



Annex IV FR - B.1 Step by step guide for stone fruit production

Action B.1: "Methodology development of the Zero Residues Fruit Production"

(Action Finished)

Compile by Author: Zerya

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Content

1. Summary

The present document includes a transcription of the Technical Regulation provided by Zerya as well as a summary of the phytosanitary products and fertilizers allowed to produce stone fruit through the Zero Residues methodology. Here are contained the technical requirements as well as the Compliance Criteria with which the farmers can assess, develop and improve their procedures and controls in order to achieve the Zero Residue production.

2. Introduction

The document consists of three parts.

The first part displays a series of the technical requirements that farmers should observe to standardize their procedures and controls.

The second part is a list of compliance criteria with which the audits were conducted and that seek to prove the consistency of the procedures with the objectives of the program.

Although this deliverable is written in English, the farmers use the Spanish version of the document for everyday work.

The third part is a list of the diseases and pests that are relevant to the project areas and the registered treatments in Spain for such pathogens. Out of this list of treatments, we will scrap out those known to be more persistent, harmful for the environment and/or incompatible with biological control, and other biological or naturally sourced products were proposed as alternative treatments.

Chapters + Results

TRANSCRIPTION.

PART 1.

Technical regulations for producers of the quality brand mark ZERYA

The regulations of the quality brand mark Zerya have been developed by experts in this field and initial audits were practiced in order to verify the adaptability to the goal of the brand mark. The present document describes the activities to carry out by the operators that want to be certified in the quality brand mark, and includes a checklist with the criteria to follow in the moment of performing the audits.

Here below, the user can find the detailed criteria to be applied in order to achieve a production without residues.

DESCRIPTION OF THE TECHNICAL REGULATIONS ZERYA

Points composing the technical regulations:

- a) The producer must have an updated GlobalGAP or Tesco Nurture (Tesco Nature's Choice) certificate in the field of crops. Other relevant certifications might also be considered, those who include Good Agricultural Practices (GAP's), including the ones benchmarked by GlobalGAP, and other with international recognition that comply in similar consistency levels in terms of control and record of the production activities. There can also be included local or national certification standards audited by independent certification bodies like Integrated Production (I.P.) and Ecological (Organic) Production. They all shall manage the GAP's with a similar output in order to integrate the procedures originated by the implementation of the ZERYA Regulations.

- b) The producer must have employed or subcontracted a person responsible for ordering the agrochemical treatments and shall have a relevant education (Professional Agricultural Training, BSc in Agriculture, MSc in Agriculture, etc.).
 - To rate:
 - i. Training in integrated management of pests and/or diseases.
 - ii. Training or education in drawing samples of pests and/or diseases.
 - iii. Professional experience in this type of questions.
- c) The crop protection products to be applied to any of the crops will be the ones that are listed and approved by the Zerya workgroups, based on the authorized products in the producing country and in compliance with the regulation of the country of destination. Especial cases will have to be studied by the Technical coordinator.
- d) The crop protection treatment will be justified using consistent or reliable sampling systems in the case of pests, or in the case of diseases trends or predictive models
 - This models may be obtained:
 - i. By proper experience base on a method.
 - ii. Models obtained from bibliography.
 - iii. Thresholds or ranges given by IPM are to be approved by the workgroups, in a way that those are not trivial justifications to assure massive applications.
- e) Lack of pre-established treatment scheme. The producer (farmer) shall not apply any phytosanitary product without justification nor following a schedule that indicates programmed or preventive treatments when the evident need of controlling a pathogen is not evident.
- f) In the case of a group of agricultural companies, it is necessary that one person with technical background is the responsible in the execution of the present regulations in all the companies of the group.
- g) The use of beneficial insects is a useful practice and complementary to several crop protection programs
 - Their introduction in an efficient way will reduce the applications of crop protection products.
 - The responsible personnel of the crop must be able to recognize the beneficial wildlife and be able to tell the difference among the samples, together with the ability to estimate the capacity of control.
 - The introduction of these insects into the crop must be justified by previous studies in the corresponding crops.
- h) For crops with infestation problems. In cases when the control cannot be achieved with the Zerya approved products, it is necessary to communicate this situation to the relevant workgroup. When doing so, the coordinator of this group or in his absence the elected member in this case, can get in touch with the client's technician within 24 hours to evaluate the mentioned situation, in order to use another product, authorized in the crop. When the problem cannot be solved with the approved products, in order to avoid putting in risk the goal of the protocol, the use of a conventional product not approved by Zerya will be authorized and the certification for this crop or harvest will be suspended, depending on the type of crop in question.
 - In case of the approval of the use of a crop protection product different from the ones listed by Zerya the following steps have to be observed:
 - i. Written communication to the workgroups and to the certifying company about the relevant fact.
 - ii. Verification of the application of the product and date, using the corresponding form which reflects the date of application, the applicator, product, active ingredient, security interval.
 - iii. Validation by means of a multi residue analysis of either the presence or the absence of the active ingredient used and its metabolites (there are active materials that break into different substances that may be not included in the standard tests).
- i) Zerya must authorize the laboratories responsible for realizing the analyses.
- j) The traceability for any of the crops has to be clear as well as the identification in the field, citing plot and cadastral location, as well as in the case of sub plots, these must be clearly identified in maps and plot.

- k) Any traceability has to be reviewed by its multi residue analytics in which their absence is pointed out. For crops with recollection sequences, any time an active ingredient of chemical origin is applied and once harvest has begun, it is necessary to justify their absence using MR analysis for any time of application.
- l) The file of these records shall be of at least three years.
- m) The brand mark may only be used for products without residues of crop protection products endorsed by the corresponding analysis.
- n) The plots under the present certification have to be identified by a standard sign, where the corresponding logo appears, demonstrating order, cleanness and compliance with the environmental standards required in Global GAP (being holder of certificate GlobalGAP) or any other GAP standard recognized by ZERYA as a valid pre-existing standard.
- o) For obtaining the certification, it will be necessary to undergo a conversion process of 365 days, where all points established in the protocol have to be complied. The non-compliance of any of these points during this period, automatically initiates again the term of 365 days, unless the conversion period is successfully accomplished and the producer is effectively certified, the certification brand cannot be used.
- p) The conversion period might be suppressed in case the producer has a valid "ecologic" or "organic" certification with a national or international recognition. The certification must cover all the plots or farms that want to be certified with Zerya and it should also be enclosed with recent lab reports that proof the absence of residues not authorized by Zerya.
- q) Traceability of the products requires the same requisites as GlobalGAP, concerning date of application, active ingredient, commercial name, harvest interval, name of applicator (indispensable basis or qualified applicator license), etc....
- r) There should be a file keeping all the claims and complaints from the distributors and buyers involving the certification mark. In order to identify the cause and kind of claims or complaints received, and if any of them breaches the ethics of the certification mark, all the control points of the tainted batches shall be re-checked as well as the consistency and reliability of the control method used by the producer or farmer.
- s) There must be an emergency proceeding capable of the immediate communication to the clients, with a minimum anticipation of two weeks, about the impossibility of offering Zerya product, with the purpose of informing markets and final clients.

PART 2.**QUALIFICATION, POINTS OF CONTROL AND CRITERIA OF COMPLIANCE**

Grade	Point of control	Criteria of compliance
1.	CERTIFIED SISTEM OF GOOD AGRICULTURAL PRACTICES	
MAJOR	Certification GlobalGAP (also acceptable TNC without GlobalGAP or any other equivalent standard)	The operator must have a valid certificate GG or any other internationally recognized standard with similar levels of GAP compliance.
MAJOR (could be N/A)	"Ecologic" or "Organic" Certification	In case of migrating or combining an "organic" certification, a valid Certificate must be shown.
2	ORGANIZATION OF THE COMPANY	
RECOMMENDED	All the employments are specified at all levels	Description of employments
RECOMMENDED	There is a clear organization chart about the general position of all the departments, tasks and employees in the structure of the company	The position of the technical department must be evident as well as the interference of others defined (e.g. commercial department). Presentation of a chart of processes and decision taking (technical department) of all the tasks implicated in the care of the crops.
RECOMMENDED	Are there inter department meetings that could have importance for the technical decisions.	The commercial departments and the manager may fix the objectives and discuss these with the technical department, but in no case may interfere into the technical decisions (e.g. suggest a treatment fearing loss of commercial value; this must be discussed with the technical department, who gives order to the key personnel, the commercial department has to fix the objectives and the technical department has to offer solutions to the variables to be considered
MAJOR	There is an implication of the management to offer the means and the independence to the technical department, for being able to do their job	The interference of the management about technical questions has to be restricted on the fixing of objectives to the technical department; there must be a statement by the management.
3	DESCRIPCION OF THE EXPLOITATION	Must be a clear description.
MAJOR	Crops to certify	
MAJOR	The references of the production area are clear	The producer (farmer) must have a clear description of the boundaries and the cadaster of the production zones
RECOMMENDED	The production zones can be identified with a GPS	When available, the description of the production zone shall include the GPS coordinates
MAJOR	Maps available of all the areas of production	
MAJOR	The registers of history of use of crop protection products are recorded clearly and organized, for at least 3 years	The period starts counting when the conversion period starts

4	TECHNICAL DEPARTMENT	
MAJOR	An organization chart is presented.	Minimum one technician (specialist technician, with diploma or higher grade)
MAJOR	The responsible of the technical team is determined	A person with responsibility on the technical management of the company (assistance to training, planning of training, supervising the definition of the employments and the task with respect to crop protection integrity of the crop)
MAJOR	Keep training and experience registers for the employed in the technical department	Verify the employment: CV, evidences ...
MAJOR	Do all workers (implied in the technical management) know the working proceedings and the decision taking with reference to the technical management (fertilizing, crop protection, etc.)	The tasks have to be defined, from the tractor driver responsible for tilling up to the applicators. Show the delivery of instructions and proceedings
RECOMMENDED	The workers of the exploitation have been trained in IPM (recognition of pests, symptoms, beneficial insects, ...)	Show agenda and training.
MAJOR	Does a communication proceeding exist of all the technical decisions to the whole technical team	Evaluation of the registers about communication of the technical team to the subordinated/ applicators, diagram of fluxes of the transmission of orders (register of communications: signed by ...)The communication registers have to be kept in the technical team
MAJOR	Training of at least one team member in IPM/GAP	At least one member of the technical team must have IPM/GAP in courses within his formation. University or posterior (show evidence)
MAJOR	Is the technician/ technical team able to present evidence of 'continuous training'	E.g., assistance to training courses, conferences, technical meetings, etc. All related to obtained training, with evidence of assistance or diploma of assistance
RECOMMENDED	Is the technician trained in sample taking and monitoring.	Show evidence to training courses or the application (bibliography, etc.)
RECOMMENDED	Is the responsible technician capable to demonstrate an experience in crop protection management	Companies, investigation..., which should be at least one year (corresponding to the reconversion)

5. CROP PROTECTION		
MAJOR	Have an updated list and approved by the crop workgroups	List of crop protection products per crop and year. In technical proceedings will be defined how they may be set up and kept up to date.
RECOMMENDED	Have a list of pests and diseases of the crops	Historical list of incidences; bibliographic sources
RECOMMENDED	Have a list of incidences of the previous years of the production fields, the county and the region	General incidences and per crop. Recommended for the year of conversion or first year of the crop of the farm (the farm/estate must be defined based on the crop technical management)

RECOMMENDED	For any incidence it can be shown:	Incidences, related to disease (might include nutrient deficiencies.)
	<ul style="list-style-type: none"> • Have technical reference 	
	<ul style="list-style-type: none"> • Own studies 	Monitoring of data and graphics with relation to crop, farms and dates of incidences
	<ul style="list-style-type: none"> • Be member of investigation groups 	
MAJOR	Specific proceedings have been developed for the crop protection management	General proceedings: defined by the management to verify the treatment orders or actions and its "traceability". A practical case of treatment order shall be demonstrated, from the reason (origin, threshold...) up to application (records).
MAJOR	Exist clear instructions based on this proceedings	Instructions to technical team and applicators or other workers (e.g. culture chores). From general instructions for all the workers, to specific ones (e.g. strip or local applications) carried out by applicators and record keeping.
MAJOR	Have been delivered and are known by all the worker implied in this instructions	Verify the delivery of instructions with respect to the assigned tasks.
MAJOR	Register of crop protection treatments	It must be defined when the performed applications are general to a plot or local in the crop area and with technical justification.

6. JUSTIFICATION OF CROP PROTECTION APPLICATIONS

RECOMMENDED	Present monitoring of all the pests	The auditor may justify these based on the incidences.
MAJOR	Applications have been carried out to control one of the mentioned	Justification. There shall be monitoring records that prove the decision for treatment. In case of orchards (citrus, olives) see the treatment exceptions (chemical, biological, cultivation, etc.) In case of no treatment: NA
RECOMMENDED	Present models/tendencies in disease control	May keep registers and reports
MAJOR	Applications have been carried out to control any of the mentioned diseases	Justification based on registers of models/tendencies. In case of no application, NA
RECOMMENDED	Monitoring of the auxiliary fauna (models or tendencies in pest control)	It might be asked where it is performed (crop, fence...)
RECOMMENDED	Have information sources for crop protection alerts	

7. USE OF BIOLOGICAL CONTROL

RECOMMENDED	Release of beneficial insects	
RECOMMENDED	Use of microorganisms (e.g. <i>Bacillus thuringiensis</i> , <i>Verticillium lecanii</i> etc.)	
RECOMMENDED	Use of soil improving material (also biologic)	May guarantee the method and the purity and keep register of production (require minimum of data: e.g. date, origin of raw material ...)
RECOMMENDED	Use of biological strengtheners	May guarantee the method and the purity and keep register of production (require minimum of data: e.g. date, origin of raw material ...)
RECOMMENDED	any technical decision has taken into account the possible environmental effects	A reflection on the possible effects

8	SITUATIONS OF NO CONTROL OF PESTS AND	Communication of extraordinary situation to the crop workgroups
MAJOR	Communication and authorization (keep register)	To the crop workgroups by the Certification Body
MAJOR	Verification monitoring proceedings	With the goal to guarantee the use of the brand mark
MAJOR	Verification application register	With the goal to guarantee the use of the brand mark

9	MANAGEMENT OF CROP MARGINS	
RECOMMENDED	The perennial and bushy vegetation of the crop margins have been respected	The elimination of the adventive vegetation in the crop margins is justified.
RECOMMENDED	In the environmental management plans, the plant communities and their developmental stage are considered (maturity?)	
RECOMMENDED	Actions have been performed with a focus on conservation and increase of the potential vegetation in the margin area (plantation, re introduction of species, cleaning of margins)	
RECOMMENDED	Sowing or plantation of plant types as (trap plants, species for increase of biodiversity or effects: e.g. <i>Tagetes</i> for nematodes...)	

10	APPLICATION EQUIPMENT	Identification, calibration and verification
RECOMMENDED	All the crop protection equipments are identified	There must be a updated record of any type of equipment, for the application of crop protection products, including if it is performed using the irrigation system or simple knapsack sprayers for applying herbicides or local applications
RECOMMENDED	It is kept and verifies the mentioned.	

11	MULTIRESIDUE ANALYSES	
MAJOR	Sample for analysis in order to guarantee the brand mark	It is verified that the sample taking is done by a laboratory
MAJOR	Clear Traceability of plot and crop	The laboratory must identify the samples in compliance with the current Sampling Procedure

12	LABORATORIES	Indicate name of laboratories
MAJOR	Approval of the Certification Body (the control organism authorized by the brand mark)	Indicate approval
MAJOR	Accreditation	Indicate accreditation of laboratories and their scope

13	MANAGEMENT OF THE PRODUCT	
MAJOR	Traceability and mass balance: performed for crop and analysis MR up to identification of plot	An exercise of traceability and mass balance is performed
MAJOR	Use of the brand mark: for the approved in traceability, the use made...	Applicable to certified estates

14	CLAIMS	
MAJOR	A proceeding of claims exists that considers the specific cases of the present regulation	It may be indicated in the proceeding that specific claims related to the product Zerya and the use of the brand mark will be included
15	EMERGENCY PROCEEDINGS	
MAJOR	A proceeding of emergency exists that indicates the immediate communication of any incidence which might suppose the loss of integrity of the product Zerya to the clients	It must be available a communication proceeding with sufficient advance for the market being able to communicate the absence of product Zerya.

Register of Updates:

Name of document	Code	Valid Edition	Replaces document	Valid from	Origin of modification
TECHNICAL REGULATIONS FOR THE QUALITY BRAND MARK ZERYA	RT-01	Version 1.1 November 2010	---	November 1 st , 2010	Review of criteria
TECHNICAL REGULATIONS FOR THE QUALITY BRAND MARK ZERYA	RT-01	Version 1.2 June 2012	Version 1.1 November 2010	June 19 th , 2012	Syntax correction and translation of the update of the Spanish Original Version
TECHNICAL REGULATIONS FOR THE QUALITY BRAND MARK ZERYA	RT-01	Version 1.3 June 2013	Version 1.2 June 2012	June 24 th , 2013	Update to the new version of RG-01. Insertion of new paragraph (p) and modification of criteria 1, 9 & 13.
TECHNICAL REGULATIONS FOR THE QUALITY BRAND MARK ZERYA	RT - 01	Version 1.4 May-June 2017	Version 1.3 June 2013		This version will be presented to Zerya's Technical Committee on summer 2017 for its approval.

PART 3.**List of potential PRE-HARVEST diseases and pests affecting the project area.**

Disease	Peach	Nectarine	Apricot	Cherry	Flat peach
Peach Blight (<i>Monilia spp.</i>)	X	X	X	X	X
Gray Rot (<i>Botrytis spp.</i>)	X	X		X	X
Gum spot (<i>Coryneum beijerinckii</i>)	X	X	X	X	X
Powdery mildew (<i>S. pannosa</i> & others).	X	X			X

Pest	Peach	Nectarine	Apricot	Cherry	Flat peach
Green aphid (<i>Myzus persicae</i>)	X	X			X
Twig borer (<i>Anarsia lineatella</i>)	X	X	X		X
Oriental moth (<i>Grapholita molesta</i>)	X	X			X
Fruit fly (<i>Ceratitis capitata</i>)	X	X	X		X
Red spider mite (<i>Tetranychus urticae</i>)	X	X			X
Thrips (<i>Frankliniella occidentalis</i>)	X	X		X	X
Defoliating Caterpillars			X		
Root borer (<i>Capnodis tenebrionis</i>)			X		
Black aphid (<i>Myzus cerasi</i>)				X	
Cherry fruit fly (<i>Ragoletis cerasi</i>)				X	
Spotted wing fly (<i>Drosophila suzukii</i>)				X	
San Jose Scale (<i>Quadraspidiotus perniciosus</i> Comstock)	X	X	X	X	X

List of approved treatments for the fruit crops included in the project.

Here below is a proposal of potential treatments to assess farmers willing to adapt to ZR methodology, several active ingredients have been discarded already due to their persistence in the product, the adverse effects they may cause on the environment or workers, or because they are incompatible with biological control.

Fungicide substances	Peach and Flat Peach	Nectarine	Apricot	Cherry tree
Bupirimate 25%	X	X	X	
Ciproconazole 10%	X	X	X	X
Ciproconazole 5%	X	X	X	
Ciprodinil 37,5% + Fludioxinil 25%	X	X	X	X
Ciprodinil 50%	X	X		
Copper in all approved formulas.	X	X	X	X
Chlorothalonil 50%	X	X	X	
Difeconazole 25%	X	X	X	
Dodine 40%	X	X	X	X
Fenbuconazol 2.5%	X	X		
Fenbuconazol 5%			X	
Fenhexamide 50%	X	X	X	X
Iprodione 50%	X	X	X	X
Mancoceb 75%	X	X	X	X
Mancoceb 80%	X		X	X
Methyl thiophanate 50%	X	X	X	
Methyl thiophanate 70%	X	X	X	
Miclobuthanyl 12.5%	X	X	X	
Miclobuthanyl 24%	X	X	X	X
Penconazole 10%	X	X	X	
Quinoxifen 25%	X		X	
Sulfur 80%	X	X	X	
Tebuconazole 25%	X	X	X	
Tetraconazole 10%	X	X		
Tetraconazole 12,5%	X	X		
Thiram 50%	X	X	X	X
Trifloxistrobin 50%	X	X		

Insecticide substances	Peach and Flat Peach	Nectarine	Apricot	Cherry tree
Acetamiprid 20%	X	X		
Acrinatrin 7,5%	X	X		X
Azadiractin 1%	X	X		
Beauveria bassiana 2.3%	X			X
Deltametrine 2,5%	X	X	X	X
Flonicamid 50%	X			
Lambda cihalotrin 10%	X	X	X	X
Lambda cihalotrin 2,5%	X	X		
Pimetrozin 50%	X	X		
Piriproxifen 10%	X	X		X
Spinosad 48%	X		X	
Summer or Winter Oil	X	X	X	X
Tau-flauvalinate 24%	X	X		

Herbicide substances	Peach and Flat Peach	Nectarine	Apricot	Cherry tree
Ammonium Glufosinate 15%	X	X	X	X
Glifosate 36%	X	X	X	X
Diflufenican 4% + Glifosate 16%	X	X		
Diflufenican 4% + Glifosate 25%	X	X		

Since there are different products/substances whose residues may be misinterpreted on the analysis (the residue is an addition of byproducts), please, see Annex I to verify the active compounds interactions before using them to avoid the risk of accumulative residues.

The project also includes other substances (alternative products like minerals, botanical extracts and other naturally sourced substances) that prove effective levels of pest & disease control. Biological control is also recommended in the project.

Other substances			
Manufacturer	Commercial name	Manufaturer	Commercial name
AGRARES	INSECT STOP 2	EIBOL	RED FLO PX357
AGRI NATURE	LIFIX PLUS	GENERICO	INSECTOS NATURALES
AGRI NATURE	SERYL QUICK PLUS	GENERICO	JABON FOSFORICO
AGRI NATURE	SERYL WINTER PLUS	GENERICO	JABON POTASICO
AGRIMOR	FUNGASTOP	GENERICO	OXIDO DE SILICIO
AGRIMOR	GARLIC GARD	GENERICO	TRICHODERMA Spp.
AGROMÉTODOS	NUTRACETICO	HILFE	RABBIT
AGROVIDAR	EQUI-GAN	MAFA	CITROMAZINC
AGROVIDAR	EQUI-TRI	PLANT H. CARE	PROACT
ARVENSIS	MYZZUS	SEIPASA	ABENTA
ATLANTICA	CANELYS	SEIPASA	AMICOS B
ATLANTICA	MIMOTEN	SEIPASA	AMICOS COMBI
BERLINEX	EKOCEN	SEIPASA	AMICOS Mc
BERLINEX	EKORGANIK	SEIPASA	AMICOS O
BIOFUNGITEX	LAREKI GREENS	SEIPASA	AMICOS SEC
BOTECME	bm-Nova	SEIPASA	AMICOS SYSTEM
BIOTECME	BM-Micenova Plus	SEIPASA	LACARTRON
CARBOTECNIA	CARBO ECO PH	SEIPASA	MAXITRON
EIBOL	F-BAC	SEIPASA	PACAR
EIBOL	F - ASPIR	SEIPASA	PIRETRINA NATURAL
EIBOL	F - RET	SEIPASA	SEILAND
EIBOL	F- TWIN	SEIPASA	SEISIL

3. Conclusion

With this document the actions of the Zero Residue Protocol have been conducted, evaluated and improved. As the project proposes different substances and techniques to achieve the goal, such actions have been designed and applied according to these principles and afterwards validated or discarded.

Expected results	Obtained results	Report/Indicators of progress
Sustainable and safe pathogen control. Less harmful substances have been used, yet the quality and yield of the fruit have been preserved.	SUCCESSFULLY ACHIEVED	Comparison of phytosanitary products consumption before, during and after the project is executed. Compliance with the project's goals proven by laboratory reports.
Soil condition have been improved, both in terms of structure and nutrient availability.	SUCCESSFULLY ACHIEVED	Comparison of soil conditions before, during and after the project is executed.
Fertilization requirements have been met with a smaller input of fertilizers	SUCCESSFULLY ACHIEVED	Comparison of fertilizer consumption before, during and after the project is executed.
Reduction of Carbon emissions	SUCCESSFULLY ACHIEVED	GHG can be assessed as per the amount of fertilizer units and other inputs consumed, the amount of diesel used by the machinery during the cycle and the consumption of electricity, then compared with the readings before, during and after the project is executed.

4. Annex

Annex I – Stone fruit current MRLs

Pesticide residues and maximum residue levels (mg/kg)

(*) Indicates lower limit of analytical determination

Pesticides - Web Version - EU MRLs (File created on 24/05/2017)

a) FUNGICIDES

Code number	0140010	0140020	0140030
Groups and examples of individual products to which the MRLs apply (a)	Apricots	Cherries (sweet)	Peaches
Chlorothalonil (R)	1 (ft)	0.01*	1 (ft)
Dithiocarbamates (dithiocarbamates expressed as CS ₂ , including maneb, mancozeb, metiram, propineb, thiram and ziram)	2 (ft)	2 (ft)	2 (ft)
Thiram (expressed as thiram)	3	3	3
Dodine	0.1	3	0.1
Trifloxystrobin (A) (F) (R)	3	3	3
Bupirimate	0.3	0.05*	0.3
Captan (Sum of captan and THPI, expressed as captan) (R) (A)	6 (ft)	6 (ft)	6 (ft)
Cyproconazole (F)	0.1	0.1	0.1
Cyprodinil (F) (R)	2	2	2
Fludioxonil (F) (R)	5	5	10
Penconazole (F)	0.1	0.05*	0.1
Difenoconazole	0.5	0.3	0.5
Fenbuconazole	1	1	0.5
Tebuconazole (R)	0.6	1 (ft)	0.6
Tetraconazole (F)	0.1	0.02*	0.1
Fenhexamid (F)	10	7	10
Iprodione (R)	6 (ft)	10 (ft)	10 (ft)
Myclobutanyl (R)	0.3	3	0.5
Quinoxifen (F)	0.05	0.3	0.05
Thiophanate-methyl (R)	2	0.3	2

Pesticide residue	Legislation	Entry in force
Chlorothalonil (R)	Reg. (EU) 2016/67	22/01/2016
Dithiocarbamates (dithiocarbamates expressed as CS ₂ , including maneb, mancozeb, metiram, propineb, thiram and ziram)	Reg. (EU) 2017/171	03/02/2017
Thiram (expressed as thiram)	Reg. (EU) 2016/1	05/01/2016
Dodine	Reg. (EU) 2016/1002	24/06/2016
Captan (Sum of captan and THPI, expressed as captan) (R) (A)	Reg. (EU) No 2016/452	30/03/2016
Trifloxystrobin (A) (F) (R)	Reg. (EU) 2017/626	07/04/2017
Bupirimate	Reg. (EU) 2015/846	05/06/2015
Cyproconazole (F)	Reg. (EU) 2017/171	03/02/2017
Cyprodinil (F) (R)	Reg. (EU) 2017/626	07/04/2017
Fludioxonil (F) (R)	Reg. (EU) 2016/1902	04/11/2016
Penconazole (F)	Regulation (EU) 2015/401	14/03/2015
Difenoconazole	Reg. (EU) 2017/626	07/04/2017
Fenbuconazole	Reg. (EU) No 491/2014	16/05/2014
Tebuconazole (R)	Reg. (EU) 2017/626	07/04/2017
Tetraconazole (F)	Reg. (EU) No 34/2013	26/01/2013
Fenhexamid (F)	Reg. (EU) 2015/1200	23/07/2015
Iprodione (R)	Reg. (EU) 2015/400	14/03/2015
Myclobutanyl (R)	Reg. (EU) 2016/567	15/04/2016
Quinoxifen (F)	Reg. (EU) No 36/2014	21/01/2014
Thiophanate-methyl (R)	Reg. (EU) No 559/2011	11/06/2011

Footnotes	
Chlorothalonil (R)	(R) = The residue definition differs for the following combinations pesticide-code number:
	Chlorothalonil - codes 1000000 to 1070000, except 1040000: 2,5,6-trichloro-4-hydroxyphthalonitrile (SDS-3701)
	0140010 : Apricots
	The European Food Safety Authority identified some information on residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 29 October 2016, or, if that information is not submitted by that date, the lack of it. Moreover, the European Food Safety Authority highlights that the metabolite 2,5,6-trichloro-4-hydroxyphthalonitrile (SDS-3701) has not been taken into account, given that a validated method for enforcement, a complete set of residue trials, storage stability studies and data on processing of SDS-3701 are unavailable for all plant commodities. When re-viewing the MRL, the Commission will take this information into account, if it is submitted by 29 October 2016, or, if that information is not submitted by that date, the lack of it.
	0140030 : Peaches
	The European Food Safety Authority identified some information on residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 29 October 2016, or, if that information is not submitted by that date, the lack of it. Moreover, the European Food Safety Authority highlights that the metabolite 2,5,6-trichloro-4-hydroxyphthalonitrile (SDS-3701) has not been taken into account, given that a validated method for enforcement, a complete set of residue trials, storage stability studies and data on processing of SDS-3701 are unavailable for all plant commodities. When re-viewing the MRL, the Commission will take this information into account, if it is submitted by 29 October 2016, or, if that information is not submitted by that date, the lack of it.
Dithiocarbamates (dithiocarbamates expressed as CS2, including maneb, mancozeb, metiram, propineb, thiram and ziram)	In brackets the origin of the residue (ma: maneb; mz: mancozeb; me: metiram; pr: propineb; t: thiram; z: ziram).
	The MRLs expressed as CS2 can arise from different dithiocarbamates and therefore they do not reflect a single Good Agricultural Practice (GAP). It is therefore not appropriate to use these MRLs to check compliance with a GAP.
	0140010 : Apricots
	(mz, t)
	0140020 : Cherries (sweet)
	(mz, me, pr, t, z)
	0140030 : Peaches
(mz, t)	
Thiram (expressed as thiram)	As all dithiocarbamates result in the final CS2 residue, discrimination among them is generally not possible. However single residue methods are available for propineb, ziram and thiram. These methods should be implemented on a case by case basis when the specific quantification of propineb, ziram and/or thiram is required.

Captan (Sum of captan and THPI, expressed as captan) (R) (A)	(A) = The EU reference labs identified the reference standard for 3-OH THPI and 5-OH THPI as commercially not available. When re-viewing the MRL, the Commission will take into account the commercial availability of the reference standard referred to in the first sentence by 30 March 2017, or, if that reference standard is not commercially available by that date, the unavailability of it.
	(R) = The residue definition differs for the following combinations pesticide-code number:
	code 100000 except 1040000: Sum of THPI, 3-OH THPI and 5-OH THPI, expressed as captan; code 0151020: captan
	0140010 : Apricots
	The European Food Safety Authority identified some information on analytical methods as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by [Office of Publication: please insert date 2 years after publication], or, if that information is not submitted by that date, the lack of it.
	0140020 : Cherries (sweet)
	The European Food Safety Authority identified some information on analytical methods as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by [Office of Publication: please insert date 2 years after publication], or, if that information is not submitted by that date, the lack of it.
Cyproconazole (F)	(F) = Fat soluble
	(F) = Fat soluble
Cyprodinil (F) (R)	(R) = The residue definition differs for the following combinations pesticide-code number:
	Cyprodinil - code 1000000 except 1020000, 1040000: Cyprodinil (sum of cyprodinil and CGA 304075 (free), expressed as cyprodinil)
	Cyprodinil-1020000: Cyprodinil (Sum of cyprodinil and CGA 304075 (free and conjugated), expressed as cyprodinil)
Fludioxonil (F) (R)	(F) = Fat soluble
	(R) = The residue definition differs for the following combinations pesticide-code number:
	Fludioxonil - code 1000000 except 1040000 : sum of fludioxonil and its metabolites oxidized to metabolite 2,2-difluoro-benzo[1,3]dioxole-4 carboxylic acid
Penconazole (F)	(F) = Fat soluble
Tebuconazole (R)	(R) = The residue definition differs for the following combinations pesticide-code number:
	tebuconazole-code 1000000 except 1040000: sum of tebuconazole, hydroxy-tebuconazole, and their conjugates, expressed as tebuconazole
	0140020 : Cherries (sweet)
	The European Food Safety Authority identified some information on residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the

	first sentence, if it is submitted by 25 January 2016, or, if that information is not submitted by that date, the lack of it.
Tetraconazole (F)	(F) = Fat soluble
Fenhexamid (F)	(F) = Fat soluble
Iprodione (R)	(R) = The residue definition differs for the following combinations pesticide-code number:
	Iprodione - code 1000000 except 1040000: Sum of iprodione and all metabolites containing the 3,5-dichloroaniline moiety, expressed as iprodione
	0140010 : Apricots
	The European Food Safety Authority identified some information on storage stability, analytical methods, crop metabolism and residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 14 March 2017, or, if that information is not submitted by that date, the lack of it.
	0140020 : Cherries (sweet)
	The European Food Safety Authority identified some information on storage stability, analytical methods, crop metabolism and residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 14 March 2017, or, if that information is not submitted by that date, the lack of it.
Myclobutanyl (R)	(R) = The residue definition differs for the following combinations pesticide-code number:
	Myclobutanyl - code 1000000 except 1040000: Alpha-(3-hydroxybutyl) - alpha - (4-chloro-phenyl) - 1H - 1,2,4 - triazole -1-propanenitrile (RH9090) expressed as myclobutanil
	0140030 : Peaches
Quinoxifen (F)	(F) = Fat soluble
Thiophanate-methyl (R)	(R) = The residue definition differs for the following combinations pesticide-code number:
	Thiophanate-methyl - code 1000000: Carbendazim and thiophanate-methyl, expressed as carbendazim
Trifloxystrobin (A) (F) (R)	(A) = The EU reference labs identified the reference standard for CGA321113 as commercially not available. When re-viewing the MRL, the Commission will take into account the commercial availability of the reference standard referred to in the first sentence by 23 July 2016, or, if that reference standard is not commercially available by that date, the unavailability of it.
	(F) = Fat soluble
	(R) = The residue definition differs for the following combinations pesticide-code number:
	Trifloxystrobin- code 1000000 except 1040000: the sum of trifloxystrobin and its metabolite (E, E)-methoxyimino- {2-[1-(3-trifluoromethyl-phenyl)-ethylideneamino-oxymethyl]-phenyl}-acetic acid (CGA 321113)

b) INSECTICIDES

Code number	0140010	0140020	0140030
Groups and examples of individual products to which the MRLs apply (a)	Apricots	Cherries (sweet)	Peaches
Spinosad (spinosad, sum of spinosyn A and spinosyn D) (F)	0.6	0.2	0.6
Tau-Fluvalinate (F)	0.3	0.5	0.3
Deltamethrin (cis-deltamethrin) (F)	0.15 (ft)	0.1 (ft)	0.15 (ft)
Lambda-Cyhalothrin (F) (R)	0.2	0.3	0.2
Pymetrozine (A) (R)	0.03 (ft)	0.02*	0.03 (ft)
Pyriproxyfen (F)	0.05*	1	0.5
Flonicamid: sum of flonicamid, TFNA and TFNG expressed as flonicamid (R)	0.03*	0.4 (ft)	0.4
Acetamiprid (R)	0.8	1.5	0.8
Deltamethrin (cis-deltamethrin) (F)	0.15 (ft)	0.1 (ft)	0.15 (ft)
Acrinathrin (F)	0.3	0.2	0.2
Azadirachtin	1	1	1

Pesticide residue	Legislation	Entry in force
Spinosad (spinosad, sum of spinosyn A and spinosyn D) (F)	Reg. (EU) 2015/603	17/04/2015
Tau-Fluvalinate (F)	Reg. (EU) 2015/846	05/06/2015
Deltamethrin (cis-deltamethrin) (F)	Reg. (EU) 2016/1822	18/10/2016
Lambda-Cyhalothrin (F) (R)	Reg. (EU) 2017/626	07/04/2017
Pymetrozine (A) (R)	Regulation (EU) 2015/401	14/03/2015
Pyriproxyfen (F)	Reg. (EU) 2016/1902	04/11/2016
Flonicamid: sum of flonicamid, TFNA and TFNG expressed as flonicamid (R)	Reg. (EU) 2016/1902	04/11/2016
Acetamiprid (R)	Reg. (EU) 2017/626	07/04/2017
Deltamethrin (cis-deltamethrin) (F)	Reg. (EU) 2016/1822	18/10/2016
Acrinathrin (F)	Reg. (EC) No 839/2008	30/08/2008
Azadirachtin	Reg. (EC) No 149/2008	01/03/2008

Footnotes	
Spinosad (spinosad, sum of spinosyn A and spinosyn D) (F)	(F) = Fat soluble
Tau-Fluvalinate (F)	(F) = Fat soluble
Deltamethrin (cis-deltamethrin) (F)	(F) = Fat soluble
	0140010 : Apricots
	The European Food Safety Authority identified some information on analytical methods and residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 18 October 2018, or, if that information is not submitted by that date, the lack of it.
	0140020 : Cherries (sweet)
	The European Food Safety Authority identified some information on analytical methods and residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 18 October 2018, or, if that information is not submitted by that date, the lack of it.
	0140030 : Peaches
Lambda-Cyhalothrin (F) (R)	(F) = Fat soluble
	(R) = The residue definition differs for the following combinations pesticide-code number:
	Lambda-Cyhalothrin - code 1000000 except 1040000: Lambda-cyhalothrin, including other mixed isomeric constituents (sum of isomers)

Pymetrozine (A) (R)	(A) = The EU reference labs identified the reference standards for 6-hydroxymethylpymetrozine and its phosphate conjugate as commercially not available. When re-viewing the MRL, the Commission will take into account the commercial availability of the reference standards referred to in the first sentence by 23 April 2015, or, if those reference standards are not commercially available by that date, the unavailability of them.
	(R) = The residue definition differs for the following combinations pesticide-code number: Pymetrozine - code 1020000: pymetrozine, 6-hydroxymethylpymetrozine and its phosphate conjugate, expressed as pymetrozine
	0140010 : Apricots
	The European Food Safety Authority identified some information on storage stability as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 23 April 2016, or, if that information is not submitted by that date, the lack of it.
	0140030 : Peaches
	The European Food Safety Authority identified some information on storage stability as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 23 April 2016, or, if that information is not submitted by that date, the lack of it.
Pyriproxyfen (F)	(F) = Fat soluble
Flonicamid: sum of flonicamid, TFNA and TFNG expressed as flonicamid (R)	(R) = The residue definition differs for the following combinations pesticide-code number:
	Flonicamid – code 1000000, except code 1040000: Sum of flonicamid and TFNA-AM, expressed as flonicamid
	0140020 : Cherries (sweet)
	The European Food Safety Authority identified some information on residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 27 January 2018, or, if that information is not submitted by that date, the lack of it.
Acetamiprid (R)	(R) = The residue definition differs for the following combinations pesticide-code number:

	Acetamiprid - code 100000 except 104000: Sum of acetamiprid and N-desmethyl-acetamiprid (IM-2-1), expressed as acetamiprid
Deltamethrin (cis-deltamethrin) (F)	(F) = Fat soluble
	0140010 : Apricots
	The European Food Safety Authority identified some information on analytical methods and residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 18 October 2018, or, if that information is not submitted by that date, the lack of it.
	0140020 : Cherries (sweet)
	The European Food Safety Authority identified some information on analytical methods and residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 18 October 2018, or, if that information is not submitted by that date, the lack of it.
Acrinathrin (F)	0140030 : Peaches
	The European Food Safety Authority identified some information on analytical methods and residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 18 October 2018, or, if that information is not submitted by that date, the lack of it.
	(F) = Fat soluble