

淺談國際間對於國內外農產品之容許量標註

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摘要

杜亞潔、鄭惠元、徐慈鴻。2019。淺談國際間對於國內外農產品之容許量標註。臺灣農藥科學 7 : 27-37。

農藥殘留容許量標準是作為農產品進出口貿易的重要規範，確認農民依循農藥規範使用方法之使用量及安全採收期用藥，藉此保障消費者經農產品攝入的農藥殘留量對人體不至於造成健康危害風險。本文簡介國際間容許量標準及農藥使用管理方式，提供主管機關參考，期望能減少農民誤用而違規受罰。歐盟採納共同制定會員國間通用之容許量，使用方法則分屬會員國各自管理，日本、韓國將容許量標註以區分進口或國內登記使用等不同來源，美國對於作物容許量未於國內登記使用者於容許量表列註明，澳洲分列兩份不同文件，一份為適用所有農產品的容許量，另一份適用於訂有澳洲國內農藥使用方法的國產農產品容許量。各國農藥使用方法與容許量標準管理方式各有不同，日韓與我國權責機關架構較為相近，使用方法與容許量訂定分屬不同權責機關，可參採日韓容許量法規，標註登記來源，以利農民遵循相關規範。

關鍵詞：農藥殘留、容許量、國產農產品、進口農產品

緒言

鑒於各國作物品種栽培型態、病蟲害樣態、氣候條件、農藥使用方法不同及飲食習慣差異，導致各國訂定之農藥殘留容許量(簡稱容許量)不盡相同，因此農產品出口國針對有出口需求但尚未訂定容許量，

或我國容許量標準相較於出口國較低之農產品，可向衛生福利部食品藥物管理署申請設定或調整進口容許量，唯現行容許量並未標註訂定申請來源，當進口與國產農產品皆適用相同的作物容許量，「國內未有相對應農藥使用方法」的藥劑容許量可能導致國內農藥使用的管理缺口，本文介紹國際間農藥使用及容許量標註管理之型

接受日期：2020年2月11日

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態，提供我國農藥相關主管機關參考。

各國容許量標註管理現況介紹

在全球農產品貿易流通情形下，各國皆需面臨進口容許量與國內農產品管理農藥使用標準不一之情形，以下介紹國際間重要貿易夥伴容許量管理制度。

一、歐盟

歐盟現行農藥殘留容許量規範 (EC) No 396/2005^(9,16) 於 2005 年實施，法規施行前會員國間各自制定計有近 10 萬筆容許量，除了農民與進出口商需面對成員國間容許量標準不一而造成區域農產品流通障礙，更使得消費者對於農產品在會員國間農藥殘留合格與違規不一致的樣態感到困惑，此法規授權歐洲食品安全局 (European Food Safety Authority, EFSA) 為專責評估單位，整合歐盟區域容許量標準，提出容許量評估報告，藉由制定歐盟成員國共同適用的一致性標準，同時適用於歐盟區域本地生產及進口農產品，對於尚未設定容許量的作物或作物群組，則以預設容許量 (default MRL) 0.01 mg/kg⁽¹⁷⁾ 加以管制，此預設值通常為檢驗方法之定量極限。針對農藥有效成分管理，歐盟植物保護管理規範列於 (EC) No 1107/2009⁽¹⁶⁾，因會員國不同的氣候與栽培條件而各自核定農藥使用方法，農藥有效成分由會員國各自受理相關資料提出評估草案，

經 EFSA 辦理同儕審查及專家會議確認核准產品符合歐盟規定。

二、日本

日本《食品衛生法》⁽¹⁵⁾ 於 1947 年制定，由厚生勞動省 (MHLW) 為權責機關，該法規範食品中的農藥殘留容許量標準，並禁止超標食品於市面流通。由於公眾對於食品安全性的高度重視，2003 年法規歷經大幅修改實施容許量正面表列制度 (ポジティブリスト制度, Positive list system)，除了正面表列農產品容許量標準，未列入清單的農藥及動物用藥的農藥殘留皆需符合「統一基準」0.01 ppm 之規範。依據容許量詞彙表⁽¹⁸⁾ 標註不同訂定來源 (表一)，依據 Codex 國際標準所制定的容許量標註為 Aa，國內登記及進口容許量分別以 Ab 及 Ac 標註，外源性殘留容許量標註為 Ae，於 2006 年容許量正面表列制度正式實施時尚未完成評估的暫定容許量 (暫定基準) 標註為 Bh，每筆容許量皆註明採用年份，以阿巴汀⁽¹⁹⁾ 為例 (表二)，乾豆及落花生參採國際標準於 2018 年訂定，2013 年訂定的馬鈴薯、甘藷為進口容許量，2013 年訂定的蔥 (包含蔥韭) 屬日本國內登記。農藥登記制度法源根基的《農藥取締法》⁽¹⁰⁾ 於 1948 年制定，確保農藥安全與正確使用，並禁止未登記農藥的製造、進口、販賣及使用，權責機關為農林水產省，依法制定農藥使用方法 (農藥使用基準)。

表一、日本之 MRL 代碼說明⁽¹⁸⁾Table 1. The annotation description of MRL in Japan⁽¹⁸⁾

code	The meaning of each code
Aa	Set by referring to Codex MRLs (However, the codes, from Aa to Af, are applied to the MRLs set after 2006.
Ab	Set for adopting registration and approval as agricultural chemicals and veterinary drugs in Japan (including the MRLs for products of animals which were fed with agricultural products containing the residues of pesticides).
Ac	Set for import tolerance petition (including the MRLs for products of animals in foreign areas fed with agricultural products containing the residues of pesticides).
Ad	Set by usage of Food additives (In Japan, postharvest compounds are categorized as food additives).
Ae	Extraneous Maximum Residue Limits for pesticides and contaminants unintentionally used (including pesticides used in the past).
Af	Non-detection (In some cases that ADI is less than 0.03 µg/kg weight/day).
Ag	Other than Aa - Af, Bh.
Bh	Provisional MRLs which have not been reviewed since 2006.

表二、日本容許量標註－摘錄自阿巴汀容許量資料⁽¹⁹⁾Table 2. The annotation of MRLs in Japan-excerpt from abamectin⁽¹⁹⁾

Food Type	MRLs (ppm)	Basis of setting
Beans, dried	0.005	Aa2018
Peanuts, dried	0.005	Aa2018
Other legumes/pulses	0.005	Aa2018
Potato	0.01	Aa2013
Taro	0.01	Ac2013
Sweet potato	0.01	Ac2013
Yam	0.01	Ac2013
Other Potatoes	0.01	Ac2013

三、韓國

農藥註冊登記及核准使用係向農村振興廳 (Rural Development Administration, RDA) 提出申請及審查，並由該廳向食品醫藥品安全部 (Ministry of Food and Drug

Safety, MFDS) 提出建議及申請訂定農藥殘留容許標準，而 MFDS 根據食品衛生法評估後公告農藥殘留容許標準，而進口容許量申請則由海外農藥公司或出口國政府向 MFDS 申請、進行評估設定及公告容許量，符合殘留容許標準的農產品才可以進口及流通⁽⁴⁾。韓國自 2019 年起全面實施

正面表列，並陸續公告增修定容許量標準⁽¹⁴⁾，針對進口容許量及暫訂容許量分別標註為†及 T(表三)，並註記修訂日期，以藥劑殺芬草為例⁽¹³⁾，紅棗與辣椒(青與紅、鮮)為暫定容許量，柑橘類及堅果類為進口容許量(表四)。雖訂定之容許量為國內外農產品一體適用，但並非國內農產品可隨意施用因進口需求訂定之藥劑，政府加強宣導因進口需求而設定的容許標準不可於國內使用，國內的農藥使用應遵循農藥管理法相關規定⁽¹¹⁾。

四、澳洲

澳洲具有兩份容許量文件，分別為 Agricultural and Veterinary Chemicals Code (MRL Standard) Instrument 2019⁽⁶⁾ 及 Schedule

20 Maximum residue limits⁽⁸⁾。

1. MRL Standard：此文件為管理澳洲國內之農藥合理使用，原始文件 Agricultural and Veterinary Chemicals Code Instrument No. 4 (MRL Standard) 2012⁽⁷⁾ 目前已廢止，自 2019 年 8 月 27 日起依循文件改為 Agricultural and Veterinary Chemicals Code (MRL Standard) Instrument 2019⁽⁶⁾，由澳洲農藥暨動物用藥管理局 (APVMA) 建立，農藥於核可登記同時訂定相關容許量標準，此份文件共有五個列表(表五)，食品用之農產品農藥之農藥殘留容許量 (MRLs in food commodities) 適用列表一，列表二為容許量適用之作物分析部位 (commodity portions)，列表三為藥劑容許量殘留定義 (residue definitions)，動物飼料產品則適用列表

表三、韓國之 MRL 代碼說明⁽¹²⁾

Table 3. The annotation description of MRL in Korea⁽¹²⁾

Code	The meaning of each code
†	The MRL are established according to the request of MRL set up from exporters. However, same limit of MRL could be applied for both imported and domestic agricultural commodities.
T	The above-mentioned T indicates the provisional MRLs of the pesticide.

表四、韓國容許量標註-摘錄自殺芬草容許量資料⁽¹³⁾

Table 4. The annotation of MRLs in South Korea-excerpt from saflufenacil⁽¹³⁾

식품명 (Food name)	Korea MRL
감 (Persimmon)	0.02 mg/kg
감귤류 (Citrus Fruits)	0.03† mg/kg
견과류 (Nuts)	0.03† mg/kg
고추 (Green & red pepper (Fresh))	0.02T mg/kg
대추 (Jujube)	0.05T mg/kg

四，若為同時有可能是食品或飼料之農產品，其農藥殘留容許量遵循第一表，列表五為免定容許量藥劑。

2. Schedule 20：此文件係依循法規 Food Standards Australia New Zealand Act 1991⁽⁵⁾ 建立，文件名稱為 Australia New Zealand Food Standards Code-Schedule 20-Maximum residue limits，所列容許量包含澳洲國內農藥使用及進口容許量，此容許量是由澳洲紐西蘭食品標準局 (FSANZ) 及澳洲農藥暨動物用藥管理局 (APVMA) 共同建立。當 APVMA 依國內使用訂定容許量標準後會同時提交給 FSANZ 公告於此文件，此外 FSANZ 還負責訂定進口容許量標準，

避免產生農產品貿易障礙。進口農產品及市面上販售之食品進行監測調查農藥殘留時，判定合格標準皆遵循此文件執法。

以 (表六) 阿巴汀為例，蔓越莓 (cranberry) 僅列於「Schedule 20」文件中，「MRL Standard」並未訂定標準，意即澳洲境內蔓越莓未核准使用阿巴汀，農民不得於蔓越莓施用阿巴汀，而柑桔類 (citrus fruits) 雖於兩文件皆有訂定標準，但「MRL Standard」低於「Schedule 20」之 MRL 標準，意即於澳洲境內柑桔施用阿巴汀仍應依照使用方法標籤施用殘留量應符合「MRL Standard」規定，而進口農產品則需符合「Schedule 20」相關規定。

表五、澳洲 MRL Standard 文件列表說明^(6,7)

Table 5. The tables of the MRL Standard document in Australia^(6,7)

The name of table	Description
Table 1 MRLs in food commodities	Table 1 lists residues of substances which may occur in food commodities and for which a MRL or an ERL applies. The particular food commodity is set out in column 2 of Table 1 and the MRL (or the ERL) for that food commodity is in column 3.
Table 2 Commodity portions	Table 2 lists the portion of the commodity to which the maximum residue limit applies (and which is analysed).
Table 3 Residue definitions	Table 3 sets out the residue to which the MRL applies for each chemical compound. Residue definitions for compounds which no longer have entries in Tables 1, 4 or 5 have been retained in Table 3 for reference as analyses may still be required for compounds whose use is no longer permitted.
Table 4 Animal feed commodities	Table 4 lists MRLs and ERLs for residues of substances that may occur in animal feed commodities. Residues of a substance may arise from approved uses of that or another substance, or from extraneous contamination. Entries in Table 4 are normally expressed on a dry weight basis.
Table 5 MRLs not necessary	Table 5 lists uses of substances where MRLs are not necessary.

表六、澳洲 MRL Standard 及 Schedule 20 兩文件容許量—摘錄自阿巴汀容許量資料^(6, 7)**Table 6.** MRLs from MRL Standard document and Schedule 20 in Australia-excerpt from abamectin^(6, 7)

Food	Schedule 20 MRL (mg/kg)	MRL Standard MRL (mg/kg)
Cranberry	0.05	-
Citrus fruits	0.02	0.01

- Not listed in MRL Standard.

表七、美國進口容許量標註—摘錄自阿巴汀容許量資料⁽²¹⁾**Table 7.** The annotation of MRLs in United States-excerpt from avermectin⁽²¹⁾

Commodity	Parts per million
Tea, dried ¹⁾	1.0
Tropical and subtropical, small fruit, inedible peel, subgroup 24A	0.01
Upland cress	0.1
Vegetable, cucurbit, group 9	0.005
Vegetable, fruiting, group 8-10	0.07

¹⁾ There are no U.S. registrations for use of abamectin on banana or tea.

五、美國

美國農藥使用方法核准⁽²⁰⁾及相關農藥殘留容許量制定權責機關皆為美國環保署 (United States Environmental Protection Agency, USEPA)，針對核准的使用方法制定相應之農藥殘留容許量標準，容許量標準及免訂容許量標準規範於 40 CFR part 180⁽²¹⁾。USEPA 針對未於美國登記使用或登記使用範圍已撤銷，但因進口需求予以保留或調整的項目，稱為進口容許量。於農藥登記新使用範圍時會盡可能將進口食品及其殘留數據納入考量，產出之容許量標準同時適用於進口及美國境內生產之農產品，少數有較高的進口需求且未能涵蓋之作物，需另外提供相關數據並另行個案

評估⁽²²⁾。若因進口需求而需訂定容許量，但美國境內未核准特定作物使用，則將於該特定作物容許量作物標註 1，容許量列表下方敘明「此作物未於美國登記使用」，避免農民誤用農藥於美國未核定使用方法的作物，以 (表七) 之阿巴汀容許量摘錄標註為例，美國境內未核准阿巴汀使用於香蕉及茶。

我國容許量標註現況及建議

我國農藥殘留容許量標準⁽³⁾係依循食品安全衛生管理法⁽²⁾第十五條為加強食用作物殘留農藥管理所訂定，共有七項條文五個附表 (表八)，農藥殘留容許量與外源性農藥殘留容許量標準分別列於第

表八、我國農藥殘留容許量附表說明⁽³⁾**Table 8.** The appendix tables of MRL Standards for pesticide residue limits in foods in Taiwan⁽³⁾

The name of table	Description
Table 1 Pesticides residue limits in foods	The pesticide residues in foods except animal products shall meet the standards for the pesticides residue limits in foods table and extraneous residue limits table, as appendix table 1 and table 2 pesticides not listed in the Table shall not be detected.
Table 2 Extraneous residue limits	
Table 3 Pesticide MRLs omitted	Pesticides listed in the Table 3 are highly safe, it is not necessary to set the maximum residue limits and examine their residues.
Table 4 Pesticides prohibited for use	No residue shall be detected for the pesticides prohibited for use by the agriculture authority, unless other regulations apply. The names of such pesticides are listed in the appendix table 4.
Table 5 Classification of crops for the pesticide residue limits in Foods	Table 5 lists the classification of crops referred in the standards for pesticide residue limits in foods.

三條附表一與附表二，免定容許量列於第四條附表三，農藥主管機關公告禁用使用之農藥列於第五條附表四，容許量標準表之作物分類列於第六條附表五。我國農藥殘留容許量法規，依現行第三條附表一共呈現農藥之國際普通名稱、中文普通名稱、作物類別、容許量、備註說明藥劑類型等五個欄位，並未針對容許量訂定來源進行標註。現行我國農藥殘留容許量標準同時適用國內及進口農產品，農民常認定已訂定容許量的作物即有相對應的農藥使用方法，而造成農民誤用。

我國農藥登記權責機關依據農藥管理法為行政院農業委員會⁽¹⁾，負責公告農藥使用方法，農藥殘留容許量標準依循食品安全衛生管理法第十五條訂定，權責機關則為衛生福利部⁽²⁾，此種農藥使用與登記

及容許量訂定分權管理型態與日本、韓國較為接近。國際上為避免農民誤用及進口容許量管理所需，區分登記農藥及進口容許量，國內相關主管機關亦可考量國際作法，參考與我國權責區分較為相近之日本或韓國註記方式，有助於提升農藥管理效能，減少農民誤用而導致違規受罰。

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Brief Introduction to the Annotation of Maximum Residue Limits Employed by Different Countries to Regulate Domestic and Imported Agricultural Products

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Abstract

Tu, Y. C., Cheng, H. Y. and Shyu, T. H. 2019. Brief introduction to the annotation of maximum residue limits employed by different countries to regulate domestic and imported agricultural products. *Taiwan Pestic. Sci.* 7: 27-37.

Maximum residue limits (MRLs) are established in order to manage the approval of pesticide usage on crops, and also play an important role in international agricultural product trade. This article summarizes the annotation of MRL and how they are applied to pesticide management. The information provided in this report can serve as a reference to authorities for reducing pesticide-use violations in Taiwan. The European Union sets the harmonized MRLs which are applied by all member states whereas each member state manages the application method of pesticide according to the authorized label. In Japan and South Korea, the MRLs give different annotations to demonstrate MRLs setting by import tolerance, domestic registration, and more. The United States only gives annotation for import tolerances. Australia sets two MRLs documents, one for all food commodities including domestic and import commodities, and the other for the management of pesticide registration usage in domestic commodities of Australia. Each country has its feature on the management of pesticide registration and MRL. Owing to the similarity of authority and responsibility units, we suggested the competent authority could refer to the annotation of MRLs in Japan

Accepted: February 11, 2020

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or South Korea and supplement the annotations in Taiwan MRLs regulation.

Key words: pesticide residue, maximum residue limits (MRLs), domestic agricultural product, imported agricultural product