

# What are Pheromones?

**PHEROMONES** are volatile substances secreted by insects in order to send out a message to individuals belonging to the same species, which react to those signals through motor actions aimed at responding to the sexual/aggregation/other type of signal. Pheromones, produced by chemical synthesis but identical to the natural ones, are frequently used for the monitoring, namely to verify the presence of the individual harmful species, to detect the period of attack and to estimate the entity of the possible damage. The monitoring allows to rationalize the choice of the periods for pesticide applications, to resort to targeted control means and to minimize the number of treatments. This technique, called guided defense, substitutes the calendar-based pest control and introduces the principles of the integrated pest management, that represents the achievement to which the modern insect control systems tend. Being specific for each phytophagous insect, the pheromones selectively attract the insects of the same species. Serbios can offer specific pheromones for over 100 different types of pests. Besides the type of pheromone, the way in which the active substance is released into the environment is paramount. For this reason, dispensers of different shapes and materials have been studied, in support of the active substance, capable of measuring out the pheromone emission similarly to the way the insect does. In the same way, the shape, the size and the material used for the traps is crucial, in order to achieve a constant release uniformity throughout the years.

## Main available PHEROMONES

In the charts here below are shown the main available Pheromones for the corresponding insects, broken down by field of application. Furthermore, it is specified the type of the recommended trap as well as the number of generations per year and the insect catch period. It is recommended to place the traps at least 15 days before the catch period starts.

## THE USE OF TRAPS AND PHEROMONES IS ALLOWED IN ORGANIC FARMING

## Key

AGR	Citrus fruit	HAL	Halys trap	SPO	SuperCarpo	ROL	Tutaroll black/Roll giallo
COC	SuperCocid	OLI	Olive growing	STA	SuperTrack Ala	DRO	DROSAL Pro/Maxi
DBT	Diabrotica Track	ORT	Horticulture	SWO	SuperWood	CET	Cetonia trap
DER	Food or feed storage	PUN	Punch Trap	FOR	Super Forest	ANT	Anomala trap
DTK	Dacus Track/Dacus Track Plus	SCA	SuperCare Cossus/Zeuzera	TUTA	Tuta Trap	POT	Popillia trap
ERB	Herbaceous crops	SEL	Forestry	VIT	Viticulture	AGT	Agriotrap
FRU	Fruit growing	SGR	SuperGreen	YAT	Yatlorf	SCO	Supercolor

## Fields of use

Pest	Annual generations	Catch periods	Recommended trap	Application field
<b>Adoxophyes orana</b> (summer fruit tortrix moth)	2	May/September	STA	FRU-SEL
<b>Agriotes</b> (brevis, litiginosus, sordidus, ustulatus)	Every 3-5 years	March/August	YAT	ORT-ERB
<b>Agrotis exclamationis</b> (heart and dart moth)	1-2	April/August	SGR-STA	ORT-ERB
<b>Agrotis ipsilon</b> (black cutworm)	2	May/August	SGR-STA	ORT-ERB
<b>Anarsia lineatella</b> (peach twig borer)	3	May/September	STA	FRU
<b>Anomala vitis</b> (vine chafer)	1	May/September	STA	FRU
<b>Aonidiella aurantii</b> (California red scale)	5-6	April/November	COC-STA	AGR
<b>Archips podanus</b> (fruit-tree tortrix moth)	3	May/October	STA	FRU-VIT-SEL
<b>Archips rosanus</b> (European leafroller)	1	May/August	STA	FRU-SEL
<b>Argyrotaenia pulchellana</b> (grape tortrix moth)	3-4	March/September	STA	FRU-VIT
<b>Bactrocera oleae</b> (Dacus, olive fruit fly)	3-6	July/November	DTK-STA	OLI
<b>Cameraria ohridella</b> (chestnut leafminer)	3-5	May/September	STA	SEL
<b>Ceratitis capitata</b> (Mediterranean fruit fly)	2-7	June/November	STA-DTK	FRU-AGR
<b>Cetonia aurata</b>	1	April/July	CET	FRU
<b>Comstockaspis pernicioso</b> (San Josè scale)	2-3	April/September	COC-STA	FRU
<b>Cossus cossus</b> (carpenter moth)	BIE	May/September	SCC	FRU-OLI
<b>Cryptoblabes gnidiella</b> (honeydew moth)	4	April/October	STA	VIT
<b>Cydalima perspectalis</b> (box tree moth)	2-3	April/September	STA/SGR	SEL
<b>Cydia fagiglandana</b> (beech moth)	1	July/September	STA	FRU-SEL
<b>Cydia funebrana</b> (plum fruit moth)	2-3	April/September	STA	FRU
<b>Cydia molesta</b> (Oriental fruit moth)	4-5	March/September	STA	FRU
<b>Cydia nigricana</b> (pea moth)	1	April/May	STA	ORT-ERB
<b>Cydia pomonella</b> (codling moth)	1-3	April/September	SPO	FRU
<b>Cydia splendana</b> (chestnut tortrix)	1	July/September	STA	FRU-SEL
<b>Diabrotica virgifera</b> (Western corn rootworm)	1	May/August	DBT	ERB
<b>Drosophila suzukii</b> (spotted wing drosophila)	10-15	February/December	DRO	FRU-ORT-VIT
<b>Ephestia elutella</b> (chocolate moth)	1-4	April/September	SGR-STA	DER

Pest	Annual generations	Catch periods	Recommended trap	Application field
<i>Ephestia kuehniella</i> (Mediterranean flour moth)	1-5	February/November	SGR-STA	DER
<i>Eupoecilia ambiguella</i> (vine moth)	2-3	April/September	STA	VIT
<i>Euzophera bigella</i> (quince moth)	3	June/September	STA	FRU
<i>Halyomorpha halys</i> (brown marmorated stink bug)	2	April/October	BUG	FRU-ORT-ERB
<i>Heliothis armigera</i> (cotton bollworm)	2-4	May/October	SGR-STA	ORT-ERB
<i>Ips typographus</i> (bark beetle)	1-3	April/October	FOR	SEL
<i>Lasioderma serricorne</i> (tobacco beetle)	3-5	March/September	STA	DER
<i>Leucoptera malifoliella</i> (leaf miner)	3-5	April/September	STA	FRU
<i>Lobesia botrana</i> (European grapevine moth)	2-3	April/September	STA	VIT
<i>Lymantria dispar</i> - <i>Lymantria monacha</i>	1	June/August	SGR-STA	SEL
<i>Mamestra brassicae</i> - <i>Mamestra oleracea</i>	1-3	May/September	SGR-STA	ORT-ERB
<i>Orgyia antiqua</i> (rusty tussock moth)	4	May/October	STA	FRU-SEL
<i>Ostrinia nubilalis</i> (European corn borer)	2	April/October	STA	ERB-ORT
<i>Palpita unionalis</i> (jasmine moth)	5	March/September	STA	OLI
<i>Pammene fasciana</i> (chestnut leafroller)	1	May/September	STA	FRU-SEL
<i>Pandemis cerasana</i> (barred fruit-tree tortrix)	2	May/August	STA	FRU
<i>Pandemis heparana</i> (dark fruit-tree tortrix)	2	May/October	STA	FRU
<i>Paranthrene tabaniformis</i> (dusky clearwing)	0,5-1	May/August	STA	SEL
<i>Phtorimaea operculella</i> (potato tuber moth)	3-6	March/November	STA-SGR	ORT-ERB
<i>Phyllonorycter</i> spp (lithocolletis)	4	April/October	STA	FRU
<i>Pieris brassicae</i> (cabbage butterfly)	4-5	April/October	STA	ORT
<i>Pityogenes chalcographus</i> (six-toothed spruce bark beetle)	1-2	April/October	FOR	SEL
<i>Pityokteines curvidens</i> (silver fir bark beetle)	3	April/September	SWO	SEL
<i>Planococcus citri</i> (citrus mealybug)	2-5	April/November	COC-STA	AGR
<i>Plodia interpunctella</i> (Indian meal moth)	1-4	April/November	SGR-STA	DER
<i>Popillia japonica</i>	1	May/September	POT	FRU
<i>Prays citri</i> (citrus flower moth)	6-10	February/December	STA	AGR
<i>Prays oleae</i> (olive kernel borer)	3	April/November	STA	OLI
<i>Pseudaulacaspis pentagona</i> (mulberry scale)	2	February/August	COC-STA	FRU
<i>Rhagoletis cerasi</i> (cherry fruit fly)	1 - BIE	May/June/July	SCO/STA	FRU
<i>Rhagoletis completa</i> (walnut husk fly)	1	June/September	SCO/STA	FRU
<i>Rhyacionia buoliana</i> (European pine shoot moth)	1	May/July	STA	SEL
<i>Rhynchophorus ferrugineus</i> (red palm weevil)	1-2	April/November	PUN	SEL
<i>Sitotroga cerealella</i> (angoumois grain moth)	5-10	March/November	STA	DER
<i>Spodoptera exigua</i> (beet army worm)	4-5	April/November	SGR-STA	ORT-ERB
<i>Spodoptera littoralis</i> (cotton leafworm)	4-6	March/November	SGR-STA	ORT-ERB
<i>Synanthedon myopaeformis</i> (red-belted clearwing)	0,5-1	May/August	SGR-STA	FRU
<i>Synanthedon tipuliformis</i> (currant clearwing)	1	May/August	SGR-STA	FRU
<i>Thaumetopoea pityocampa</i> (pine processionary)	1	June/July	SGR	SEL
<i>Thaumetopoea processionea</i> (oak processionary)	1	July/August	STA/SGR	SEL
<i>Tomicus destruens</i> – <i>Tomicus piniperda/minor</i>	1-3	April/September	SWO	SEL
<i>Tuta absoluta</i> (tomato leafminer)	12-18	May/October	TUTA	ORT
<i>Zeuzera pyrina</i> (wood leopard moth)	0,5	June/September	STA-SCZ	FRU-ORT