

## RECOMMENDED USAGE RESTRICTIONS FOR PLANT PROTECTION PRODUCTS ON SOUTHERN AFRICAN EXPORT CITRUS

Compiled by:

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The purpose of these restrictions is to ensure compliance with residue tolerances in the countries to which Southern African citrus is exported. The recommendations on container labels are based on the **current registrations** of plant protection products. In terms of the SA Act 36 of 1947 (and equivalent legislation in neighbouring countries) the registration requirements must be adhered to at all times. However, the requirements of importing countries have made it necessary to introduce **further restrictions** in order to comply with maximum residue limits.

The active ingredients of the products are listed alphabetically together with an illustrative brand name. In the case of commodity products which may be sold under different brand names only a single name is shown for convenience. This does not imply endorsement of the particular brand concerned.

Due to the multiple fruit set pattern of lemons, plant protection products may only be used as specified during the first spring **blossoming and fruit set** period. Special caution should be exercised to ensure that pesticides applied to protect later sets do not result in unacceptable residues in fruit remaining on the trees from earlier sets.

The following general statements are applicable to the use of plant protection products on all cultivars:

- \* Growers should ensure that these restrictions are kept handy and are consulted before the application of plant protection products.
- \* The application in accordance with current label requirements will in many instances not ensure that export requirements will be met. The restrictions specified are applicable in addition to the label requirements.
- \* The withholding periods specified on product labels provide an indication of the ability of treatments to conform to South African residue levels. Since overseas requirements are generally more stringent these withholding periods are not adequate unless specifically mentioned in this document.
- \* These restrictions apply to the period during which fruit is present on trees (between blossom and harvest) and not to the period between harvest and the onset of blossom, during which time standard label requirements apply.
- \* All usages apply to normal blossom situations. Under conditions where blossoming occurs over an extended period a more conservative approach must be adopted. Under these conditions treatments should be timed according to the early portion of the blossom.
- \* Particular attention must be given to ensuring that spray machinery is calibrated to apply the correct spray volumes in relation to tree size and that spray operators are trained in the handling and application of plant protection products.
- \* All treatments referred to above must be applied at the registered concentrations.
- \* Alternation of products, where applicable with reference to the restrictions, will reduce the risk of excessive residues of any one chemical and will also reduce selection pressure for resistance.
- \* The additional restrictions in this document do not necessarily provide an indication of the compatibility of the products with integrated pest management and good agricultural practice.
- \* The addition of oil to a treatment, if not registered as such, should be avoided as this may increase the residue level.

All exporting growers should keep accurate spray records so that in the event of exceeding MRLs the reasons can be determined. These records should be retained in safe-keeping for at least 3 years.

**Growers are strongly urged to abide by these restrictions to minimise the risk of residue tolerances being exceeded. However, it must be noted that no absolute guarantee can be given that even by following these guidelines export residue tolerances will in all instances not be exceeded. The efficacy and integrated pest management compatibility of plant protection products listed here are additional considerations that users should bear in mind and which are not covered in this document whatsoever. This document has been compiled with information presently available and in good faith, but with the express condition that the authors, Citrus Research International and Citrus Growers Association of Southern Africa, accept no responsibility whatsoever for any loss or damage resulting directly or indirectly from the use thereof.**

**SUMMARY TABLE OF RECOMMENDED USAGE RESTRICTIONS**

| <b>PRODUCT</b>   | <b>All markets (including EU) except where other restrictions are specified</b>  | <b>CODEX (A) <sup>a</sup></b>  | <b>CODEX (B) <sup>b</sup></b> | <b>CANADA</b>         | <b>U S A</b>                  | <b>JAPAN</b>                  | <b>Other <sup>d</sup></b>  |
|--|--|--|-------------------------------|-----------------------|-------------------------------|-------------------------------|--|
| Acetamidrid/<br>Mospilan   | 150d PHI as registered   | -  | -                             | -                     | -                             | -                             | Korea: 150d PHI as registered for Soft Citrus and not later than 90% petal fall for other citrus.<br>Taiwan: 150d PHI as registered for oranges and not later than 90% petal fall for other citrus |
| Acrinathrin/ Rufast  | Not later than 90% petal fall  | -  | -                             | -                     | -                             | -                             | -  |
| Aldicarb/ Temik  | Not permitted in SA <sup>u</sup> . For other southern African countries: 180d PHI  | -  | -                             | -                     | -                             | -                             | -  |
| Amitraz/ Mitac   | Not later than 90% petal fall  | -  | -                             | 150d PHI              | -                             | 28d PHI as registered         | -  |
| Avermectin/ Agrimec  | 7d PHI as registered   | -  | -                             | -                     | -                             | -                             | -  |
| Azadirachtin   | See Pyrethrins   | -  | -                             | -                     | -                             | -                             | -  |
| Azinphos-methyl/<br>Gusathion  | Not later than 90% petal fall  | 120d PHI   | 120d PHI                      | 21d PHI as registered | Not later than 90% petal fall | Not later than 90% petal fall | Korea: 120d PHI  |
| Azoxystrobin/ Ortiva   | 77d PHI as registered  | -  | -                             | -                     | -                             | -                             | -  |
| Bacillus thuringiensis/<br>Dipel                                     | 0d PHI as registered   | -  | -                             | -                     | -                             | -                             | -  |
| Beauveria bassiana/<br>BroadBand                                     | 0d PHI as registered   | -  | -                             | -                     | -                             | -                             | -  |
| Bromopropylate/<br>Acarol  | Not later than 90% petal fall  | 21d PHI  | 21d PHI                       | 21d PHI               | -                             | 21d PHI                       | -  |
| Buprofezin/ Applaud  | 45d PHI as registered  | -  | -                             | -                     | -                             | -                             | -  |
| Cadusaphos/ Rugby  | 0d PHI as registered   | -  | -                             | -                     | -                             | -                             | -  |
| Carbendazim<br>(Bavistin, Bendazid,<br>Knowin, Benomyl,<br>Spotless) | 120d PHI for oranges and grapefruit and 90d PHI for other citrus   | 90d PHI for oranges and not later than 90% petal fall for other citrus | 14d PHI as registered         | 14d PHI as registered | 14d PHI as registered         | 14d PHI as registered         | Korea: 14d PHI as registered   |
| Chlorfenapyr/ Hunter   | Medium cover spray: Before calyx closure (± 3 weeks after petal fall) as registered. Bait spray application (20ml): Not later than mid-December and a 140d PHI as registered | -  | -                             | -                     | -                             | -                             | -  |
| Chlorpyrifos/ Dursban  | 60d PHI for sprays as registered, 0d PHI for soil and stem applications as registered  | -  | -                             | -                     | -                             | -                             | -  |

| PRODUCT                                      | All markets (including EU) except where other restrictions are specified                       | CODEX (A) <sup>a</sup> | CODEX (B) <sup>b</sup>                            | CANADA                | U S A   | JAPAN  | Other <sup>d</sup>   |
|--|--|------------------------|---|-----------------------|---|--|--|
| Chlorantraniliprole (Rynaxypyr)/ Coragen     | 7d PHI as registered   | -                      | -   | -                     | -   | 7d PHI as registered. Not later than 90% petal fall for mandarins. | Taiwan: Not later than 90% petal fall  |
| Clothianidin/ Dantop                         | 120d PHI as registered   | -                      | -   | -                     | -   | -  | -  |
| Copper                                       | 14d PHI as registered  | -                      | -   | -                     | -   | -  | -  |
| Cyhexatin (Azocyclotin)/ Sipcatin            | Only to be used after harvest and before the onset of blossom                                  | -                      | -   | -                     | Not permitted   | Not permitted  | Taiwan: Not permitted  |
| Cypermethrin                                 | 28d PHI as registered  | -                      | -   | -                     | 28d PHI as registered for alpha and zeta-Cypermethrin formulations. Not later than 90% petal fall for Cypermethrin <sup>c</sup> | -  | -  |
| Dichlorprop/ Corasil E                       | Not later than 90% petal fall  | -                      | 150d PHI as registered                            | -                     | -   | 150d PHI as registered   | -  |
| Dichlorprop-p/ Corasil P                     | 90d PHI as registered  | -                      | -   | -                     | -   | -  | -  |
| Dicofol/ Kethane                             | Not later than 90% petal fall  | 14d PHI                | 14d PHI<br>Russia: Not later than 90% petal fall. | 14d PHI               | 14d PHI   | 14d PHI  | Korea: Not later than 90% petal fall for soft citrus and 28d PHI for other citrus. Taiwan: 28d PHI |
| Difenoconazole/ Score                        | Not later than 90% petal fall as registered  | -                      | -   | -                     | -   | -  | -  |
| Dimethoate/ Rogor                            | Not later than 50% petal fall for sprays, Not later than white bud stage for soil applications | -                      | -   | 42d PHI as registered | 42d PHI as registered   | 42d PHI as registered  | -  |
| Dimethyl Didecylammonium Chloride/ Sporekill | Not permitted  | -                      | -   | -                     | -   | Not permitted <sup>k</sup>   | -  |

| PRODUCT  | All markets (including EU) except where other restrictions are specified  | CODEX (A) <sup>a</sup>   | CODEX (B) <sup>b</sup> | CANADA   | U S A   | JAPAN                          | Other <sup>d</sup>   |
|--|---|--|------------------------|--|---|--------------------------------|--|
| Dithiocarbamates (Mancozeb/Maneb)                                  | 21d PHI or 28d PHI as registered  | Not later than 90% petal fall for Lemons and Grapefruit and 21d or 28d PHI as registered for Soft Citrus and Oranges | -                      | Not later than end December and only where packhouses have either a non-recycling high pressure spray or non-recycling Deccosol foam curtain and regular (twice daily) cleaning of brushes | Not later than 90% petal fall for Oranges, Lemons and Grapefruit and 21d or 28d PHI as registered for Soft Citrus | Not later than end-January     | Korea: 21d PHI or 28d PHI as registered for Soft Citrus and not later than 90% petal fall for other citrus |
| (E)-8-Dodecen-1-yl acetate + (Z)-8-Dodecen-1-yl acetate/ Checkmate | 0d PHI as registered  | -  | -                      | -  | -   | -                              | -  |
| Endosulfan/ Thiodan <sup>h</sup>                                   | Not permitted in SA <sup>h</sup> . Not later than 90% petal fall in other southern African countries<br>Not permitted | - <sup>h</sup>   | 28d PHI <sup>h</sup>   | - <sup>h</sup>   | - <sup>h</sup>  | 28d PHI <sup>h</sup>           | - <sup>h</sup>   |
| Ethephon/ Ethrel   | Not permitted   | -  | As registered          | As registered  | -   | Post harvest use not permitted | -  |
| Ethoprophos/ MOCAP   | 0d PHI as registered  | -  | -                      | -  | -   | -                              | -  |
| Etiozole/ Smite  | 28d PHI as registered   | -  | -                      | -  | -   | -                              | -  |
| Fenamiphos/ NemaCur  | 150d PHI as registered  | -  | -                      | -  | -   | -                              | -  |
| Fenazaquin   | 56d PHI as registered   | -  | -                      | -  | -   | -                              | -  |
| Fenbutatin-oxide/ Torque   | 7d PHI as registered  | -  | -                      | -  | -   | -                              | -  |
| Fenpropathrin/ Meothrin  | 28d PHI as registered   | 185 PHI  | -                      | -  | -   | -                              | Korea: 28d PHI as registered for soft citrus and 185d PHI for other citrus                                 |
| Fenpropathrin + Phenthoate/ Meothrin + Eisan                       | Not later than 90% petal fall   | -  | -                      | -  | -   | -                              | -  |

| PRODUCT   | All markets (including EU) except where other restrictions are specified                          | CODEX (A) <sup>a</sup>   | CODEX (B) <sup>b</sup> | CANADA                                  | U S A                         | JAPAN  | Other <sup>d</sup>  |
|---|---|--|------------------------|---|-------------------------------|--|---|
| Fenpyroximate/<br>Mitigate                              | 28d PHI as registered   | -  | -                      | 150d PHI and not later than end-October | -                             | -  | Korea: 28d PHI as registered for soft citrus, 150d PHI and not later than end-October for other citrus  |
| Fipronil/ Regent  | Before calyx closure (± 3 weeks after petal fall) as registered                                   | -  | -                      | -                                       | -                             | -  | -   |
| Flutriafol/ Impact                                      | Not later than 100% petal fall as registered  | Not later than 90% petal fall  | -                      | -                                       | Not later than 90% petal fall | Not later than 90% petal fall  | Korea and Taiwan: Not later than 90% petal fall   |
| Formetanate/<br>Dicarzol                                | 90d PHI as registered   | -  | -                      | -                                       | -                             | -  | -   |
| Fosetyl-AI/Aliette                                      | 0d PHI as registered  | -  | -                      | -                                       | -                             | -  | -   |
| Fosthiazate/<br>Nemathorin                              | 43d PHI as registered   | -  | -                      | -                                       | -                             | -  | -   |
| Gibberellic Acid  | 15d PHI as registered   | -  | -                      | -                                       | -                             | -  | -   |
| Furfural/ Crop Guard                                    | 43d PHI as registered   | -  | -                      | -                                       | -                             | -  | -   |
| Granulovirus<br>(Cryptogran, Cryptex)                   | 0d PHI as registered  | -  | -                      | -                                       | -                             | -  | -   |
| Guazatine   | Post-harvest as registered  | Not permitted  | -                      | Not permitted                           | Not permitted                 | Not permitted  | Korea: not permitted  |
| Helicoverpa armigera nucleopolyhedrovirus/<br>Helicovir | 0d PHI as registered  | -  | -                      | -                                       | -                             | -  | -   |
| Imazaill (Chloramizol)                                  | Post-harvest as registered  | -  | -                      | -                                       | -                             | -  | -   |
| Imidacloprid/ Confidor                                  | 212d PHI as registered  | -  | -                      | -                                       | -                             | 212d PHI as registered for oranges, grapefruit and lemons, and not later than 90% petal fall for soft citrus | Korea: 212d PHI as registered for Soft Citrus and not later than 90% petal fall for other citrus<br>Taiwan: 212d PHI as registered for oranges and not later than 90% petal fall for other citrus |
| Iprodione/ Rovral<br>(Dicarboxamil)                     | 115d PHI as registered for Lemons and Soft Citrus, not later than 90% petal fall for other citrus | Not later than 90% petal fall  | 115d PHI as registered | -                                       | Not later than 90% petal fall | -  | Switzerland and Taiwan: Not later than 90% petal fall<br>Korea: 115d PHI as registered for soft citrus and not later than 90% petal fall for other citrus <sup>m</sup> .                          |
| Isazophos/ Miral  | 56d PHI as registered   | -  | -                      | -                                       | -                             | -  | -   |
| Kresoxim-methyl/<br>Stroby                              | Not later than 90% petal fall   | 56d PHI for Grapefruit & Oranges. Not later than 90% petal fall for Lemons & Soft Citrus | 56d PHI                | -                                       | -                             | 56d PHI  | -   |

| PRODUCT  | All markets (including EU) except where other restrictions are specified                                 | CODEX (A) <sup>a</sup>            | CODEX (B) <sup>b</sup>            | CANADA                                  | U S A                             | JAPAN                                   | Other <sup>d</sup>   |
|--|--|-----------------------------------|-----------------------------------|---|-----------------------------------|---|--|
| Mercaptothion/<br>Malathion (fruit fly baiting only) | Only dilute concentration, do not use higher concentrations. 28d PHI <sup>L</sup>                        | 7d PHI                            | 7d PHI                            | 14d PHI                                 | 7d PHI                            | 7d PHI                                  | -  |
| Metaxyl W/ Ridomil Gold                              | 30d PHI as registered  | -                                 | -                                 | -                                       | -                                 | -                                       | -  |
| Methamidophos/<br>Citrimet                           | 60d PHI  | -                                 | 21d PHI as registered             | 21d PHI as registered                   | -                                 | 21d PHI as registered                   | Korea: 21d PHI as registered   |
| Methidathion/<br>Ultracide                           | No later than 90% petal fall   | 56d PHI as registered             | 56d PHI as registered             | 56d PHI as registered                   | 56d PHI as registered             | 56d PHI as registered                   | Korea: Not later than 90% petal fall for oranges, grapefruit & lemons and 56d PHI as registered for soft citrus                      |
| Methiocarb/ Mesuroil                                 | 21d PHI as registered  | Not later than the end of January | -                                 | -                                       | Not later than the end of January | Not later than the end of January       | Korea: 21d PHI as registered for mandarins and not later than the end of January for others  |
| Methomyl<br>(Thiodicarb) / Lannate                   | 60d PHI for all registered usages  | 28d PHI for all registered usages | 28d PHI for all registered usages | 28d PHI for all registered usages       | 28d PHI for all registered usages | 28d PHI for all registered usages       | -  |
| Methoxyfenozide /<br>Runner                          | 30d PHI as registered  | -                                 | -                                 | -                                       | -                                 | -                                       | Taiwan: Not later than 90% petal fall. Korea: 30d PHI as registered for mandarins and not later than 90% petal fall for other citrus |
| Methyl-parathion /<br>Pennacap                       | Not later than 50% petal fall  | -                                 | -                                 | -                                       | -                                 | -                                       | -  |
| Mevinphos  | 28d PHI  | -                                 | 3d PHI as registered              | 3d PHI as registered                    | -                                 | 3d PHI as registered                    | Korea: 3d PHI as registered  |
| Monocrotophos/<br>Azodrin                            | Not for use in SA; 90d PHI in other southern African countries   | -                                 | -                                 | -                                       | -                                 | -                                       | -  |
| Orange Oil/ Pre-vam                                  | 0d PHI as registered   | -                                 | -                                 | -                                       | -                                 | -                                       | -  |
| Omethoate/ Folimat                                   | Apply no more than once in a season, not later than beginning of December and ensure at least a 150d PHI | -                                 | -                                 | -                                       | -                                 | -                                       | -  |
| Paecilomyces<br>lilacinus/ PL+                       | 0d PHI as registered   | -                                 | -                                 | -                                       | -                                 | -                                       | -  |
| Parathion/ Parathion                                 | Not later than 50% petal fall  | -                                 | -                                 | Not later than 4 weeks after petal fall | -                                 | Not later than 4 weeks after petal fall | -  |
| Permethrin/ Last Call                                | 0d PHI as registered   | -                                 | -                                 | -                                       | -                                 | -                                       | -  |
| Phenthoate/ Eisan                                    | Not later than 50% petal fall  | -                                 | -                                 | -                                       | -                                 | -                                       | -  |

| PRODUCT                                     | All markets (including EU) except where other restrictions are specified   | CODEX (A) <sup>a</sup>   | CODEX (B) <sup>b</sup>        | CANADA                        | U S A   | JAPAN                         | Other <sup>d</sup>  |
|---|--|--|-------------------------------|-------------------------------|---|-------------------------------|---|
| Phosphorous acid                            | 0d PHI, 14d PHI or 28d PHI as registered   | -  | -                             | -                             | -   | -                             | -   |
| Pirimicarb/ Aphox                           | 14d PHI as registered  | -  | -                             | Not later than 90% petal fall | Not later than 90% petal fall                                       | Not later than 90% petal fall | Switzerland: Not later than 90% petal fall. Taiwan: Not later than 90% petal fall for grapefruit, lemons and soft citrus and 14d PHI for oranges. |
| Prochloraz                                  | Post-harvest as registered   | -  | -                             | Not permitted                 | Not permitted   | Oranges only                  | Korea: not permitted on lemons  |
| Profenofos/ Selecron                        | Between blossom and harvest, use Selecron only once and not more than 100mℓ/100ℓ water at not later than 50% petal fall <sup>y</sup> | -  | -                             | -                             | -   | -                             | -   |
| Propargite/ Omitte                          | 14d PHI as registered  | -  | -                             | -                             | Not later than 90% petal fall for Soft Citrus, "a" for other citrus | -                             | -   |
| Prothiofos/ Tokuthion                       | Between blossom and harvest, Prothiofos should be used only once and not later than 90% petal fall                                   | -  | -                             | -                             | -   | -                             | -   |
| Pyraclostrobin/ Cabrio                      | 45d PHI as registered  | -  | -                             | -                             | -   | -                             | Taiwan: Not later than 90% petal fall for Soft citrus and 45d PHI for other citrus  |
| Pyrethrin (incl natural Pyrethrum) / Erador | 2d PHI as registered   | Not later than 90% petal fall  | Not later than 90% petal fall | -                             | -   | -                             | Taiwan: Not later than 90% petal fall   |
| Pyrimethanil / Philabuster                  | Post-harvest as registered   | Post-harvest as registered. Do not use in HOT water bath for lemons. | -                             | -                             | -   | -                             | Korea: Do not use in HOT water bath for lemons and 90% petal fall for soft citrus <sup>m</sup> . Taiwan: Not permitted for soft citrus            |
| Pyriproxyfen/ Nemesis                       | 90d PHI as registered  | -  | -                             | 120d PHI                      | -   | -                             | Switzerland and Korea: 120d PHI Taiwan: 90d PHI as registered for oranges and soft citrus and not later than 90% petal fall for other citrus      |
| Sodium ortho-phenyl-phenol                  | Post-harvest as registered   | -  | -                             | -                             | -   | -                             | Taiwan: Not permitted on soft citrus  |

| PRODUCT                       | All markets (including EU) except where other restrictions are specified                        | CODEX (A) <sup>a</sup>  | CODEX (B) <sup>b</sup> | CANADA                | U S A                 | JAPAN                 | Other <sup>d</sup>   |
|-------------------------------|---|---|------------------------|-----------------------|-----------------------|-----------------------|--|
| Spinetoram/ Delegate          | 7d PHI as registered  | 7d PHI as registered for oranges and 14d PHI for other citrus | -                      | -                     | -                     | -                     | -  |
| Spinosad/ (Tracer/GF120)      | 1d PHI as registered for fruit fly baiting (GF120), but 28d PHI for other applications (Tracer) | -   | -                      | -                     | -                     | -                     | -  |
| Spirodiclofen/ Envidor        | 14d PHI as registered   | -   | -                      | -                     | -                     | -                     | -  |
| Spirotetramat/ Movento        | 60d PHI as registered   | -   | -                      | -                     | -                     | -                     | Korea: 60d PHI as registered for soft citrus and not later than 90% petal for other citrus <sup>m</sup> . Taiwan: Not later than 90% petal fall for oranges and soft citrus and 60d PHI for grapefruit and lemons. |
| Tartar emetic/ Tartox         | 30d PHI as registered   | -   | -                      | -                     | -                     | -                     | -  |
| Tau-fluvalinate/ Klaritan     | Not later than mid-November as registered   | -   | -                      | -                     | -                     | -                     | -  |
| Tebuconazole/ Follicur        | Not later than 90% petal fall as registered   | -   | -                      | -                     | -                     | -                     | -  |
| Teflubenzuron/ Nomolt         | Not later than 90% petal fall   | -   | 30d PHI                | -                     | -                     | 30d PHI as registered | Korea: 30d PHI on soft citrus and not later than 90% petal fall for other citrus   |
| Temephos/ Abate               | 200d PHI  | -   | -                      | -                     | -                     | -                     | -  |
| Terbufos/ (AC92-100, Counter) | 30d PHI as registered and not to be used between December and 1 April                           | -   | -                      | -                     | -                     | -                     | -  |
| Tetradifon/ Tedion            | Not later than 90% petal fall   | -   | 15d PHI                | 15d PHI               | Not Permitted         | 15d PHI               | Switzerland: Not later than 90% petal fall   |
| Thiabendazole                 | Post-harvest as registered  | -   | -                      | -                     | -                     | -                     | -  |
| Thiacloprid/ Calypso          | No later than 3 weeks after petal-fall  | -   | -                      | -                     | -                     | -                     | -  |
| Thiophanate-methyl/ Topsin    | Not later than 90% petal fall   | -   | 14d PHI as registered  | 14d PHI as registered | 14d PHI as registered | 14d PHI as registered | -  |
| Trichlorfon/ Dipterex         | 28d PHI as registered   | -   | 10d PHI as registered  | -                     | -                     | -                     | Korea: 10d PHI as registered for Soft Citrus and 28d PHI for other citrus  |



| PRODUCT                | All markets (including EU) except where other restrictions are specified  | CODEX (A) <sup>a</sup>        | CODEX (B) <sup>b</sup> | CANADA                     | U S A                      | JAPAN                         | Other <sup>d</sup>  |
|------------------------|---|-------------------------------|------------------------|----------------------------|----------------------------|-------------------------------|---|
| Trifloxystrobin/ Flint | 76d PHI as registered   | -                             | -                      | -                          | -                          | -                             | Korea: 76d PHI as registered for soft citrus, otherwise on Valencias only and not later than mid-January Taiwan: Not later than 90% petal fall for soft citrus and 76d PHI as registered for other citrus |
| Triflumuron/ Alysistin | Not later than 90% petal fall for lemons and 30d PHI as registered for other citrus                             | Not later than 90% petal fall | 30d PHI as registered  | 60d PHI                    | Not permitted              | Not later than 90% petal fall | China, Taiwan Switzerland and Korea: Not later than 90% petal fall  |
| 2,4-D                  | Post-harvest, not more than 250ppm in a packhouse treatment and not more than 250ppm in a pre-degreening drench | -                             | -                      | Post-harvest as registered | Post-harvest as registered | Post-harvest as registered    | Korea: not permitted on grapefruit and soft citrus  |
| 3,5,6 TPA / Maxim      | 120d PHI as registered  | -                             | -                      | -                          | -                          | -                             | -   |

PHI = Pre-harvest interval. - = as for "all markets", that is no additional restrictions apply.



**SUMMARY TABLE OF RESIDUE TOLERANCES**

| Chemical  | RSA               | General export tolerance                      | Codex                                 | Canada | USA   | Japan                                    | Korea  |
|---|-------------------|---|---------------------------------------|--------|---|--|--|
| Acetamiprid   | 0.5               | 0.5   | None                                  | 0.5    | 1.0   | 2.0                                      | 2.0 <sup>13</sup>                              |
| Acrinathrin   | None <sup>n</sup> | 0.2   | None                                  | 0.1    | None  | 2.0                                      | 1.0 <sup>13</sup>                              |
| Aldicarb  | 0.2               | 0.02  | 0.2                                   | 0.1    | None <sup>13</sup> ,<br>0.3 <sup>11</sup> (None) <sup>e</sup>   | 0.2, 0.01 <sup>16</sup>                  | 0.02 <sup>13</sup>                             |
| Amitraz   | 0.2               | 0.05  | 0.5 <sup>7</sup>                      | 0.1    | None  | 0.5                                      | 0.5 <sup>6</sup> , 0.2 <sup>13</sup>           |
| Avermectin  | 0.01              | 0.01  | 0.01                                  | 0.02   | 0.02  | 0.01                                     | 0.02 <sup>13</sup>                             |
| Azadirachtin  | None              | 0.01  | None                                  | 0.1    | Exempt  | Exempt                                   | None   |
| Azinphos-methyl   | 2.0               | 0.05  | 1.0                                   | 2.0    | None  | 0.01                                     | 2.0  |
| Azoxystrobin  | 0.5               | 0.5   | 15.0                                  | 0.8    | 10.0  | 10.0, 1.0 <sup>13</sup>                  | 1.0 <sup>13</sup> (10.0 <sup>x</sup> )         |
| Bacillus thuringiensis                                  | None              | None  | None                                  | None   | None  | None                                     | None   |
| Bromopropylate  | 3.0               | 0.01  | 2.0                                   | 2.0    | None  | 2.0                                      | 5.0  |
| Buprofezin  | 0.05              | 0.05  | 1.0                                   | 0.1    | 2.5   | 2.0 <sup>7</sup> , 2.5 <sup>11</sup>     | 0.3 <sup>7</sup> , 1.3                         |
| Cadusafos   | 0.05              | 0.01  | None                                  | 0.1    | None  | 0.01                                     | None   |
| Carbendazim   | 5.0               | 0.2 <sup>7,19</sup> ,<br>0.7 <sup>13,20</sup> | 1.0 <sup>7</sup>                      | 10.0   | 10.0  | 7.0 <sup>19,20</sup> , 3.0 <sup>11</sup> | 7.0  |
| Chinomethionat  | 0.5               | 0.01  | None                                  | 0.1    | None  | 0.5                                      | 0.5  |
| Chlorfenapyr  | 0.01              | 0.01  | None                                  | 0.1    | 0.01  | 2.0                                      | 1.0 <sup>13</sup>                              |
| Chlorantraniliprole                                     | 0.5               | 0.5 (0.01) <sup>g</sup>                       | 0.5                                   | 0.7    | 1.4   | 1.0, 0.1 <sup>13</sup>                   | None   |
| Chlorpyrifos  | 0.3               | 0.3 <sup>11</sup> , 0.2 <sup>20</sup>         | 1.0                                   | 1.0    | 1.0   | 1.0                                      | 0.3  |
| Clothianidin  | 0.01              | 0.01  | None                                  | 0.1    | 0.4   | 2.0                                      | 1.0 <sup>13</sup>                              |
| Copper  | 20.0              | 20.0  | None                                  | 50.0   | Exempt  | Exempt                                   | None   |
| Cyhexatin (Azocytotin)                                  | 2.0               | 0.2 (0.01) <sup>j</sup>                       | 0.2                                   | 0.1    | Not permitted,<br>0.1 <sup>18</sup>                             | Not permitted                            | 2.0  |
| Cypermethrin  | 0.2               | 0.2   | 0.3                                   | 1.0    | None, 0.35,<br>10.0 <sup>c</sup>                                | 2.0                                      | 2.0  |
| Dichlorprop-p   | None              | 0.05  | None                                  | 0.1    | None  | 3.0                                      | None   |
| Dicofol   | 5.0               | 0.02  | 5.0                                   | 5.0    | 6.0   | 5.0                                      | 1.0 <sup>6</sup>                               |
| Difenoconazole  | 0.05              | 0.05  | None                                  | 0.1    | 0.6   | 0.6 <sup>6</sup> , 0.01 <sup>13</sup>    | 1.0 <sup>13</sup>                              |
| Dimethoate  | 2.0               | 0.02  | 5.0                                   | 1.5    | 2.0   | 2.0                                      | 2.0  |
| Dimethyl Didecyl ammonium Chloride                      | 2.0               | 0.01  | None                                  | 0.1    | None  | Not permitted <sup>k</sup>               | None   |
| Dithiocarbamate   | 3.0               | 3.0   | 2.0 <sup>7</sup> , 10.0 <sup>13</sup> | 0.1    | None <sup>11</sup> ,<br>10.0 <sup>13</sup>                      | 2.0 <sup>11</sup> , 10.0 <sup>13</sup>   | 5.0 <sup>13</sup>                              |
| (E)-8-Dodecen-1-yl acetate + (Z)-8-Dodecen-1-yl acetate | None              | None  | None                                  | None   | Exempt  | None                                     | None   |
| Endosulfan <sup>h</sup>                                 | 1.0 <sup>h</sup>  | 0.05  | None                                  | 0.1    | None  | 0.5                                      | 0.1 <sup>19,20</sup> ,<br>None <sup>7,13</sup> |
| Ethephon  | 2.0               | 0.05  | None                                  | 1.0    | None  | 2.0                                      | 2.0 <sup>20</sup> , 0.5 <sup>13</sup>          |
| Ethoprophos   | 0.05              | 0.02  | None                                  | 0.1    | None  | 0.005                                    | None   |
| Etoxazole   | None              | 0.01  | None                                  | 0.1    | 0.1 <sup>6</sup>  | 0.7                                      | 0.5 <sup>13</sup>                              |
| Fenamiphos  | 0.05              | 0.02  | None                                  | 0.1    | 0.6   | 0.2                                      | 0.5 <sup>6</sup>                               |
| Fenazaquin  | 0.05              | 0.05  | None                                  | 0.1    | 0.5 <sup>11</sup> ,<br>None <sup>19</sup>                       | 0.01                                     | 0.7 <sup>13</sup>                              |
| Fenbutatin-oxide (Hexakis)                              | 1.0               | 1.0   | 5.0                                   | 2.0    | 20.0  | 5.0                                      | 5.0  |
| Fenpropathrin   | 0.5               | 0.5   | None                                  | 2.0    | 2.0   | 5.0                                      | 5.0 <sup>13</sup>                              |
| Fenpyroximate   | 0.2               | 0.2   | 0.5                                   | 0.1    | 0.5   | 1.0                                      | 0.5 <sup>13</sup>                              |
| Fipronil  | 0.05              | 0.005   | None                                  | 0.1    | None  | 0.01                                     | 0.05 <sup>13</sup>                             |
| Flutriafol  | 0.1               | 0.1   | None                                  | 0.1    | None  | 0.01                                     | None   |
| Formetanate   | 0.5               | 0.05  | None                                  | 4.0    | 1.5 <sup>7,19</sup> ,<br>0.6 <sup>20</sup> , 0.03 <sup>10</sup> | 4.0                                      | None   |
| Fosetyl-Al  | 15.0              | 15.0  | None                                  | 9.0    | None  | 150.0                                    | None   |

| Chemical                                  | RSA               | General export tolerance   | Codex             | Canada           | USA                                  | Japan   | Korea                                 |
|---|-------------------|--|-------------------|------------------|--------------------------------------|---|---------------------------------------|
| Fosthiazate                               | 0.1               | 0.02   | None              | 0.1              | None                                 | 0.01  | None                                  |
| Furfural                                  | 1.0               | 1.0  | None              | None             | None                                 | None  | None                                  |
| Gibberellic Acid                          | 0.2               | 0.2  | None              | 0.1              | Exempt                               | 0.2   | None                                  |
| Granulovirus                              | None              | None   | None              | None             | None                                 | None  | None                                  |
| Guazatine                                 | 5.0               | 5.0  | None              | 0.1              | None                                 | None  | None                                  |
| Helicoverpa armigera nucleopolyhedrovirus | None              | None   | None              | None             | None                                 | None  | None                                  |
| Imazalil (Chloramizol)                    | 5.0               | 5.0  | 5.0               | 5.0              | 10.0                                 | 5.0   | 5.0                                   |
| Imidacloprid                              | 0.5               | 0.5  | 1.0               | 1.0              | 0.7                                  | 0.7 <sup>6</sup> , 0.3 <sup>13</sup> s                    | 0.5 <sup>13</sup>                     |
| Iprodione                                 | 1.0               | 1.0 <sup>20,10</sup> , 0.02 <sup>11</sup>                                  | None              | 0.1              | None                                 | 10.0  | 2.0 <sup>13</sup>                     |
| Isazophos                                 | 0.02              | 0.01   | None              | 0.1              | None                                 | 0.01  | None                                  |
| Kresoxim-methyl                           | 0.5               | 0.05   | 0.5 <sup>22</sup> | 0.1              | None                                 | 10.0  | 2.0 <sup>13</sup>                     |
| Mercaptothion                             | 4.0               | 0.02   | 7.0               | 0.1              | 8.0                                  | 4.0   | None                                  |
| Metalaxyl M (Mefenoxam)                   | 0.5               | 0.5  | 5.0               | 5.0              | 1.0                                  | 0.7   | None                                  |
| Methamidophos                             | 0.2               | 0.01   | None              | 0.1              | None                                 | 1.0   | 0.5                                   |
| Methidathion                              | 2.0               | 0.02   | 2.0               | 2.0              | 4.0 <sup>6</sup> , 6.0 <sup>10</sup> | 5.0   | None <sup>6</sup> , 5.0 <sup>13</sup> |
| Methiocarb                                | 0.1               | 0.1  | None              | 0.1              | None                                 | 0.05  | 0.05 <sup>6</sup> , 0.5 <sup>13</sup> |
| Methomyl (Thiodicarb)                     | 0.2               | 0.01   | 1.0               | 1.0              | 2.0                                  | 10.0  | 0.7 <sup>13</sup> , 1.0               |
| Methoxyfenozide                           | None <sup>n</sup> | 0.5  | 2.0               | 10.0             | 3.0                                  | 0.7   | 1.0 <sup>13</sup>                     |
| Methyl-parathion                          | 1.0               | 0.01   | None              | 0.1              | None                                 | 0.2   | None                                  |
| Mevinphos                                 | 0.1               | 0.01   | None              | 0.2              | None                                 | 0.2   | 0.2                                   |
| Monocrotophos                             | Not permitted     | Not permitted on SA fruit; 0.01 on fruit from other Sthn African countries | None              | 0.1              | None                                 | 0.2   | 0.2                                   |
| Orange Oil                                | Exempt            | None   | None              | None             | None                                 | Exempt  | None                                  |
| Omethoate                                 | 2.0               | 0.02   | None              | 1.5              | None                                 | 1.0   | 0.2 <sup>13</sup> , 0.01 <sup>6</sup> |
| Parathion                                 | 0.5               | 0.05   | None              | 1.0              | None                                 | 0.5   | None                                  |
| Permethrin                                | 0.01              | 0.01   | 0.5               | 0.1              | None                                 | 5.0   | 0.5                                   |
| Phenthoate                                | 1.0               | 0.01   | None              | 0.1              | None                                 | 0.1 (2.0 <sup>20</sup> , 5.0 <sup>11</sup> ) <sup>f</sup> | None                                  |
| Phosphorous acid                          | 50.0              | 15.0   | None              | 0.1              | Exempt                               | 0.01  | None                                  |
| Pirimicarb                                | 0.5               | 0.5  | 3.0               | 0.1              | None                                 | 0.05  | 0.05 <sup>11</sup> , 0.5 <sup>2</sup> |
| Paecilomyces lilacinus                    | None              | None   | None              | None             | None                                 | 0.01  | None                                  |
| Prochloraz                                | 2.0               | 2.0  | 10.0              | 0.1              | None                                 | 10.0 <sup>11</sup> , 5.0 <sup>7</sup>                     | 2.0 <sup>13</sup> , 5.0 <sup>22</sup> |
| Procymidone                               | 0.2               | 0.01   | None              | 0.1              | None                                 | 0.5   | None                                  |
| Profenofos                                | 1.0               | 0.01   | None              | 0.1              | None                                 | 0.05  | None                                  |
| Propargite                                | 2.0               | 2.0  | 3.0               | 5.0              | 5.0 <sup>6</sup>                     | 3.0   | 5.0                                   |
| Prothiofos                                | 0.05              | 0.01   | None              | 0.1              | None                                 | 0.1   | 0.2 <sup>13</sup>                     |
| Pyraclostrobin                            | 0.5               | 0.5  | 2.0               | 2.0              | 2.0                                  | 1.0   | 0.5 <sup>13</sup>                     |
| Pyrethrins (incl Pyrethrum)               | 1.0               | 1.0  | 0.05              | 1.0 <sup>2</sup> | Exempt                               | 1.0   | 1.0                                   |
| Pyrimethanil                              | 10.0              | 8.0  | 7.0               | 10.0             | 10.0                                 | 10.0  | 7.0 <sup>6</sup> , 1.0 <sup>13</sup>  |
| Pyriproxyfen                              | 0.2               | 0.2  | 0.5               | 0.1              | 0.5                                  | 0.5   | None                                  |
| SOPP                                      | 10.0              | 5.0  | 10.0              | 10.0             | 10.0                                 | 10.0  | 10.0                                  |
| Spinetoram                                | 0.05              | 0.05   | 0.07 <sup>7</sup> | 0.3              | 0.3                                  | 0.1 <sup>13</sup> , 0.7                                   | 0.05                                  |
| Spinosad                                  | 0.05              | 0.05   | 0.3               | 0.3              | 0.3                                  | 0.3   | 0.1 <sup>13</sup>                     |

| Chemical                 | RSA  | General export tolerance                  | Codex | Canada | USA  | Japan                                    | Korea               |
|--------------------------|------|---|-------|--------|------|--|---------------------|
| Spirodiclofen            | 0.01 | 0.01                                      | 0.4   | 0.5    | 0.5  | 2.0                                      | 2.0 <sup>13</sup>   |
| Spirotetramat            | 0.4  | 0.4                                       | 0.5   | 0.6    | 0.6  | 1.0                                      | 0.5 <sup>13</sup>   |
| Tartar emetic (Antimony) | 3.0  | 1.0                                       | None  | 0.1    | None | 0.01                                     | None                |
| Tau-Fluvalinate          | 1.0  | 0.1                                       | None  | 0.1    | None | 2.0                                      | None                |
| Tebuconazole             | 0.02 | 0.02                                      | None  | 0.1    | 1.3  | 5.0                                      | 2.0 <sup>13</sup>   |
| Teflubenzuron            | 0.5  | 0.05                                      | None  | 0.1    | None | 1.0                                      | 0.7 <sup>13</sup>   |
| Temephos                 | 1.0  | 0.01                                      | None  | 0.1    | None | 0.01                                     | None                |
| Terbufos                 | 0.1  | 0.01                                      | None  | 0.1    | None | 0.005                                    | None                |
| Tetradifon               | 5.0  | 0.02                                      | None  | 2.0    | None | 3.0                                      | 2.0                 |
| Thiabendazole            | 6.0  | 5.0                                       | 7.0   | 10.0   | 10.0 | 10.0                                     | 10.0                |
| Thiacloprid              | None | 0.02                                      | None  | 0.1    | None | 0.01                                     | 0.3 <sup>13</sup>   |
| Thiophanate-Methyl       | 5.0  | 0.01                                      | None  | 10.0   | 10.0 | 7.0 <sup>19,20</sup> , 3.0 <sup>11</sup> | None                |
| Trichlorfon              | 0.1  | 0.01                                      | None  | 0.1    | None | 0.1                                      | 0.1 <sup>13</sup>   |
| Trifloxystrobin          | 0.1  | 0.1                                       | 0.5   | 0.1    | 0.6  | 0.5                                      | 0.5 <sup>13</sup>   |
| Triflumuron              | 0.5  | 0.05 <sup>20</sup> ,<br>0.5 <sup>11</sup> | None  | 0.1    | None | 0.02                                     | 0.05                |
| 2,4-D                    | 2.0  | 1.0                                       | 1.0   | 2.0    | 5.0  | 2.0                                      | 2.0 <sup>7,20</sup> |
| 3,5,6 TPA/Trichlopyr     | 0.1  | 0.05                                      | None  | 0.1    | None | 0.1                                      | 0.1 <sup>13</sup>   |

"None" = no MRL, therefore fruit must be free of detectable residue. However, in the case of CODEX countries additional options may apply – refer to notes.

#### SUMMARY TABLE OF CHANGES EFFECTIVE FROM THIS EDITION

| Active              | Country     | Previous MRL            | New MRL                               | PHI Changes  |
|---------------------|-------------|-------------------------|---------------------------------------|--|
| Chlorantraniliprole | Canada      | 0.01                    | 0.7                                   | 7d PHI as registered   |
| Chlorantraniliprole | Japan       | 1.0, 0.01 <sup>13</sup> | 1.0, 0.1 <sup>13</sup>                | No change  |
| Chlorantraniliprole | Norway      |                         | 0.01                                  | Not later than 90% petal fall  |
| Difenoconazole      | Japan       | 0.01                    | 0.6 <sup>6</sup> , 0.01 <sup>13</sup> | No change  |
| Iprodione           | Korea       | None                    | 2.0 <sup>13</sup>                     | 115d PHI as registered for soft citrus and not later than 90% petal fall for other citrus <sup>m</sup> . |
| Methomyl            | Japan       | 1.0                     | 0.7 <sup>13</sup> , 1.0               | No change  |
| Pyrimethanil        | South Korea | 1.0 <sup>13</sup>       | 7.0 <sup>6</sup> , 1.0 <sup>13</sup>  | Do not use in HOT water bath for lemons and 90% petal fall for soft citrus <sup>m</sup> .                |
| Spinetoram          | Japan       | 0.3                     | 0.1 <sup>13</sup> , 0.7               | No change  |
| Spirotetramat       | South Korea | None                    | 0.5 <sup>m</sup>                      | 60d PHI as registered for soft citrus and not later than 90% petal for other citrus                      |
| Tebuconazole        | USA         | None                    | 1.3                                   | No change  |

## NOTES

### Numerical Superscripts:

- 1 fruit without peel/pulp
- 2 just oranges
- 3 exocarp of summer oranges
- 4 fruit (except exocarp of summer oranges)
- 5 just peel
- 6 except mandarin oranges
- 7 Oranges, sweet, sour
- 8 Citrus pulp, dried
- 9 Whole fruit
- 10 Clementines, mandarins
- 11 Other citrus
- 12 Except summer oranges
- 13 Mandarins
- 14 Pulp juice
- 15 No specific crop
- 16 Summer orange and mandarins
- 17 Summer orange, pulp and peel
- 18 Summer orange, pulp
- 19 Only grapefruit
- 20 Only lemons
- 21 mandarins, limes and lemons
- 22 grapefruit, oranges and pommelos.

“None” = no MRL, therefore fruit must be free of detectable residue. However, in the case of CODEX countries additional options may apply – refer to notes.

### Alphabetical Superscripts:

- a = CODEX (A): See Regions and Country Groupings Table below.
- b = CODEX (B): See Regions and Country Groupings Table below.
- c = USA has a MRL on citrus for Alpha- Cypermethrin (10mg/kg) and Zeta-Cypermethrin (0.35mg/kg) but none for Cypermethrin, which means only Alpha and Zeta-Cypermethrin formulations are suitable for the USA.
- d = Reference to “Citrus Fruits” in Taiwan MRL legislation should be interpreted as “oranges only” but “Citrus” refers to all citrus types.
- e= US Environmental Protection Agency has proposed revoking all citrus tolerances for the nematocide Aldicarb within the next 6 months.
- f = Proposed changes due to take effect some time in 2013 (WTO notification NJPN310)
- g = Norway has a new Chlorantraniliprole (Rynaxypyr) MRL of 0.01mg/kg. A PHI of not later than 90% petal fall applies.
- h = From 30<sup>st</sup> April 2012 all Endosulfan uses in South Africa will be prohibited by the Registrar of Act 36 of 1947
- j = Switzerland has a Cyhexatin MRL of 0.01mg/kg.
- k = Pending decision by Japanese authorities regarding the use of disinfectants.
- L = See CRI Production Guideline for appropriate application techniques.
- m = South Africa does not have access to South Korea for soft citrus currently but the MRL information is included here in anticipation of such access in future.
- n = Awaiting confirmation of the RSA MRL from Department of Health
- s = Japan have introduced a 0.3mg/kg MRL for imidacloprid on Satsuma’s (easy peelers)
- u = Aldicarb SA registration has been withdrawn and all aldicarb uses in SA must cease by 31<sup>st</sup> May 2012.
- x = A 10.0mg/kg citrus Azoxystrobin MRL has been proposed although the effective date was not notified (see WTO notice G/SPS/N/TPKM/247).
- y = Pay special attention to the introductory notes on page one (3<sup>rd</sup> paragraph) dealing with on lemons.

## REGIONS AND COUNTRY GROUPINGS

| Description   | Countries   |
|---|---|
| <b>CODEX A</b><br>(Where no national MRL is set, CODEX MRLs apply)  | <b>Africa</b> [Angola, Benin, Botswana, Congo (Republic of), Gabon, Kenya, Madagascar, Mali, Mauritius*, Mauritania, Namibia, Senegal, Seychelles, Reunion*, Sudan*, Tanzania]<br><b>Asia</b> [China (Peoples Republic of), Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, Viet Nam]          |
| <b>CODEX B</b><br>(Where no national MRL is set, CODEX MRLs apply, or when no CODEX MRL is set RSA MRL apply) | <b>Africa</b> [Burkina Faso, Cameroon, Cote D’Ivoire, Malawi, Nigeria, Tunisia, Uganda]<br><b>Asia</b> [Bangladesh, Sri Lanka]<br><b>Middle East</b> [Azerbaijan, Bahrain, Iran, Jordan*, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, , United Arab Emirates]<br><b>Other</b> [Russian Federation, Georgia*] |

\* It has not been possible to re-confirm these requirements recently but presumably they still apply