THE ROLE OF PESTICIDE & POLICY ON MAXIMUM RESIDUE LEVELS (MRL) IN INDONESIA

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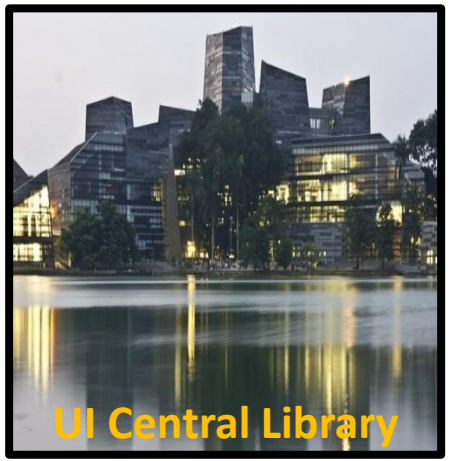
DEPOK
2023

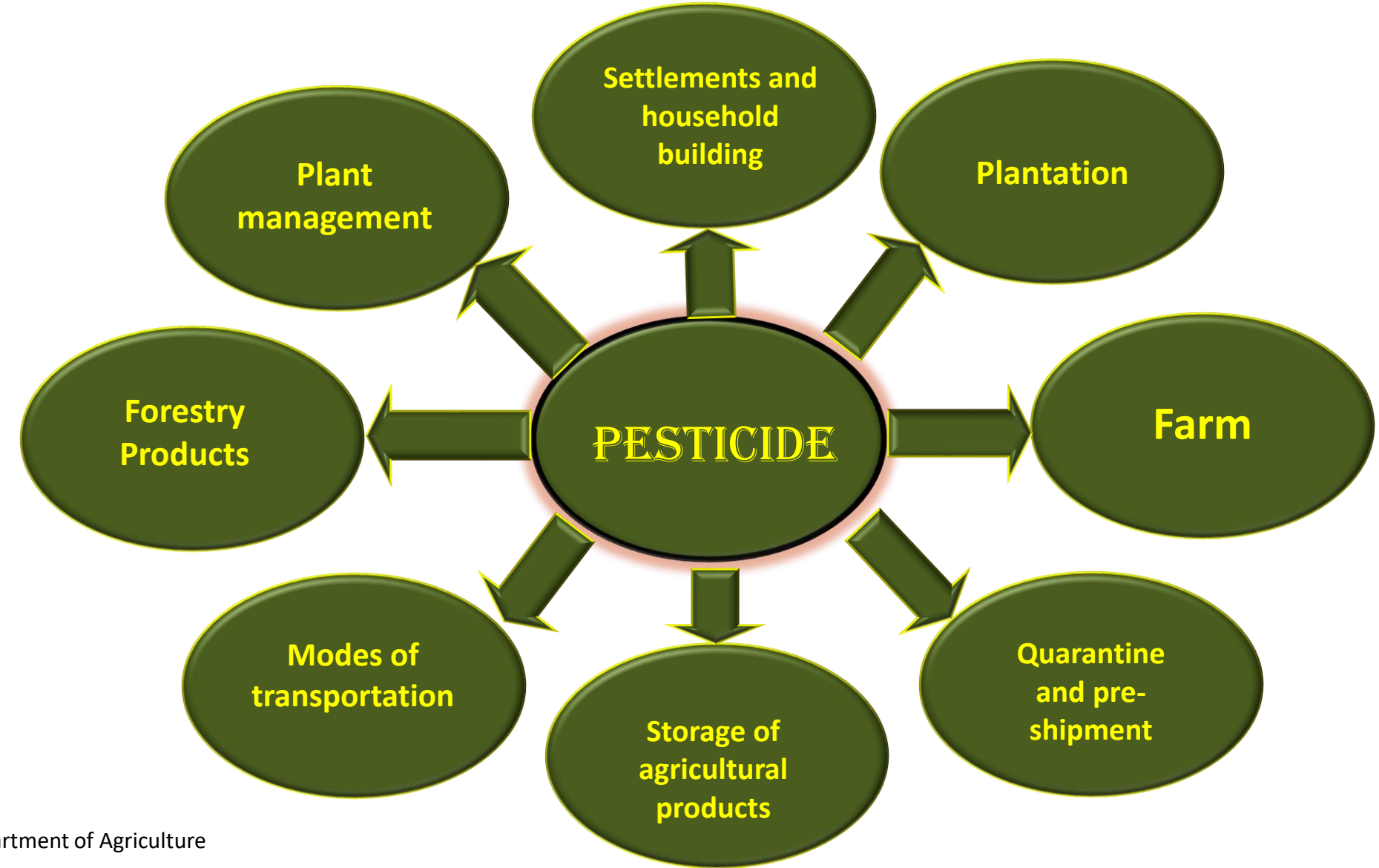


INTRODUCTION

BRIEF INFORMATION ABOUT INDONESIA

Indonesia has an abundance of natural resources, such as gold, tin, copper, nickel, iron, coal, oil, and gas. Additionally, the country has a flourishing forestry, agriculture, and marine industry, which produces various products such as rice, cocoa, natural rubber, palm oil, herbal oil, salt, seaweed, and other marine chemical

THE ROLE OF PESTICIDE: PESTICIDE USE



Source: Department of Agriculture

POLICY ON PESTICIDE RESIDUE (MRL)

- CONSIDERATIONS IN THE MINISTRY OF AGRICULTURE REGULATION CONCERNING PESTICIDE REGISTRATION:

”Pesticides are toxic substances that have the potential to cause negative impacts on the environment and biodiversity, cause resistance, resurgence, the emergence of new pests, as well as health problems for humans and other living things, **so they must be managed with utmost care.**

Terminology/Definition:

BMR (Indonesia): Batas maximum Residue

MRL (International/Codex ALIMENTARIUS; EFSA-EU etc.): **Maximum Residue Levels**

BMR-MRL is the concentration limit of pesticide residues that are legally allowed to be present in or in food or animal feed by **good agricultural practices** and does not interfere with human health.

TECHNICAL REQUIREMENTS FOR PESTICIDE REGISTRATION

Policy considerations:

1. Law no. 22 of 2019 concerning Sustainable Agricultural Cultivation Systems.
2. Regulation of the Minister of Agriculture Number 43 of 2019 concerning Pesticide Registration
3. Decree of the Minister of Agriculture Number 369 of 2020 concerning Technical Criteria for Pesticide Registration

Testing Requirements:

- Quality testing
- Toxicity testing (acute oral, dermal, irritation, sensitizing, and parameter environment)
- Efficacy testing (laboratory or field)
- Residue testing (12 vegetable and fruit commodities)

PESTICIDE RESIDUE TEST

Pesticide residue testing is required for the following:

1. New Pesticide registration
2. Expansion of use, except for herbicides

NOTE:

Residue testing methods and SOP for sampling vegetables and fruits (residue test) have been developed.

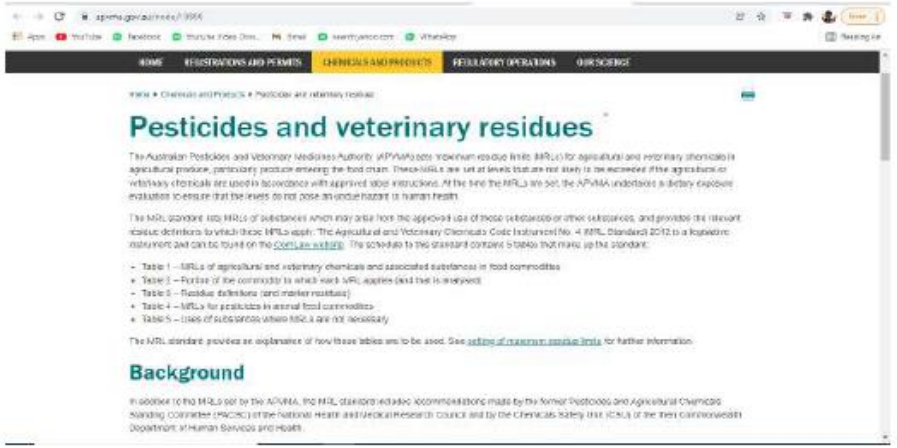
PESTICIDE RESIDUE TEST (continued)

Maximum Residue Limit (BMR) Regarding "Ministry of Agriculture & Forestry Degree about Registration on Pesticide" the year 2020 refers to:

1. National Standard: Based On SNI 7313 the year 2008 about BMR
2. CODEX *Alimentarius Committee*
3. *Acceptable Daily Intake*/ADI (Database)
4. ASEAN Corporation in Food, Agriculture & Forestry
5. European Food Safety Authority (EFSA – EU)

The residue test can use:

❖Metode QuEChERS (*Quick Easy Cheap Effective Rugged Safe*)



ASEAN Cooperation in Food, Agriculture and Forestry

HARMONIZATION OF
MAXIMUM RESIDUE LIMITS (MRLs) OF
PESTICIDES FOR VEGETABLES

OP4/2012

GUIDELINES ON RESIDUE DATA
REQUIREMENTS FOR PESTICIDE
REGISTRATION

Pesticide Board
Malaysia
2012

SNI

Standar Nasional Indonesia

Batas maksimum residu pestisida pada
hasil pertanian

Badan Standardisasi Nasional BSN

THAI AGRICULTURAL STANDARD
TAS 9002-2008

PESTICIDE RESIDUES:
MAXIMUM RESIDUE LIMITS

National Bureau of Agricultural Commodity and Food Standards
Ministry of Agriculture and Cooperatives

efsa
European Food Safety Authority

EFSA Journal 2014;12(12):3918

REASONED OPINION

Reasoned opinion on the review of the existing maximum residue levels (MRLs) for clothianidin and thiamethoxam according to Article 12 of Regulation (EC) No 396/2005[1]

European Food Safety Authority[2,3]

European Food Safety Authority (EFSA), Parma, Italy

Organized by:

The International Society for Southeast Asian Agricultural Sciences
Indonesia Chapter

Direktorat Pupuk dan Pe
Kementerian Pertanian

PESTICIDE RESIDUE TESTING BASED ON INDONESIAN REGULATION

- 12 horticultural crops/commodities (vegetables and fruits)

Vegetables	Fruits
Mustard (Greens)	Orange
Broccoli	Apple
Cabbage	Strawberry
Long beans	
Red onion	
Spring onion	
Chilli	
Carrot	
Tomato	

List of Pesticide MRLS

229 - Azoxystrobin

Functional class: **Fungicide**

Commodity	MRL	Year of Adoption
Almond hulls	7 mg/kg	2009
Artichoke, globe	5 mg/kg	2009
Asparagus	0.01 mg/kg	2009
Banana	2 mg/kg	2009
Barley	1.5 mg/kg	2014
Berries and other small fruits	5 mg/kg	2009
Brassica (cole or cabbage) vegetables, head cabbage, flowerhead brassicas	5 mg/kg	2009
Bulb vegetables (group)	10 mg/kg	2009
Carambola	0.1 mg/kg	2013
Celery	5 mg/kg	2009
Citrus fruits	15 mg/kg	2009
Coffee beans	0.03 mg/kg	2014
Cotton seed	0.7 mg/kg	2009
Cranberry	0.5 mg/kg	2009
Dried herbs	300 mg/kg	2009
Edible offal (mammalian)	0.07 mg/kg	2009
Eggs	0.01 mg/kg	2009
Fruiting vegetables other than cucurbits	3 mg/kg	2009
Fruiting vegetables, cucurbits	1 mg/kg	2009
Ginseng	0.1 mg/kg	2012

96 - Carbofuran

Functional class: **Acaricide, Insecticide and Nematocide**

Commodity	MRL	Year of Adoption
Banana	0.01 mg/kg	2013
Cattle fat	0.05 mg/kg	1999
Citrus pulp, dry	2 mg/kg	2001
Coffee beans	1 mg/kg	1999
Cotton seed	0.1 mg/kg	2004
Edible offal of cattle, goats, horses, pigs & sheep	0.05 mg/kg	1999
Goat fat	0.05 mg/kg	1999
Horse fat	0.05 mg/kg	1999
Maize	0.05 mg/kg	2005
Mandarin	0.5 mg/kg	2010
Meat of cattle, goats, horses, pigs & sheep	0.05 mg/kg	1999
Oranges, sweet, sour (including Orange-like hybrids) (subgroup)	0.5 mg/kg	2010
Pig fat	0.05 mg/kg	1999
Rape seed	0.05 mg/kg	2004
Rice straw and fodder, dry	1 mg/kg	2004
Rice, husked	0.1 mg/kg	2004
Sheep fat	0.05 mg/kg	1999
Sorghum	0.1 mg/kg	1999
Sorghum straw and fodder, dry	0.5 mg/kg	2001
Spices, roots and rhizomes	0.1 mg/kg	2011

MENTERI PERTANIAN
REPUBLIK INDONESIA

KEPUTUSAN MENTERI PERTANIAN REPUBLIK INDONESIA
NOMOR 369/KPTS/SR.330/M/6/2020
TENTANG
KRITERIA TEKNIS PENDAFTARAN PESTISIDA

DENGAN RAHMAT TUHAN YANG MAHA ESA

MENTERI PERTANIAN REPUBLIK INDONESIA,

"Ministry of Agriculture & Forestry Degree" the Year of 2020, registration on Pesticide".

57 - Paraquat

Functional class: **Herbicide**

Commodity	MRL	Year of Adoption
Almond hulls	0.01 mg/kg	2006
Assorted tropical and sub-tropical fruits - inedible peel	0.01 mg/kg	2006
Berries and other small fruits	0.01 mg/kg	2006
Citrus fruits	0.02 mg/kg	2006
Cotton seed	2 mg/kg	2006
Edible offal (mammalian)	0.05 mg/kg	2006
Eggs	0.005 mg/kg	2006
Fruiting vegetables other than cucurbits	0.05 mg/kg	2006
Fruiting vegetables, cucurbits	0.02 mg/kg	2006
Hops, dry	0.1 mg/kg	2006
Leafy vegetables	0.07 mg/kg	2006
Maize	0.03 mg/kg	2006
Maize flour	0.05 mg/kg	2006
Maize fodder (dry)	10 mg/kg	2006
Meat (from mammals other than marine mammals)	0.005 mg/kg	2006
Milks	0.005 mg/kg	2006
Pome fruits	0.01 mg/kg	2006
Poultry meat	0.005 mg/kg	2006
Poultry, edible offal of	0.005 mg/kg	2006
Pulses	0.5 mg/kg	2006
Rice	0.05 mg/kg	2010
Rice straw and fodder, dry	0.05 mg/kg	2010

List of Pesticide examples for Maximum Residue Limit (BMR) Regarding "Ministry of Agriculture & Forestry Degree about registration on Pesticide" the Year 2020.

LIST OF PESTICIDE MRLS/BMR (SNI-2008)

SNI 7313:2008

Tabel 1 (Lanjutan)

No	Jenis pestisida*)	Komoditas		BMR (mg/kg)	Kete rangan
		Indonesia	Inggris		
2		Bawang daun	Leek	0,2	
3		Biji kanola	Rape seed	2	
4		Bit gula	Sugar beet	0,2	
5		Daun atau pucuk gula bit (pakan ternak)	Sugar beet leaves or tops	1	
6		Kacang polong (polong-polong dan biji muda)	Peas (pods and succulent=immature seeds)	1	
7		Kacang polong dengan kulit (biji muda)	Peas, Shelled (succulent seeds)	2	
8		Kacang-kacangan (kering)	Beans (dry)	2	
9		Sayuran kubis-kubisan	Brassica vegetables	2	
10		Selada bokar	Lettuce, head	0,2	
11		Strawberi	Strawberry	0,5	
12		Wortel	Carrot	0,5	
XIII	**SIPERMETRIN CYPERMETHRIN**				
1		Akar dan Sayuran umbi	Root and tuber vegetables	0,05	
2		Alfalfa segar (pakan ternak)	Alfalfa forage (green)	5	Dry wt
3		Anggur	Grapes	1	
4		Batang bawang putih	Garlic stem	0,5	
5		Bawang bombay, umbi	Onion, Bulb	0,1	
6		Bawang daun	Leek	0,5	
7		Bayam	Spinach	2	
8		Berries and other small buah	Berries and other small fruits	0,5	
9		Biji Kopi	Coffee beans	0,05	(*)
10		Buah persik	Peach	2	
11		Ceri	Cherries	1	
12		Crucifer	Crucifers	1	
13		Daging mamalia (selain hewan laut)	Meat (from mammals other than marine mammals)	0,2	(fat) V
14		Daging unggas	Poultry meat	0,05	
15		Gandum	Barley	0,5	
16		Gandum	Wheat	0,2	
17		Jagung	Maize	0,05	(*)
18		Jagung manis bertongkol	Sweet corn (corn-on-the-cob)	0,05	(*)

Tabel 1 (Lanjutan)

No	Jenis pestisida*)	Komoditas		BMR (mg/kg)	Kete rangan
		Indonesia	Inggris		
10		Sayuran buah, golongan ketimun	Fruiting vegetables, Cucurbits	0,1	
11		Sayuran Daun	Leafy vegetables	0,05	
12		Sayuran kacang-kacangan	Legume vegetables	0,05	
13		Sayuran umbi	Bulb vegetables	0,05	
14		Susu	Milks	0,006	
15		Telur	Eggs	0,1	
VI	**AMITRAZ AMITRAZ**				
1		Biji Kapas	Cotton seed	0,5	
2		Buah persik	Peach	0,5	
3		Ceri	Cherries	0,5	
4		Daging babi	Pig meat	0,05	
5		Daging babi dan domba	Meat of pig and sheep	0,1	
6		Daging domba	Sheep meat	0,1	
7		Daging sapi	Cattle meat	0,05	
8		Jeroan sapi, babi dan domba	Edible offal of cattle, pig and sheep	0,5	V
9		Jeroan sapi, babi dan domba	Edible offal of cattle, pigs & sheep	0,2	
10		Jeruk, Manis, Asam	Oranges, Sweet, Sour	0,5	
11		Ketimun	Cucumber	0,5	
12		Minyak biji kapas, mentah	Cotton seed oil, Crude	0,05	
13		Pome	Pome fruits	0,5	
14		Susu	Milk	0,1	(*)
15		Susu	Milks	0,01	
16		Tomat	Tomato	0,5	
VII	**AMITROL AMITROLE**				
1		Anggur	Grapes	0,05	
2		Buah batu/berbiji	Stone fruits	0,05	
3		Jeroan mamalia	Edible offal (mammalian)	0,01	
4		Pome	Pome fruits	0,05	
VIII	**AMONIUM GLUFOSINAT GLUFOSINATE-AMMONIUM**				
1		Almond berkulit	Almond hulls	0,5	
2		Asparagus	Asparagus	0,05	(*)
3		Assorted tropical and sub-tropical buah –	Assorted tropical and sub-tropical fruits –	0,05	

Tabel 1 (Lanjutan)

No	Jenis pestisida*)	Komoditas		BMR (mg/kg)	Kete rangan
		Indonesia	Inggris		
32		Salad jagung	Corn salad	0,05	(*)
33		Susu	Milks	0,02	
34		Telur	Eggs	0,05	
35		Wortel	Carrot	0,05	(*)
IX	**ANILAZIN ANILAZINE**				
1		Daging kambing	Goat meat	0,02	(*)
2		Daging sapi	Cattel meat		(*)
3		Daging unggas	Poultry meat	0,02	(*)
4		Gandum	Wheat	0,1	
5		Gandum	Barley	0,2	
6		Jerami barley segar dan kering (pakan ternak)	Barley straw and fodder, Dry	10	
7		Jerami gandum dan gandum kering	Wheat straw and fodder, dry	10	
8		Jeroan kambing	Goat, Edible offal of	0,02	(*)
9		Jeroan sapi	Cattle, Edible offal of	0,02	(*)
10		Jeroan unggas	Poultry, Edible offal of	0,02	
11		Seledri	Ce;ery	10	
12		Tomat	Tomato	10	
X	**ASEFAT ACEPHATE**				
1		Alfalfa segar (sebagai pakan ternak)	Alfalfa forage (green)	10	Fres wt
2		Artichoke	Artichoke, Globe	0,3	
3		Biji kapas	Cotton seed	2	
4		Bit (daun atau pucuk)	Sugar beet leaves or tops	10	
5		Bit gula	Sugar beet	0,1	
6		Brokoli	Broccoli	2	
7		Buah Persik	Peach	2	
8		Bunga brasika	Flowerhead brassicas	2	
9		Daging babi	Pig meat	0,1	
10		Daging mamalia (selain hewan laut)	Meat (from mammals other than marine mammals)	0,05	
11		Daging sapi	Cattle meat	0,1	
12		Daging unggas	Poultry meat	0,01	(*)
13		Jeroan mamalia	Edible offal (mammalian)	0,05	
14		Jeroan unggas	Poultry, Edible offal of	0,01	(*)

Tabel 1 (Lanjutan)

No	Jenis pestisida*)	Komoditas		BMR (mg/kg)	Keterangan
		Indonesia	Inggris		
37		Susu sapi, kambing dan domba	Milk of cattle, goats & sheep	0,01	
38		Telur ayam	Chicken eggs	0,02	
XLVI	**DITIANON DITHIANON**				
1		Anggur	Grapes	3	
2		Ceri	Cherries	5	
3		Hops, Kering	Hops, Dry	100	
4		Mandarin	Mandarin	3	
5		Pome	Pome fruits	5	
6		Shaddocks or pomelo	Shaddocks or pomelos	3	
XLVII	**DITIOKARBAMAT DITHIOCARBAMATES**				
1		Almond	Almonds	0,1	(*)
2		Almond berkulit	Almond hulls	20	
3		Anggur	Grapes	5	
4		Apel	Apple	2	
5		Asparagus	Asparagus	0,1	
6		Bawang bombay	Onion, Bulb	0,5	
7		Bawang bombay, Spring	Onion, Spring	10	
8		Bawang daun	Leek	0,5	
9		Bawang putih	Garlic	0,5	
10		Bit gula	Sugar beet	0,5	
11		Buah batu/berbiji	Stone fruits	7	
12		Buah persik	Peach	3	
13		Ceri	Cherries	1	
14		Cranberry	Cranberry	5	
15		Daging mamalia (selain hewan laut)	Meat (from mammals other than marine mammals)	0,05	(*)
16		Daging unggas	Poultry meat	0,1	
17		Daun dan pucuk gula bit (pakan ternak)	Sugar beet leaves or tops	20	
18		Endewi	Endive	1	
19		Gandum	Barley	1	
20		Gandum	Wheat	1	
21		Hops, Kering	Hops, Dry	30	
22		Jagung manis bertongkol	Sweet corn (corn-on-the-cob)	0,1	(*)
23		Jerami barley segar dan kering (pakan ternak)	Barley straw and fodder, Dry	25	

Tabel 1 (Lanjutan)

No	Jenis pestisida*)	Komoditas		BMR (mg/kg)	Keterangan
		Indonesia	Inggris		
10		Daun atau pucuk gula bit (pakan ternak)	Sugar beet leaves or tops	0,5	
11		Gandum	Barley	0,05	
12		Gandum	Wheat	0,05	(*)
13		Gula Tebu	Sugar cane	0,05	
14		Havermuts	Oats	0,05	(*)
15		Jeroan hewan menyusui	Edible offal (mammalian)	0,05	
16		Kacang tanah	Peanut	0,05	
17		Kacang tanah, whole	Peanut, whole	0,1	
18		Kemiri	Pecan	0,05	
19		Mangga	Mango	0,05	
20		Pisang	Banana	0,1	
21		Rogge	Rye	0,05	(*)
22		Stone	Stone fruits	1	
23		Susu	Milks	0,01	
24		Telur	Eggs	0,05	
CLXIV	**PROPOKSUR PROPOXUR**				
1		Akar dan Sayuran umbi	Root and tuber vegetables		
2		Apel	Apple	3	
3		Bawang bombay, umbi	Onion, bulb	0,05	(*)
4		Bawang daun	Leek	1	
5		Bayam	Spinach	2	
6		Beras, husked	Rice, husked	0,1	
7		Biji-bijian	Cereals	3	
8		Blackberries	Blackberries	3	
9		Buah persik	Peach	3	
10		Ceri	Cherries	3	
11		Daging mamalia (selain hewan laut)	Meat (from mammals other than marine mammals)	0,05	(*)
12		Garden pea (young pods)	Garden pea (young pods)	0,05	
13		Gooseberri	Gooseberries	3	
14		Gooseberry	Gooseberry	3	
15		Kacang babi (green pods and immature seeds)	Broad bean (green pods and immature seeds)	0,05	(*)
16		Kacang-kacangan (polong dan atau biji muda)	Common bean (pods and/or immature	1	

MRL'S PESTICIDE

- Indonesia has studied pesticides with the active ingredients azoxystrobin and difenoconazole against dragon fruit (dragon fruit/pitaya) since 2013. It was adopted into the CODEX MRL's pesticide in 2018.
- Indonesia actively participates in Codex Committee on Pesticide Residues (**CCPR**) activities.

Rice Fields in Indonesia

TERIMA KASIH

Thank you