

# *The National Chart*

*On Good Practices in Pest Control  
and Traceability of Apple  
Production in Lebanon*



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**ENPARD**  
SOUTH

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for Agriculture and Rural Development



**CIHEAM**  
IAM MONTPELLIER



**Republic of Lebanon**  
**Ministry of Agriculture**  
**The Minister**

Decision No.1 \ 516  
Date : 05/07/2018.

*Regarding the procedures for the compliance to the National Chart  
On Good Practices in Pest Control and Traceability of Apple  
Production in Lebanon*

**The Minister of Agriculture,**

Based on the Decree No. 3 of 8/12/2016 (Formation of the Government),

Based on the Legislative Decree No. 97 dated 16/9/1983 and its amendments (incorporation of public institutions into the Ministry of Agriculture),

Based on the Decree No. 5246 dated 20/6/1994 and its amendments (Organization of the Ministry of Agriculture),

Based on the Law No. 31 dated 18/1/1955 and its amendments (specifying the duties of the Ministry of Agriculture),

Based on the strategy of the Ministry of Agriculture for the years 2015-2019, especially in terms of ensuring proper and safe food, increasing the competitiveness of Lebanese agricultural products through the support of production value chains, achieving growth in Lebanese exports, and in order to motivate apple producers to comply with the application of the requirements of good agricultural practices, field registry and proper selection of cooling and packaging centers abiding by good storage practices within an integrated traceability system.

And following the National Chart on good practices in pest control and traceability of apple production in Lebanon which was developed in collaboration with the European Neighborhood Policy Program for Agriculture and Rural Development (ENPARD),

And after consultation and coordination with stakeholders in the apple production sector,

And at the suggestion of the Director General of Agriculture,

## **Decides the following:**

### **Article 1:**

The National Chart on Good Practices in Pest Control and Traceability of Apple Production in Lebanon (Appendix 1) is to be adopted and applied by the affiliated apple producers..

### **Article 2:**

Apple producers wishing to join this Chart (mentioned in Article 1) must apply for a membership in the Directorate of Agricultural Resources according to (Form No. 1) during the specified period.

### **Article 3:**

The Directorate of Agricultural Resources shall propose to the Minister of Agriculture the draft decision to establish the steering committee as stated in the Chart no later than three months from the date of issuance of this decision.

### **Article 4:**

This decision shall be implemented immediately upon its publication and relevant notification.

A copy shall be delivered to:

- President of the Council of Ministers.
- Central Inspection Board.
- Official Gazette (for publication).
- The Federation of Chambers of Commerce, Industry and Agriculture.
- Syndicate of producers and exporters of apples.
- General Directorate of Cooperatives.
- Lebanese Agricultural Research Institute.
- Directorate of Agricultural Resources.
- Studies and Coordination Directorate / Education and Guidance Service.
- Regional Institutes of the Ministry of Agriculture.
- Documentation and IT Bureau: Website of the Ministry of Agriculture.
- E-mail
- Archives

**Beirut 05/07/2018**

**Minister of Agriculture  
Ghazi Zeaiter**

**ANNEX 1**

**The National Chart On Good Practices In  
Pest Control And Traceability Of Apple  
Production In Lebanon**

The national document on Good Practices in Pest Control and Traceability of Apple Production in Lebanon was prepared in cooperation between the Ministry of Agriculture and producers of apples. This document aims at promoting sound and sustainable agricultural practices of apples in accordance with sanitary and phytosanitary standards and ensuring the preservation of the environment to overcome current challenges related to the development of the apple production chain.

The lack of sound agricultural practices leads to higher production costs which lower a product's competitiveness, results in a product that is not compliant with health specifications in terms of pesticide residues and damages the environment in a way that often can't be corrected due to the improper use of pesticides.

The Ministry of Agriculture encourages apple producers to comply with the requirements of technical specifications of good agricultural practices, maintain the field registry, and select refrigeration and packaging centers that follow good conservation practices through an integrated tracking system.

The Ministry of Agriculture is committed to publish a list of all implementing producers of the national chart along with its signatories on its official website. This list shall be updated annually following evaluation results which show the extent to which the producers comply with the principles of the chart.

The chart includes:





## **The chart includes:**

### **Article 1 – Definition of the national chart**

The document is an optional commitment for apple producers to apply sound agricultural practices that enables them to control pests in their fields and track their final product through:

1. Adopting the pest control manual of this document
2. Keeping a field record
3. Adoption of refrigeration and packaging centers that adhere to good conservation practices through an integrated tracking system.

### **Article 2: organizing the national document's enrollment process**

An application form is submitted to the director of agricultural resources each January and is referred to the steering committee for their review and decision.

Each applicant should:

1. Fill an enrollment form by the legal representative of the producers along with his stamp and signature (in accordance with Form No. 1 attached with the document).
2. Submit recent documents that confirm that an applicant meets the special conditions of membership mentioned in Form 1, which proves that the applicant is committed to the following:
  - Adherence to the special conditions book that draws attention to good pest control practices when working with apple crops and maintains field records that allows the product to be tracked through different stages of production and marketing.
  - The adoption of an internal control system by producers in different fields, so that they monitor all the fields and present the needed documentation proving their commitment to the requirements on a regular basis. In addition, producers must disclose the aforementioned results with the external control system.
  - The adoption of a field-level tracking system that enables product tracking at various stages.
  - Adoption of an external control system through an internationally accredited control company in accordance with ISO / IEC Guide 17065 which sets standards by which the certification bodies for products, processes and services are accredited. The inspection

company shall send a copy of the disclosure report to both the associate and the steering committee within one week of the whole disclosure process as well as a copy of the annual report during the first month of each year.

- If a violation is found that may lead to contamination of the final product, the offending farmer or producer of the document is excluded, and the Steering Committee shall notify him within 48 hours.
- The steering committee considers the results of the inspection company and proposes membership renewals or terminations according to the number of violations and their recurrence, and the effect of these violations on the overall safety of the product.

3. Affiliates are registered in a register dedicated to apple producers.

### **Article 3 - composition of national chart's steering committee and its functions**

1 – The committee is formed by a decree from the Minister of Agriculture for the duration of three years, apt for renewable.

2 – The committee will include:

- The relevant units of the Ministry of Agriculture in the following: plant protection, phytosanitary products, organizing the workflow of cold storage and packaging centers, departments that deal with traceability of agricultural products...

- Representatives of producers from main apple producing regions in Lebanon.

- Audit Engineers responsible for supervising the proper application of the technical specifications document of the members.

3 – Once the committee has been formed, it will create its own internal regulations.



#### 4 – The tasks of the steering committee:

- Follow-up implementation of the national chart by the members.
- Review and update the contents of the document during the first month of each year.
- Study applications and approve them after verification within a maximum period of one month from the date of receipt.
- Propose appropriate measures against producers who violate the conditions of affiliation specified in Article II.
- Communicate with the members with regards to the national document's execution.
- Express their opinion on the policies / programs of the apple production sector.
- Review and update the pesticide usage manual for apple crops annually.





**APPLICATION FORM**

**For Adherence to the national chart  
On good practices of pest control and traceability of apple  
production in Lebanon**

1. Name of the adherent .....
2. Adherent status    ☐ Producer    ☐ Cooperative    ☐ Other please
3. Address of the adherent .....
4. Phone number: .....
5. Fax number: .....
6. Email: .....
7. If the adherent is a cooperative's member farmer

**Name of the cooperative** .....

**Address** .....

**Phone number** .....

I apply for membership to Good Practices of Pest Control and  
Traceability of Apples Production in Lebanon in accordance with the  
content of the decision    *number*.....    *date*.....

**Name**

**Signature and stamp  
(tax stamp 1000 LBP):**

**Date**

**Attached:**

- Copy of applicant's identity
- Submit updated documents confirming the applicant's fulfillment of the special conditions for membership (as per article 2 of the national chart)



## ***Phytosanitary plant protection guide on good agricultural practices of pest control and traceability of Apples Production in Lebanon***

This guide is the result of a tripartite partnership between the Ministry of Agriculture in Lebanon, nine agricultural cooperatives and the support program to the ENPARD initiative in the Mediterranean. It was initiated in response to the last health crisis caused by pesticide residues which severely affected the apple sector in Lebanon, had a strong impact on the apple exports and thus, on the farmers' income.

Furthermore, plant protection treatments represent a significant financial burden, which could increase the production cost and reduce the possibilities for Lebanon's apple to compete in the global market.

This initiative has generated a certain infatuation among all the stakeholders involved in the apple value chain. This enthusiasm has been fed by a real determination from the Lebanese government to introduce reforms in this area through the elaboration and implementation of a homologation procedure of the plant protection phytosanitary use.

On the other hand, the agricultural cooperatives, partners in this initiative, and whose practices incorporate the compliance with the specifications, aspire now to have tools that would allow them to better manage all of the healthy and sustainable practices that regulate the use of plant protection products.

To meet the expectations of these two actors - and to achieve the objective to "develop and implement renewed public policies to face the challenges of food security and improvement of local governance in the territories, while preserving limited natural resources and fostering the emergence of a balanced and inclusive economic growth"- the ENPARD Mediterranean program, supported by experts, led the development and implementation of this guide through a participatory inclusive approach. This process allowed 15 stakeholders, representing 6 Institutions, to participate in 10 meetings and workshops. The phytosanitary plant protection guide, intended for farmers, is aimed at reducing the use of pesticides and their environmental impacts. It is an integral part of the national Chart on good agricultural practices for pest management and on the traceability of



plant protection products applied to the apple sector. This Chart, approved and adopted by all the stakeholders, enabled the Ministry of Agriculture and the cooperatives to combine their efforts on a work basis allowing the respect of good agricultural practices, and to launch the process of developing the apple sector.

This guide is designed to evolve. It can integrate any achievements through the formation of a steering committee, whose composition and duties are described in article 3 of the national Chart. This committee will have, inter alia, to ensure the monitoring and assessment of the implementation of the national Chart, and to update this guide annually.

Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
Copper oxychloride	300 - 600	3 j	-	24	6kg*		*Maximum of 6kg/ha/year of metal copper	Dithianon	
Copper Hydroxide	15 - 200	sur bois	-	24					
Copper sulfate	400 - 600	before blooming	-	After dryness					
Potassuim bicarbonate			-						
lime sulfure*			-		5			Thiram	
Captan	150 - 250	10	-	48				Fenbuconazole	
Mancozeb 75 WG	200 - 225	45	4	24		4*			register in MOA
Mancozeb 75 WP	200 - 225	45	4	24					
Propineb	150	7	NA	After dryness					
Trifloxystrobin	15	15	1	After dryness					
Pyraclostrobin + Boscalid	100 - 130	7	5	24	3(**)	5	(**)suspend the treatments directly after the flowering	Fludioxonil	
Pyrimethanil	75	28	3	24	(*)		* It is recommended to use in combination products with different modes of action	Sulfate de cuivre	
Cyprodinil	30 - 45	60	2		(*)	3			

Red : High toxicity

Purple : moderate toxicity

Green : plant-based product

Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
Penconazole	30 -40 ml	14	1	48					
Myclobutanil	20 - 25 ml	25	3	After dryness	2	4			
Tetraconazole	25 - 50 ml	14	1	24					
Difenconazole	10 - 20 ml	14	2	is not reported					
Sulfure 72 SC	1.4 - 2.3 l	before blooming	-	24				Cyflufenamid	
Sulfre 80% WG	500 - 750 g (bourgeonnemnt), 750 g (avt bourgeonnment), 300 - 500 g (apres)	21	-	After dryness					
Potassuim bicarbonate	750 g		-						Can be used once registred
Trifloxystrobin	15	15	1	After dryness		3			
Pyraclostrobin +Boscalid	100 - 130	7	5	24	3	4*			
Penconazole	30 -40 ml	14	1	48	2	4	It is recommended to use IBE in mixture with other fungicides	Buperymate	



Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/HI	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
<b>Myclobutanil</b>	<b>20 - 25 ml</b>	<b>28</b>	<b>3</b>					<b>Fluopyram + Tebuconazole</b>	
<b>Tetraconazole</b>	<b>25 - 50 ml</b>	<b>14</b>	<b>1</b>	<b>24</b>					
<b>Difenconazole</b>	<b>10 - 20 ml</b>	<b>14</b>	<b>2</b>	<b>is not reported</b>					
<b>Copper oxychloride</b>	<b>300 - 600</b>	<b>3 j</b>	<b>-</b>	<b>24</b>	<b>6kg*</b>		<b>*Maximum of 6kg/ha/year of metal copper</b>		
<b>Copper Hydroxide</b>	<b>15 - 200</b>	<b>sur bois</b>	<b>-</b>	<b>24</b>					
<b>Copper sulfate</b>	<b>400 - 600</b>	<b>before blooming</b>	<b>-</b>	<b>immediately</b>					
<b>Copper oxychloride</b>	<b>300 - 600</b>	<b>3 j</b>	<b>-</b>	<b>24</b>	<b>6kg*</b>		<b>*Maximum of 6kg/ha/year of metal copper</b>	<b>Laminarine (replacement for Fosethyl Al)</b>	
<b>Copper Hydroxide</b>	<b>15 - 200</b>	<b>sur bois</b>	<b>-</b>	<b>24</b>	<b>4</b>				<b>Can be used once registred</b>
<b>Copper sulfate</b>	<b>400 - 600</b>	<b>before blooming</b>	<b>-</b>	<b>immediately</b>	<b>6</b>				
<b>Bacillus subtilis</b>		<b>Zero</b>	<b>8</b>						
<b>Bacillus amyloliquefaciens</b>		<b>Zero</b>	<b>10</b>						
<b>Against this disease only 2 treatments at max. per year</b>									
<b>Effective micro organism</b>	<b>200</b>	<b>Zero</b>	<b>NA</b>						

Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
Copper oxychloride	300 - 600	3 j	-	24		6kg*	*Maximum of 6kg/ha/year of metal copper	Pyraclostrobin + Boscalid	Can be used once registered
Copper Hydroxide	15 - 200	sur bois	-	24				Fludioxonil	
Copper sulfate	400 - 600	before blooming	-	immediately					
Metalaxyl-m (fenoxam)	40 g per tree	16	2	24					
fosetyl Aluminium	250 g	40	NA	1				Geoxe	
Azadiractine	200 - 300 ml	3	-				Two application at beginning of season & out of flowering	Flonicamid	
Potassium soap of fatty acid	200 ml		-					-	
Imidacloprid	35 ml	14	1	24	(*)	1			
Thiamethoxam	20 - 30 g	14	1	24	(*)		(*) treat only after flowering		
Acetamiprid	250 g	14	2	1	1				
Spirotetramat	65 - 100 ml	7	2	24	1*		(*) treat only after flowering		
Alfa Cypermethrin	10 - 15 ml	21	2	24	1	1			
Huile paraffinique	2 l	NA	-	6					
Azadiractine	200 - 300 ml	3	NA						
Imidacloprid	35 ml	14	1	24	(*)	1**			
Thiamethoxam	20 - 30 g	14	1	24	(*)		Allowed only after flowering		
Acetamiprid	25 g	14	2	1	1				
Alfa Cypermethrin	10 - 15 ml	21	2	24					
Huile paraffinique	2 l	NA	-	6					

Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
Spirotetramat	65 - 100 ml	7	2	24	1*		(*) Allowed only after floweing		
Imidacloprid	35 ml	14	1	24	1 (*)	1			
Thiamethoxam	20 - 30 g	14	1	24	1 (*)		(*) Allowed only after floweing		
Acetamiprid	25 g	14	2	1	1				
Alfa Cypermethrin	10 - 15 ml	21	2	24					
Spirotetramat	65 - 100 ml	7	2	24	1*		(*) Allowed only after floweing		
Mating disruption	1000 pieces / ha		-				Monitoring through traps on farm or monitoring network	Fenoxycarb	
Atract and kill	1 kg / ha		-						
Granulose Virus	1 - 2 pieces	Within 48 hours after frost	-	24			Alterner souche de virus entre les generations??	Thiaclopride	
Spinosad	25 - 30	7	2	24	3			Acetamiprid	
Diflubenzuron	40 g	30	NA	24	3	3*		Spinetoram	To check if it will be prohibited
Chlorpyriphos-ethyl	85 - 110 ml	30	2	24	3	4*	(*) Between Cloripiriphos ethyl	Nematode protection: Steynernema carpocapse	
Emamectin benzoat	25 - 35 g	14	3	24	2				
Alfa Cypermethrin	10 - 15 ml	21	2	24	1				
Chlorantraniliprole	17.5 -20 ml	14	1	24	2				
Flubendamide	25 - 35 ml	14	1						

Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
A maximum of 1 acaricide application per year									
Potassium soap of fatty acids	Potassium soap of fatty acids		-						
Koalinite Clay	1 kg		-						
Abamectine 1.8	75 ml	28	1	24		1			
Abamectine 8.4	16 - 20 ml	28	1						
Etoxazole	25 - 50 ml	28	1	24					
Hexythiazox	400 g	30	1	is not reported					
Milbemectin	100 ml	1	3	is not reported					
Pyridaben	50 - 100	15	-	24					
Acequinocyl	60 - 100 ml	7	1	24					
Huile parifinique	2 l	NA	-	6					
Spirodiclofen	40 ml	21	1	48					
Bacillus thuringiensis	30 - 450 g	1	10	1					
Granulose Virus	1 - 2 pieces	With in 48 hours after frost	-	24					
Spinosad	25 - 30	7	2	24					
Diflubenzuron	40 g	30	-	24	3				
Chlorpyrifos-ethyl	85 - 110 ml	30	2	24	3	3*			
Emamectin benzoat	25 - 35 g	14	3	24	2				
Alfa Cypermethrin	10 - 15 ml	21	2	24	2*		* do not use against <i>Archips podanus</i>		



Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
Chlorantraniliprole	17.5 -20 ml	14	1	24					
Flubendamide	25 - 35 ml	14	1		4				
Treatments allowed only against the second and the third generation									
Spinosad	25 - 30	7	2	24	3				
Imidacloprid	35 ml	14	1	24	(*)	1**			
Thiamethoxam	20 - 30 g	14	1	24	(*)		(*) Allowed only after flowering		
Acetamiprid	25 g	14	2	1	1		(**) Included between Thiametoxam		
Emamectin Benzoat	25 - 35 g	14	3	24	2				
Alfa Cypermethrin	10 - 15 ml	21	2	24					
Chlorantraniliprole	17.5 -20 ml	14	1	24	2				
<i>Bacillus thuringiensis</i>	30 - 450 g	1	10	1			Preference in presence of larva superior to 1%*		
Diflubenzuron	40 g	30	-	24		3*		-	
Pheromone traps			-						
<i>Bacillus thuringiensis</i>	30 - 450 g	1	10	1					
Pheromone traps			-				Installation from early May 1 trap/ha.		
mating disruption			-						
Diflubenzuron	40 g	30	-	24	2	3*			

Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/HI	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
Bacillus thuringiensis	30 - 450 g	1	10	1					
Intervention allowed only in low altitude areas									
Attract and kill with Deltametrine or Spinosad			-					Magnet Med	
Chlorpyrifos-ethyl	85 - 110 ml	30	2	24					
Acetamiprid	25 g	14	2	1	2	4*	(*) Between Clorpiriphos ethyl	Desistrap	
Deltametrine	30 m l	7	3	48		1*	(*) Between Imidacloprid, Thiametoxam	Kaolinite (clay)	
Lambda Cyhalothrin.	7.5 ml	14	1	24	1*	2	(*) Against this pest		
Attract and kill with trimedlure + abamectin			-		1				
Pyrethrin 5 EC	335- 125 ml	1	1	12					

Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum Number Of Application/ Year	Delay Of Entry (Hours)	(1)	(2)	Remarks And Restrictions	French Active Ingredient	Note
Bacillus thuringiensis	30 - 450 g	1	10	1					
Intervention allowed only in low altitude areas									
Attract and kill with Deltametrine or Spinosad			-					Magnet Med	
Chlorpyrifos-ethyl	85 - 110 ml	30	2	24					
Acetamiprid	25 g	14	2	1	2	4*	(*) Between Clorpiriphos ethyl	Desistrap	
Deltametrine	30 m l	7	3	48		1*	(*) Between Imidacloprid, Thiametoxam	Kaolinite (clay)	
Lambda Cyhalothrin.	7.5 ml	14	1	24	1*	2	(*) Against this pest		
Attract and kill with trimedlure + abamectin			-		1				
Pyrethrin 5 EC	335- 125 ml	1	1	12					

Disease Or Pest	Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum water volume / Year	Delay Of Entry (Hours)
Scab ( <i>Venturia inaequalis</i> )	Copper oxychloride	300 - 600	3 j	1000 l	24
	Copper Hydroxide	15 - 200	sur bois	1000 l	24
	Copper sulfate	400 - 600	before blooming	1000 l	After dryness
	Potassium bicarbonate	500-800	0 day	No limit	Immediately
	lime sulfur*	600-1000	2	No limit	1 day
	Captan	150 - 250	10	1000 l	48
	Mancozeb 75 WG	200 - 225	45	1000 l/ha	24
	Mancozeb 75 WP	200 - 225	45	1000 l/ ha	24
	Propineb	150	7	1000 l	After dryness
	Trifloxystrobin	15	15	1000 l	After dryness
	Pyraclostrobin + Boscalid	100 - 130	7	1000 l/ha	24
	Pyrimethanil	75	28	1000 l	24
	Cyprodinil	30 - 45	60		
	Penconazole	30 -40 ml	14	1000 l/ha	48
	Myclobutanil	20 - 25 ml	25	1000 l/ ha	After dryness
	Tetraconazole	25 - 50 ml	14	1000 l/ha	24
	Difenconazole	10 - 20 ml	14	1000 l/ ha	is not reported
Powdery Mildew ( <i>Podosphaera leucotricha</i> , <i>Oidium farinosum</i> )	Sulfure 72 SC	1.4 - 2.3 l	before blooming	1000 l/ha	24
	Sulfre 80% WG	500 - 750 g (bourgeonnement), 750 g (avt bourgeonnement), 300 - 500 g (apres)	21	1000 l/ ha	After dryness
	Potassium bicarbonate	500-800	0 day	No limit	Immediately
	Trifloxystrobin	15	15	1000 l	After dryness
	Pyraclostrobin +Boscalid	100 - 130	7	1000 l/ha	24
	Penconazole	30 -40 ml	14	1000 l/ha	48
	Myclobutanil	20 - 25 ml	28	1000 l/ha	
	Tetraconazole	25 - 50 ml	14	1000 l/ ha	24
	Difenconazole	10 - 20 ml	14	1000 l/ ha	is not reported
European Canker ( <i>Nectria galligena</i> )	Copper oxychloride	300 - 600	3 j	1000 l/ha	24
	Copper Hydroxide	15 - 200	sur bois	1000 l/ha	24
	Copper sulfate	400 - 600	before blooming	1000 l/ha	immediately
Fire blight ( <i>Erwinia amylovora</i> )	Copper oxychloride	300 - 600	3 j	1000 l/ha	24
	Copper Hydroxide	15 - 200	sur bois	1000 l/ha	24
	Copper sulfate	400 - 600	before blooming	1000 l/ha	immediately
	<i>Bacillus subtilis</i>	400	Zero		Immediately
	<i>Bacillus amyloliquefaciens</i>	400	Zero		Immediately



Disease Or Pest	Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum water volume/ Year	Delay Of Entry (Hours)
<b>Crown rot (Phytophthora spp.)</b>  Against this disease only 2 treatments at max. per year	Effective micro organism	200	Zero	1000 l/ha	Immediately
	Copper oxychloride	300 - 600	3 j	1000 l/ha	24
	Copper Hydroxide	15 - 200	sur bois	1000 l/ha	24
	Copper sulfate	400 - 600	before blooming	1000 l/ha	immediately
	Metalaxyl-m (fenoxam)	40 g per tree	16	1000 l/ha	48
	fosetyl Aluminium	250 g	40	1000 l/ ha	1
<b>Rosy Aphid (Dysaphis plantaginea)</b>	Azadiractine	200 - 300 ml	3	1000 l/ha	immediately
	Potassuim soap of fatty acid	200 -400ml	zero	1000 l/ha	immediately
	Imidacloprid	35 ml	14	1000 l/ha	24
	Thiamethoxam	20 - 30 g	14	1000 l/ ha	24
	Acetamiprid	250 g	14	is not reported	1
	Spirotetramat	65 - 100 ml	7	1000 l/ha	24
	Alfa Cypermethrin	10 - 15 ml	21	1000 l/ ha	24
	Huile parifinique	2 l	NA	1000 l	6
<b>Green aphid (Aphis pomi)</b>	Azadiractine	200 - 300 ml	3	1000 l/ha	24
	Imidacloprid	35 ml	14	1000 l/ha	24
	Thiamethoxam	20 - 30 g	14	1000 l/ ha	24
	Acetamiprid	25 g	14	is not reported	1
	Alfa Cypermethrin	10 - 15 ml	21	1000 l/ ha	24
	Huile parifinique	2 l	NA	1000 l	6
	Spirotetramat	65 - 100 ml	7	1000 l/ha	24
	Imidacloprid	35 ml	14	1000 l/ha	24
<b>Woolly Aphid Eriosoma lanigerum</b>	Thiamethoxam	20 - 30 g	14	1000 l/ ha	24
	Acetamiprid	25 g	14	is not reported	1
	Alfa Cypermethrin	10 - 15 ml	21	1000 l/ ha	24
	Spirotetramat	65 - 100 ml	7	1000 l/ha	24
	Imidacloprid	35 ml	14	1000 l/ha	24
<b>Carpocapse or codling moth (Cydia pomonella)</b>	Mating disruption	1000 pieces / ha	Zero	NA	Immediately
	Attract and kill	1 kg / ha	Zero	NA	Immediately
			With in 48 hours after frost		
	Granulose Virus	1 - 2 pieces		1000 l/ ha	24
	Spinosad	25 - 30	7	1000 l/ha	24
	Diflubenzuron	40 g	30	1000 l/ ha	24
	Chlorpyriphos-ethyl	85 - 110 ml	30	1000 l/ha	24
	Emamectin benzoat	25 - 35 g	14	1000 l/ ha	24
	Alfa Cypermethrin	10 - 15 ml	21	1000 l/ ha	24
	Chlorantraniliprole	17.5 -20 ml	14	1000 l/ha	24
	Flubendamide	25 - 35 ml	14		

Disease Or Pest	Active Ingredient For Integrated Agriculture	Dose(Ml Or G)/Hl	Phi	Maximum water volume/ Year	Delay Of Entry (Hours)
Red spider mites (Panonychus ulmi)	Potassium soap of fatty acids	200 ml			
	koalinite clay	1 kg			
	Abamectine 1.8	75 ml	28	1000 l	24
	Abamectine 8.4	16 - 20 ml	28		
	Etoxazole	25 - 50 ml	28	1000 l / ha	24
	Hexythiazox	400 g	30	1000 l / ha	is not reported
	Milbemectin	100 ml	1	is not reported	is not reported
	Pyridaben	50 - 100	15	1000 l / ha	24
	Acequinocyl	60 - 100 ml	7	1000 l / ha	24
	Huile parifinique	2 l	NA	1000 l	6
	Spirodiclofen	40 ml	21	1000 l /ha	48
Tortrix Moth Pandemise Archips (Pandemis cerasana, Archips podanus)	<i>Bacillus thuringiensis</i>	30 - 450 g	1	1000 l / ha	1
	Granulose Virus	1 - 2 pieces	With in 48 hours after frost	1000 l / ha	24
	Spinosad	25 - 30	7	1000 l /ha	24
	Diflubenzuron	40 g	30	1000 l / ha	24
	Chlorpyrifos-ethyl	85 - 110 ml	30	1000 l/ha	24
	Emamectin benzoat	25 - 35 g	14	1000 l / ha	24
	Alfa Cypermethrin	10 - 15 ml	21	1000 l / ha	24
	Chlorantraniliprole	17.5 -20 ml	14	1000 l /ha	24
Leaf miner (Phyllonoricta spp.) (Leucoptea malifoliell)	Flubendamide	25 - 35 ml	14		
	Spinosad	25 - 30	7	1000 l /ha	24
	Imidacloprid	35 ml	14	1000 l /ha	24
	Thiamethoxam	20 - 30 g	14	1000 l / ha	24
	Acetamiprid	25 g	14	is not reported	1
	Emamectin Benzoat	25 - 35 g	14	1000 l / ha	24
	Alfa Cypermethrin	10 - 15 ml	21	1000 l / ha	24
Green fruitworm Operophtera brumata	Chlorantraniliprole	17.5 -20 ml	14	1000 l /ha	24
	<i>Bacillus thuringiensis</i>	30 - 450 g	1	1000 l / ha	1
	Diflubenzuron	40 g	30	1000 l / ha	24
Goat Moth Cossus	Pheromone traps				
	<i>Bacillus thuringiensis</i>	30 - 450 g	1	1000 l / ha	1
Leopard Moth	Pheromone traps				
	mating disruption				
	Diflubenzuron	40 g	30	1000 l / ha	24
	<i>Bacillus thuringiensis</i>	30 - 450 g	1	1000 l / ha	1
Mediterranean fruit fly (Ceratitis capitata)	Attract and kill with Deltamethrine or Spinosad				
	Chlorpyrifos-ethyl	85 - 110 ml	30	1000 l/ha	24
	Acetamiprid	25 g	14	is not reported	1
	Deltamethrine	30 ml	7	1000 l / ha	48
	Lambda Cyhalothrin.	7.5 ml	14	1000 l /ha	24
	Attract and kill with trimedlure + abamectin				
	Pyrethrin 5 EC	335- 125 ml	1	1000 l	12