Crop Protection for Citrus
INSECTICIDES

avgust crop protection

PRODUCT	ACTIVE INGREDIENT	DOSAGE	PESTS CONTROLLED	APPLICATION DIRECTIONS	PHI
Tanrek 500® SC	Imidacloprid, 500 g/l	6,5 ml / tree	Citrus aphid, citrus leafminer, Scales, Mealybugs, Leafhoppers/ Sharpshooters, Whiteflies Supression of Citrus gall wasp	Apply Tanrek 500 as a soil drench or via micro- sprinkler or drip irrigation. Apply after main flowering has finished. Apply prior to pest establishment or at the first signs of pest infestation. If scale is observed, apply Tanrek 500 after main flowering has finished and prior to or at the onset of crawler emergence. **Multiple flowering and/or overlapping cropping:** Where extended flowering and/or multiple flowering periods occur e.g. lemons and limes, or if the previous seasons crop is still hanging on the tree during or at the end of a new seasons flowering (overlapping cropping) e.g. Valencia oranges, Tanrek 500 should only be applied: after the previous crop has been harvested or stripped and when the main flowering period has finished. DO NOT apply more than once per season. Tanrek 500 remains effective for 2 to 3 months. Tanrek 500 requires 3 to 4 weeks for uptake into mature citrus to begin to kill pests. Pre-wet soil before the insecticide is applied. Lightly pre-wet soil for several hours before application to break soil surface tension. Once the irrigation system reaches operating pressure, inject the insecticide into the system over a calculated time interval (generally 2 hours) to allow uniform distribution throughout the system. Once the solution has cleared all irrigation lines and emitters, continue irrigation to move the insecticide into the active root zone but do not overirrigate or cause runoff. Wait 24 hours before subsequent irrigation. Chemigation application can be made separate to normal irrigation but followed by 10 to 20 minutes of additional watering to move Tanrek 500 into root-zone. Allow 24 hours before initiating subsequent irrigations	140 days (Australia) 212 days (South Africa)
		200- 280 ml/ha	Citrus leafminer, Citrus aphid, Leafhoppers, Scales,	**Foliar spray.** Apply prior to pest establishment or at the first signs of pest infestation. Citrus Leafminer : Target larvae in early developmental stages (1st and 2nd instar). Asian Citrus Psyllid: Apply when 5–10% of branches show adults/nymphs OR 10% of plants have psyllid adults OR In areas with recent history of infected plants in neighboring orchards. For scales, time the applications to coincide with the crawler stage. Apply Tanrek 500 after main flowering has finished. DO NOT apply more than once per season.	21 days (Brazil)
Folipax® SC	Spirotetramat, 150 g/l	1-1,2 L/ha	Aphids, Citrus psyllid, Citrus leafminer, Citrus bud mite, Citrus red mite, Pink citrus rust mite, Citrus rust mite, Scales, Citrus thrips, Mealybugs, Whiteflies; Suppression of: Black scale,Brown scale, Citricola scale, Cottony cushion scale, Nematodes	Apply with non-ionic surfactants or crop oil Apply at the first signs of crawler movement. The application should be done as a full cover spray to ensure that all parts of the trees are thoroughly covered. Minimum interval between applications: 21 day Do not apply this product within 10 days prior to bloom, during bloom, or until petal fall is complete	21 days (Australia) 60 days (South Africa)
Olzo® SC	Thiamethoxam, 200 g/l + Chlorantraniliprole, 100 g/l	1-2 mL per meter of average plant height	Aphids, Citrus Psyllid	**Soil drench** Apply as a soil drench near the trunk within the canopy drip line, diluting the product in 200 mL of spray solution per plant. Determine the orchard's average plant height for accurate per-plant dosage calculation Ensure adequate soil moisture conditions for optimal product penetration	14 days (Brazil)

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Ruklen® SC	Chlorantraniliprole, 200 g/l	0,35-0,6 L/ha	False Codling Moth (larvae), Fall armyworm (Spodoptera frugiperda), Citrus leafminer, Citrus peelminer	**Foliar spray** DO NOT apply more than 2 foliar applications per crop with a minimum 7 day re-treatment interval. Thorough coverage is essential. Spodoptera: Regularly scout crops to monitor for eggs and larvae. Target sprays against eggs and newly hatched larvae (prior to third instar stage) before they become entrenched. False Codling Moth (larvae): For optimum timing of Ruklen applications it is recommended to monitor male moth activities throughout the growing season in the orchard (or a close by orchard in the case of a mating disrupted orchard). Apply Ruklen as a preventive application, as soon as the false codling male catches starts increasing during the latter part of the growing season. A second Ruklen application is recommended at a spray interval of 6 to maximum 8 weeks later.	7 days (South Africa) 14 days (Australia)
Brush® EC	Abamectin, 18 g/l	0,8-1,4 L/ha	Citrus psyllid, Broad Mite, Citrus Rust Mite, Citrus leafminer, Citrus bud mite, Citrus thrips	**Foliar spray** Apply before pests reach damaging levels. To be effective Brush requires thorough spray coverage. Spray to the point of runoff. Make no more than 1 application per season. Application of this product is prohibited from the onset of flowering until the end of the flowering period. DO NOT apply from onset of flowering until after petal fall is complete. For Asian citrus psyllid control, apply to protect newly expanding foliage flush. For broad mite control, apply when mites first appear. For citrus bud mite control, time the spray at "bud swell" for best results. For citrus leafminer control, apply to protect new growth. For citrus thrips control, application will only control the current generation and must be correctly timed. Apply when economic thresholds have been reached (after egg hatch has begun – preferably early to mid-hatch).	7 days (Australia, Brazil) 3 days (South Africa)
Diperall® EC	Alpha-cypermethrin, 100 g/l	0,3-0,35 L/ha	Psyllids, (Citrus Fruit Borer, fruit fly (Ceratitis capitata)	**Foliar spray.** Apply when pests appear. Do not apply before 75% petal drop. Minimum Application Interval-14days Use sufficient volume of water to ensure thorough coverage of foliage. Begin applications at initial pest infestation and repeat as needed. Do not exceed 2 (two) applications per crop cycle	15 days (Brazil)
		250 ml/ 1 L water	Ants (Anoplolepis custodiens; Pheidole spp.)	**For use in conjunction with Ant Barrier Coatings.** Attach the Ant Barrier Coating to the tree trunk as directed. When ants become active in the orchard, the Diperall spray mixture must be applied to the fibrous part of the Barrier with a suitable applicator, e.g. an adapted knapsack sprayer. Apply to the point of run-off. Repeat the Diperall treatment when necessary. Suitable for use in biologically controlled orchards	- (South Africa)
Borey® SC	Imidacloprid, 150 g/l + Lambda- cyhalothrin, 50 g/l	0,3-0,5 L/ha	Citrus psyllid, aphids, Scales, Leafhoppers	**Foliar spray.** Apply when pests appear. Spray at the onset of infestation, ensuring full coverage of the citrus tree canopy, including stems and primary branches, to target pests inside the plant. Do not exceed 2 (two) applications per crop cycle. For best results, a 0.25% v/v mineral oil adjuvant may be added to the spray solution	21 days (Brazil)

Crop Protection for Citrus

ACARICIDES / NEMATICIDES

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PRODUCT	ACTIVE INGREDIENT	DOSAGE	PESTS CONTROLLED	APPLICATION DIRECTIONS	PHI
Brush® EC	Abamectin, 18 g/l	6-8 L/ha	Nematodes	Apply specified dosage into the root-zone by using low-pressure drip, trickle, micro-sprinkler or equivalent chemigation equipment. Soil must be lightly pre-wetted to break soil surface tension before applications.	3 days (Egypt)
Karpy® WP	Hexythiazox, 100 g/kg	0,8 L/ha	Mites	The application must achieve complete wetting of both the outer and, especially, the inner parts of the plant. Use lower or higher spray volumes as needed based on plant canopy density. Apply when a maximum of 2% infestation with mite is detected. Ensure proper spray penetration inside the canopy for maximum efficacy. Due to its ovicidal/larvicidal/nymphicidal action, the reduction in adult mite population is typically observed 20 to 30 days after application In case of adult mite reinfestation, apply an adulticide product (e.g. Brush) according to its label instructions Karpy targets eggs, larvae, and nymphs, while also sterilizing adult females. Adult mites will die naturally at the end of their life cycle. Reapply only after a minimum interval of 12 months in the same area.	30 days (Brazil)
Egor® SC	Fenazaquin, 200g/l	2- 2.5 L/ha	Mites	Use only as a ground application. Apply as a medium cover spray to wet the foliage canopy. If necessary, follow-up after one month with a different acaricide.	56 days (South Africa)

Crop Protection for Citrus

FUNGICIDES

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PRODUCT	ACTIVE INGREDIENT	DOSAGE	PESTS CONTROLLED	APPLICATION DIRECTIONS	PHI
Kumir® SC	Tribasic copper sulphate, 345 g/l	5-6 L/ha	Brown rot (Phytophthora), Black spot (Phyllosticta citricarpa), Melanose (Diaporthe citri), Smoky blotch (Gloeodes pomigena)	Apply as a dilute spray during pre and post bloom periods. Citrus canopies are difficult to penetrate and application using an oscillating boom sprayer is preferred to application using an air-blast sprayer. If an air-blast sprayer is used ensure that it is opening the canopy to permit entry of the spray to the interior of the tree. Spray equipment should be adjusted so that the spray is evenly distributed throughout the trees.	1 day (Australia)
Tesso® WP	Mancozeb, 800 g/kg	2-4 Kg/ha	Black spot (Phyllosticta citricarpa), Melanose (Diaporthe citri), Supression of Brown Citrus Mite, Citrus Rust Mite, Citrus Bud Mite	Apply Not later than 90% petal fall. Mites: Apply when 10% or more tree parts inspected have 20 or more mites per cm2. Inspect fruits, leaves and branches, especially on the outside of the plant. Black Spot: Apply at the time of greatest susceptibility of the plant, which usually corresponds to the period of few months after the petals fall. The interval between applications is 30 days Tesso is compatible with most fungicides and insecticides but should not be used with alkaline products such as lime sulphur or Bordeaux Mixtures. Do not use Tesso with calcium arsenate or urea on citrus	14 days (Brazil) Not required when used at petal fall (Australia)
Rayok® EC	Difenoconazole., 250 g/l	0,4-0,6 L/ha	Greasy Spot (Mycosphaerella citri) Alternaria, Anthracnose (Colletotrichum spp.), Black Spot (Phyllosticta citricarpa), Melanose (Diaporthe citri), Phomopsis Stem-End Rot (Phomopsis citrii), Post-Bloom Fruit Drop (PFD), (Colletotrichum acutatum), Scabs (Elsinoe spp.)	Begin applications prior to disease development and continue throughout the season on 7- to 21-day intervals following the resistance management guidelines. Apply twice. The first application at 50% petal drop and the second at 100% petal drop (when all the petals on the trees in the orchard have dropped). Apply as a medium cover spray Do not apply additional application after 100% petal fall Do not apply more than 3 l/ ha of Rayok per season. The two Rayok applications are part of a season-long control strategy for Alternaria alternate (brown spot) control. Use a horticultural spray oil to improve control of greasy spot.	90 days (South Africa) 7 days (Brazil)
Bosmit® SC	Azoxystrobin, 200 g/l + Difenoconazole, 125 g/l	0,4-0,6 L/ha		Bosmit applications must begin prior to disease development and continue throughout the year on 7- to 21- day intervals following the resistance management guidelines. A horticultural spray oil needs to be used to improve control of greasy spot. The addition of a spreading/penetrating type adjuvant such as a non-ionic based surfactant or crop oil concentrate or blend is advised Perform 2 applications with an interval, being the first after petal falls.	7 days (Brazil)

Crop Protection for Citrus

HERBICIDES

avgust crop protection

PRODUCT	ACTIVE INGREDIENT	DOSAGE	PESTS CONTROLLED	APPLICATION DIRECTIONS	PHI
Tornado 540® SL	Glyphosate acid, 540 g/l	1,4-4 L/ha	Burndown control of broadleaf weeds and grasses	DO NOT allow spray drift to contact green bark or stems, laterals, suckers, fresh wounds, foliage or fruit. Young trees with green bark: shield stems from spray contact. Use higher dosages for Perennial weeds. Use the highest dosage for Coach grass.	30 days (Brazil) Not required (Australia) 1 day (USA)
Quickstep® EC	Clethodim, 130 g/l + Haloxyfop-R-methyl, 80 g/l	0,5 -1 L/ha	Grass weeds	Apply as a directed spray to actively growing grass weeds. Quickstep must not be applied directly over the top of these plant types. Instead, spray must be directed at the base of the plant where grassy weeds are growing near the ground.	28 days (South Africa)
Gaur® EC	Oxyfluorfen, 240 g/l	3-6 L/ha	Annual broadleaf weeds and some grasses	Apply Gaur in 500 L water per ha to citrus trees of all ages, including nurseries . Apply Gaur as a directed spray at the plant base. Maximum 2 treatments per year. Do not apply in bearing orchards from 3 weeks before blossoming to 3 weeks after fruit set. Do not apply during periods of new foliar growth and apply only when the foliage has expanded fully and is matured. Apply as a directed spray away from the foliage in nurseries after transplanting. The higher dose is recommended for more tolerant weeds, including: Ipomoea spp, Bidens pilosa, Tribulus terrestris, Panicum maximum. **Preemergence Use:** For residual control of grass weeds, Gaur may be tank mixed with grass herbicides labeled for use in citrus. **Postemergence Use**: For broader spectrum postemergence control of emerged grass and broadleaf weeds, Gaur may be tank mixed with Tornado 540	10 days (Brazil) Not labeled (Australia)
Egida® SC	Mesotrione, 480 g/l	0,25 - 0,4 L/ha	Postemergence and residual control of broadleaf weeds	Apply as a directed or shielded spray. To avoid crop injury, apply the spray to the grove or orchard floor and to the weeds, avoiding contact with crop foliage, stems or fruit. Contact of Egida with the crop may result in bleaching injury that is typically temporary. Use trunk guards to protect plants until adequate bark has developed Egida can be applied in citrus trees or citrus tree plantings that are less than 12 months old and are exhibiting normal growth and vigor. Do not apply in orchards that are stressed due to poor weather or other abiotic factors. Do not apply Egida through any type of irrigation system. Do not exceed 0,4 l/ha of Egida for the first application. Do not exceed 3 applications per year or in a 12-month period. Allow at least 12 weeks between applications of Egida at 0,4 l/ha and at least 6 weeks between applications of 0,4 l/ha and subsequent applications of 0,25 l/ha Applications must follow one of the three programs 1) 0,4 l/ha +0,4 l/ha 2) 0,4 l/ha + 0,25 l/ha 3) 0,4 l/ha + 0,25 l/ha + 0,25 l/ha For optimum postemergence weed control, apply Egida to actively growing weeds in tank mixture with burndown herbicides such as Tornado 540. For effective residual weed control, Egida must be moved into the weed seed germination zone. For preemergence weed control, apply Egida before rainfall or irrigation. Subsequent application(s) of Egida can be made alone or in tank mixture, with the herbicides noted above, if weed emergence occurs.	30 days (USA)