economic impacts on growers from cancellation of endosulfan indicate that, in most cases, impacts on net operating revenue are less than 5%. For the three crops with the highest use of endosulfan in term of total pounds active ingredient—tomatoes,<sup>xxxi</sup> potatoes,<sup>xxviii</sup> and cotton<sup>xxv</sup>—EPA’s analysis concludes that the impacts would be less than 1% of net operating revenue.

## **Methyl Bromide**

The U.S. continues to use large quantities of methyl bromide. According to the U.S. EPA:<sup>xxxii</sup> U.S.: In 2007, 5,482 metric tons of methyl bromide were applied (4,269 metric tons from newly-produced material and 1,213 metric tons from pre-2005 stocks). This amount does not include quarantine and preshipment (QPS) exemption usage. QPS production is tracked by the Agency but usage is not. EPA’s Office of Air and Radiation (OAR) reports that as of January 1, 2008, there were 6,458 metric tons of pre-2005 methyl bromide stocks.

These figures closely match the amount of methyl bromide allowed under the Critical Use Exemption to the methyl bromide phaseout for 2007: 4,316 metric tons of newly produced methyl bromide and 1,914 tons from stocks.<sup>xxxiii</sup>

EPA has not released figures for the actually use of methyl bromide in subsequent years, but it has announced the quantities available under the Critical Use Exemption. These are:<sup>xxxiv</sup>

Year	Amount available from import and new production (metric tons)	Amount released from stocks (metric tons)
2008	3,085	1,730
2009	2,276	1,919
2010	2,276	690

Information about the U.S.'s Critical Use Exemption request to the Montreal Protocol for 2011 is available at <http://www.epa.gov/ozone/mbr/cueinfo.html>.

The U.S. currently maintains critical use exemptions.<sup>xxxv</sup>

- Preplant use on cucurbits, eggplant, forest and orchard nursery seedlings, strawberries, orchard replant, ornamentals, peppers, sweet potatoes, tomatoes;
- and post-harvest use by certain rice millers, pet food manufactures, bakeries, millers, pest control operators “treating processed food, cheese, herbs and spices, and spaces and equipment in associated processing and storage facilities”;
- and post-harvest use on stored walnuts, beans, dried plums, figs, raisins, dates, and dried cured pork products.

These uses are generally limited to certain states or parts of states and to moderate or severe infestations of specific pests.

Tomatoes, Strawberries, and peppers are the uses with the biggest allowances for methyl bromide use.

In the U.S. there are over 100 different products containing methyl bromide. Many of these products also contain chloropicrin.<sup>xxxvi</sup> According to the U.S. EPA, the registrants for technical methyl bromide are “Albemarle Corporation [now renamed ICL-IP America Inc.], Great Lakes Chemical Corporation (a Chemtura Company), and TriCal. All four companies are members of the Methyl Bromide Industry Panel of the American Chemistry Council (MBIP).”<sup>xxxvii</sup> Brand names include: Ameribrom, Brom-76, Brom-o-gas, Brom-o-sol, Terr-o-gas, M b c soil fumigant, Metabrom, Meth-o-gas, Pic-brom, Bro-mean, Tri-con, and Tri-plan.<sup>xxxvi</sup>

In New Zealand, methyl bromide use is currently being reassessed, with ERMNZ proposing a 10-year phase-out period.

The primary uses of methyl bromide are fumigation for quarantine and pre-shipment purposes, of:

- (i) logs in ships' holds;
- (ii) logs onshore;
- (ii) stacks of cut timber;
- (ii) shipping containers containing imported goods; and
- (iv) commodities at transitional facilities and quarantine treatment centres.

In the past, a critical use of methyl bromide in New Zealand was as a soil fumigant for strawberry and strawberry runner growing. This CUE exemption expired on 31 December 2007. However, growers who imported methyl bromide prior to 31 December 2007 are still legally able to use it to fumigate strawberry beds until their stocks are exhausted. It is estimated that the current stocks might last through the 2010 growing season.

In 2008, New Zealand imported 306 tonnes of methyl bromide <sup>xxxvii</sup>.

<sup>i</sup> U.S. EPA “Amitraz Risk Assessment Overview.” 2004.

<http://www.regulations.gov/search/Regs/home.html#documentDetail?R=09000064800b8dd5>

<sup>ii</sup> National Pesticide Information Retrieval System, Perdue University. “Pesticide Product Information System” <http://ppis.ceris.purdue.edu/htbin/ppismenu.com> queried January 11, 2010.

<sup>iii</sup> **Sources:** Argentina: [www.asaprove.org.ar/agroquimicos.php?pg=1](http://www.asaprove.org.ar/agroquimicos.php?pg=1)

Bolivia: Government registration (2002) [http://www.rap-al.org/db\\_files/PlaguiAL\\_InfoPa\\_Bolivia\\_PlaguiRegistSENASAG\\_SEP02.pdf](http://www.rap-al.org/db_files/PlaguiAL_InfoPa_Bolivia_PlaguiRegistSENASAG_SEP02.pdf)

Colombia: Government registration 2006: [http://www.rap-al.org/db\\_files/PlaguiAL\\_InfoPa\\_Colombia\\_Registro\\_mayo06.xls](http://www.rap-al.org/db_files/PlaguiAL_InfoPa_Colombia_Registro_mayo06.xls)

Cuba: Government registration 2003-2004 [http://www.rap-al.org/db\\_files/PlaguiAL\\_InfoPa\\_Cuba\\_PlaguicidasAutorizados\\_2004.pdf](http://www.rap-al.org/db_files/PlaguiAL_InfoPa_Cuba_PlaguicidasAutorizados_2004.pdf)

Chile: Government registration 2007 [http://www.rap-al.org/db\\_files/PlaguiAL\\_InfoPa\\_Chile\\_PlaguiAutorizaSAG\\_en07.XLS](http://www.rap-al.org/db_files/PlaguiAL_InfoPa_Chile_PlaguiAutorizaSAG_en07.XLS)

Ecuador: Government registration 2003 [http://www.rap-al.org/db\\_files/PlaguiAL\\_InfoPa\\_Ecuador\\_PlaguiRegisSESA\\_Ene03.xls](http://www.rap-al.org/db_files/PlaguiAL_InfoPa_Ecuador_PlaguiRegisSESA_Ene03.xls)

Honduras: Pesticidas imports January-July 2006 [http://www.rap-al.org/db\\_files/PlaguiAL\\_InfoPa\\_Honduras\\_Plagui\\_Import\\_EnJul06.xls](http://www.rap-al.org/db_files/PlaguiAL_InfoPa_Honduras_Plagui_Import_EnJul06.xls)

México, Pesticidas register 2006

<http://www.cofepris.gob.mx/cis/tramites/infpynv/InfRegPlagNutVeg.htm>

Paraguay: Pesticide Register 2006

[http://www.senave.gov.py/listado\\_de\\_productos\\_fitosanitarios\\_fertilizantes\\_afines\\_registrados.php?pageNum\\_productos=0&totalRows\\_productos=4042](http://www.senave.gov.py/listado_de_productos_fitosanitarios_fertilizantes_afines_registrados.php?pageNum_productos=0&totalRows_productos=4042)

Perú: Pesticide Register 2000

[http://www.senasa.gob.pe/importador\\_exportador/servicios/plaguicidas/listado\\_plaguicidas\\_registrados.pdf](http://www.senasa.gob.pe/importador_exportador/servicios/plaguicidas/listado_plaguicidas_registrados.pdf)

<sup>iv</sup> [http://www.farmoz.com.au/MSDS/FARMOZ/Gusathion\\_200SC\\_MSDS.pdf](http://www.farmoz.com.au/MSDS/FARMOZ/Gusathion_200SC_MSDS.pdf)

[http://www.farmoz.com.au/msds/farmoz/COTNION\\_16103852.pdf](http://www.farmoz.com.au/msds/farmoz/COTNION_16103852.pdf)

<http://www.bayercropscience.cl/soluciones/fichaproducto.asp?id=5>

<sup>v</sup> U.S. EPA. “Azinphos-methyl Phaseout.”

[http://www.epa.gov/pesticides/reregistration/azm/phaseout\\_fs.htm](http://www.epa.gov/pesticides/reregistration/azm/phaseout_fs.htm) Last updated July 2009.

<sup>vi</sup> National Pesticide Information Retrieval System, Perdue University. “Pesticide Product Information System Database.” <http://ppis.ceris.purdue.edu> Queried January 11, 2010.

<sup>vii</sup> Gowan Product Information <http://www.gowanco.com/products.aspx> , accessed January 11, 2010.

Arysta Product List: [http://www.arystalifescience.com/default.asp?V\\_DOC\\_ID=798](http://www.arystalifescience.com/default.asp?V_DOC_ID=798) , accessed January 11, 2010.

<sup>viii</sup> Makhteshim Agan website, [http://www.manainc.com/products/list\\_insecticides.cfm](http://www.manainc.com/products/list_insecticides.cfm) , Accessed January 11, 2010.

<sup>ix</sup> (a) Pesticideinfo.org, PAN Pesticides Database. “California Pesticide Use.”

[http://pesticideinfo.org/Search\\_Use.jsp](http://pesticideinfo.org/Search_Use.jsp). Queried January 11, 2010. (b) California Department of Pesticide Regulation, “Summary of Pesticide Use Report Data 2008 Indexed by Chemical.” November 2009. <http://www.cdpr.ca.gov/docs/pur/pur08rep/chmrpt08.pdf>

<sup>x</sup> <http://www.ermanz.govt.nz/appfiles/execsumm/word/HRC07002-002.doc>.

<sup>xi</sup> [http://www.ermanz.govt.nz/BertDocs/HRC07002%20Decision%20%20Final%20\(200911%2005\).pdf](http://www.ermanz.govt.nz/BertDocs/HRC07002%20Decision%20%20Final%20(200911%2005).pdf)

<sup>xii</sup> <http://www.hil.gov.in/ENDOSULFAN.html>,

<http://www.excelcropcare.com/ProductDetails.asp?name=1>

<sup>xiii</sup> [http://www.manainc.com/products/list\\_insecticides.cfm](http://www.manainc.com/products/list_insecticides.cfm)

<sup>xiv</sup> <http://www.drexchem.com/ProductInfo/ProductList/tabid/90/Default.aspx>

<sup>xv</sup> U.S. EPA, “Pesticide Industry Sales and Usage” <http://www.epa.gov/oppbead1/pestsales/>

<sup>xvi</sup> Pesticideinfo.org, “Pesticide Use in California: Endosulfan”

[http://pesticideinfo.org/List\\_CA\\_Chem\\_Use.jsp?chk=259&cok=00&sk=00](http://pesticideinfo.org/List_CA_Chem_Use.jsp?chk=259&cok=00&sk=00)

<sup>xvii</sup> California Department of Pesticide Regulation, “Pesticide Use Reporting (PUR)”,

<http://www.cdpr.ca.gov/docs/pur/purmain.htm>

<sup>xviii</sup> U.S. EPA, “Note to Reader. Endosulfan: Request for Additional Information on Usage and Availability of Alternatives,” Document ID No. EPA-HQ-OPP-2002-0262-0057, November 16, 2007.

<sup>xix</sup> Based on a review of the labels of currently registered endosulfan products, viewed on December 14<sup>th</sup>, 2009, at <http://www.cdms.net/LabelsMsds/LMDefault.aspx>

<sup>xx</sup> Pesticideinfo.org “Product Name: Endalfly insecticide cattle ear tag,”

[http://pesticideinfo.org/Detail\\_Product.jsp?REG\\_NR=06148300065&DIST\\_NR=061483](http://pesticideinfo.org/Detail_Product.jsp?REG_NR=06148300065&DIST_NR=061483)

<sup>xxi</sup> U.S. EPA, “Note to Reader. Endosulfan: Request for Comment on Impact Assessments and Importance of Endosulfan Use,” Document ID No. EPA-HQ-OPP-2002-0262-0118, April, 27, 2009.

<sup>xxii</sup> U.S. EPA, “Reregistration Eligibility Decision for Endosulfan,” November 2002.

[http://www.epa.gov/oppsrrd1/reregistration/REDs/endosulfan\\_red.pdf](http://www.epa.gov/oppsrrd1/reregistration/REDs/endosulfan_red.pdf)

<sup>xxiii</sup> U.S. EPA, “Benefits of Endosulfan in Agricultural Production: Analysis of Usage Information,” Document ID No. EPA-HQ-OPP-2002-0262-0062, Oct 30, 2007.

<sup>xxiv</sup>

U.S. EPA, “Assessment of the Impacts of Extending the Restricted Entry for the Use of Endosulfan on Apples (DP# 358333),” Document ID No. EPA-HQ-OPP-2002-0262-0113, April 17, 2009.

<sup>xxv</sup>

U.S. EPA, “Assessment of the Impacts of Extending the Restricted Entry Intervals and Eliminating Aerial Spraying for Endosulfan on Cotton (DP# 358333),” Document ID No. EPA-HQ-OPP-2002-0262-0112, April 16, 2009.

<sup>xxvi</sup> U.S. EPA, “Assessment of the Impact on Producers of Extending the Restricted Entry Intervals for Endosulfan on Cucumber (DP# 358333),” Document ID No. EPA-HQ-OPP-2002-0262-0114, April 17, 2009.

<sup>xxvii</sup> U.S. EPA, “Assessment of the Impact on Producers of Melons of Extending the REI for Endosulfan (DP# 358333),” Document ID No. EPA-HQ-OPP-2002-0262-0115, April 17, 2009.

<sup>xxviii</sup>

U.S. EPA, “Assessment of the Impacts of Extending the Restricted Entry Intervals for Endosulfan on Potato (DP# 358333),” Document ID No. EPA-HQ-OPP-2002-0262-0111, March 16, 2009.

<sup>xxix</sup>

U.S. EPA, “Assessment of Benefits of Endosulfan to Producers of Pumpkins (DP# 358333),” Document ID No. EPA-HQ-OPP-2002-0262-0116, April 17, 2009.

<sup>xxx</sup> U.S. EPA, “Assessment of the Impacts of Extending the Restricted Entry for Endosulfan on Squash (DP# 358333),” Document ID No. EPA-HQ-OPP-2002-0262-0117, April 17, 2009.

<sup>xxxi</sup> U.S. EPA, “Quantitative Impact Assessment for the use of Endosulfan on Fresh and Processed Tomatoes (DP# 358333),” Document ID No. EPA-HQ-OPP-2002-0262-0119, April 17, 2009.

<sup>xxxii</sup> U.S. EPA, “Amended Reregistration Eligibility Decision for Methyl Bromide (soil and non-food structural uses).” May 2009.

<http://www.regulations.gov/search/Regs/home.html#documentDetail?D=EPA-HQ-OPP-2005-0123-0716>

<sup>xxxiii</sup> U.S. EPA “Fact Sheet - The 2007 Critical Use Exemption From the Phaseout of Methyl Bromide.” <http://www.epa.gov/ozone/mbr/factsheet2007.html>

<sup>xxxiv</sup> (a) U.S. EPA “Fact Sheet - The 2008 Critical Use Exemption From the Phaseout of Methyl Bromide.” <http://www.epa.gov/ozone/mbr/factsheet2008.html>. (b) U.S. EPA “Fact Sheet - The 2009 Critical Use Exemption From the Phaseout of Methyl Bromide.” <http://www.epa.gov/ozone/mbr/factsheet2009.html> (c) U.S. EPA “Fact Sheet - The 2010 Critical Use Exemption From the Phaseout of Methyl Bromide.” <http://www.epa.gov/ozone/mbr/factsheet2010.html>.

<sup>xxxv</sup> U.S. EPA, “List of Critical Uses.” <http://www.epa.gov/ozone/mbr/cueuses.html>

<sup>xxxvi</sup> PAN Pesticides Database. [http://pesticideinfo.org/Detail\\_Chemical.jsp?Rec\\_Id=PC32864](http://pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC32864)

<sup>xxxvii</sup> <http://www.ermanz.govt.nz/BertDocs/Methyl%20Bromide%20Executive%20Summary.pdf>