



Citrus Black Spot Spray Programmes 2024 – 2025

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Citrus Black Spot (CBS) chemical control programmes are influenced by various factors such as regional and seasonal climate, CBS history, orchard age and condition, citrus type, and alternative control methods including inoculum management. Hence, it is not possible to recommend a single standard programme. However, given the necessity to accomplish high levels of control for export to CBS-sensitive markets, the following guidelines were compiled. These guidelines do not necessarily have to be followed when exporting to non-CBS sensitive markets. However, good control of CBS in orchards whose fruit is not destined for CBS sensitive markets is still important.

- A. **Start of a chemical control programme (spray programme):** Fruit protection is recommended from 80% petal fall. **The date of 80% petal fall must be recorded for each orchard and be available on request, as this phenological stage can vary from orchard to orchard, or between seasons.** Sprays before 80% petal fall might lead to unprotected fruitlets. Infection periods before 80% petal fall, theoretically, need not be protected. Additionally, if the first CBS fungicide spray is applied later than the 80% petal fall date, records must be kept to show that no CBS infection periods occurred between the 80% petal fall date and the first spray. Two systems can be used to determine the risk associated with CBS namely: CRI-PhytRisk and CBS ascospore trapping data (QMS and Laeveld-Agrochem). A curative, systemic fungicide can be applied within a 3- to 28-day period after any CBS infection period, depending on the curative action of the systemic fungicide used (see point E).
- B. Whilst infection cannot occur in dry periods (in absence of fruit wetness periods longer than 12 hours), uninterrupted protection is recommended until the end of the fruit protection period (see point C), unless it can be demonstrated, as outlined above, that no CBS infection period occurred during periods between the end of the registered protection period of the previously sprayed products and the application (or

extent of curative action) of the follow-up spray.

- C. Fungicide spray programmes must be followed through until the recommended end, irrespective of the initial spray date. Duration of fruit protection needed is as follows.
- a. Navels:
 - i. All areas: protection until end-January.
 - b. Valencias:
 - i. Limpopo Valley (area of low pest prevalence): until end January
 - ii. All other areas: protection until end-February.
 - c. Lemons:
 - i. Limpopo Valley (area of low pest prevalence): until end-January.
 - ii. Northern regions: until end-February
 - iii. Southern regions (Eastern Cape Province): until end-March.
 - d. Soft citrus:

Note: Maturity of fruit, of the same cultivar, in different production areas may differ.

 1. Early mandarins (Satsumas + Clementines): protection until mid-January.
 2. Novas and mid-season mandarins: protection until end-January for CBS; longer protection needed for *Alternaria* brown spot.
 3. Late mandarins: protection until end-February.
 - e. Grapefruit: protection until end-January.
- D. **All fungicides used must be registered for CBS control under Act 36 of 1947, and must be used within the instructions specified on the label. IMPORTANT TO NOTE: Not all fungicide products listed in this document have necessarily been tested by CRI for efficacy against CBS. Consult product labels CAREFULLY as registration holders of certain products do not guarantee that their product will be effective under all conditions, including conditions of high CBS pressure.**
- E. The only fungicides with curative control ability are:
- a. Benzimidazoles (benomyl or carbendazim, various companies) applied at the higher concentration (50 g /100 L for benomyl and 55 mL / 100 L for carbendazim) and at full cover application; curative ability (time) not



- specified on label, but timing of registered use together with research and development trials indicate a curative action of 4 weeks. **NOTE:** Benomyl (carbendazim) containing products are due to be discontinued for use in South Africa from June 2024, and use will **ONLY** be permitted until the available stock is depleted.
- b. Strobilurins: Azoxystrobin, trifloxystrobin and pyraclostrobin have limited curative action, in some cases up to 3 days. Consult the specific product label on details of curative action. **ONLY certain pyraclostrobin products are registered for three applications per season, and only these tradenames can be used in a 3-application strategy per season.**
 - F. CBS control in organic citrus: a spray programme using copper fungicides during the fruit protection period **must include inoculum management.**
 - G. As a basic principle, continue using the recommended spray programme with which you achieved successful results in previous seasons, and make improvements (stricter control measures, including inoculum management strategies, or removal of neglected trees/orchards) whenever possible or required.
 - H. Inoculum management practices include removal of leaf litter, or shredding of pruning debris within orchards and the use of registered biological products applied as soil drenches, as per label registration. **Leaf removal (from August to beginning of October) was shown in research trials to be as effective as the fungicide spray programme in reducing CBS incidence.** Removal of fallen leaves and pruning debris, prior to flowering, will reduce the CBS inoculum load significantly and improve the efficacy of the chemical control programme.
 - I. Fungicide classes registered for use in CBS spray programmes (not all tested by CRI), with some specific notes:
 - a. Dithiocarbamates
 - i. Mancozeb – **Note MRL restrictions for certain markets. Consult the Recommended Usage Restrictions document regarding limitations for different markets.**
 1. Spray intervals when applied on its own are **NOT** 28 days, **but 25 days.**
 2. When applied in a programme with strobilurins, **if the first application was mancozeb, the first strobilurin tank mixture should be applied within 21-24 days.**
 - ii. Maneb/zinc oxide – **Note MRL restrictions for certain markets.**
 - b. Copper based products (e.g. copper oxychloride, cuprous oxide, or copper hydroxide)
 1. Copper sprays used twice within two successive months can result in fruit stippling. Fruit fly protein baits and copper can also give stippling.
 2. Stippling can be reduced by applying half-rates of copper in tank mixtures with Didecyl Dimethyl Ammonium Chloride (DDAC) (**Note label recommendations and MRL restrictions for certain markets).**
 - c. Benzimidazoles (benomyl, carbendazim)
 - i. Curative action at higher rates (50 g / 100 L for benomyl and 55 mL / 100 L for carbendazim) and at full cover sprays.
 - ii. High-risk for resistance development; use in mixture with chemically unrelated fungicide as registered. Try to avoid more than one application per season.
 - iii. **Resistance should be monitored regularly.**
 - iv. **Note MRL restrictions for certain markets. Consult the Recommended Usage Restrictions document regarding limitations for different markets.**
 - v. For lemons, also note the MRL restrictions for processing fruit.
 - vi. **Cutting Edge 388 states that new revised MRLs for the EU are likely to be voted on in September 2024 for the dithiocarbamates. The benzimidazole MRLs were voted on at the end of April at SCoPAFF level. New benomyl (carbendazim) MRLs are anticipated to take effect from March 2025 and the new dithiocarbamate MRLs from June 2025. It is therefore, important to make informed decisions on products to be applied on citrus fruit that will be in the European market from March 2025. It is likely that any**



- citrus marketed in the EU after March 2025 should be free from benzimidazole residues, as benzimidazole MRLs could potentially be set at level of detection (LOD). More clarity on permissible dithiocarbamate residues will likely be gained after September 2024, and the prospect of them being set to LOD should not be ruled out.**
- d. Strobilurins
- i. Limited curative action, in some cases up to 3 days. Consult specific product label.
 - ii. Recent research indicates that the risk for fungicide resistance development is low; however, ALWAYS use in a mixture with a chemically unrelated fungicide (benzimidazole, dodine, copper, dipotassium phosphate or mancozeb as is registered).
 - iii. **When applied as part of an Alternaria brown spot spray programme, no more than two consecutive strobilurin sprays should be applied and no more than a total of 2 applications per orchard during the season.** This is to reduce the chances of resistance development by the Alternaria Brown Spot (ABS) pathogen. Only certain strobilurins are registered for ABS and CBS control. Consult specific product label.
- e. Dipotassium phosphate
- i. In a tank mixture with strobilurins (pyraclostrobin or azoxystrobin), the first strobilurin + dipotassium phosphate tank mixture should be applied 21 days after the initial application of dipotassium phosphate. When dipotassium phosphate is applied as the last spray in spray programme 5 it will provide up to 28 days of protection. Consult the label for specific strobilurins compatible with this product in a tank mixture. **NOTE:** There is a warning on the label to the effect that when CBS infection pressure is high, disease symptoms may only be suppressed.
- f. Dodine
- i. Apply at 6-week (42-day) intervals and a maximum of two applications per season.
- g. Mefentrifluconazole + pyraclostrobin
- i. Apply at 42-day intervals and only a maximum of 3 applications per season.
 - h. Potassium bicarbonate
 - i. Apply at 25-day intervals on its own. No curative action.
 - J. Protection periods: curative and protective actions of different chemical groups are summarised below. These protection periods are the optimal protection periods. Fungicidal action does not immediately stop outside these periods, but the curative and protective actions will decline with time.
 - Dithiocarbamates (Mancozeb): 25-day protection. No curative action.
 - (Maneb/Zinc-oxide): 28-day protection. No curative action.
 - Copper: 25-35 days protection, depending on the product. Consult label of each product. No curative action.
 - Strobilurins: 6-week protection. Limited curative action, in some cases up to 3 days. Consult product label.
 - Benzimidazoles: 6-week protection. Four-week curative action at higher concentration and thorough full cover sprays (See point E.a.).
 - Dipotassium phosphate: 21-28 days protection. No curative action.
 - Potassium bicarbonate: 25-day protection. No curative action.
 - Dodine: 6-week protection. No curative protection.
 - Mefentrifluconazole + pyraclostrobin: 6-week (42-day) protection.
 - K. For systemic products (strobilurins and benzimidazoles), only use an adjuvant in a tank mixture as specifically recommended on the SYSTEMIC product's label. **In most cases, ONLY oil is recommended on the labels of these products and should therefore be used.**
 - L. At all times keep accurate spray records of products applied and their labels to prove that fruit was protected from infection for the whole fruit protection period.
 - M. The programmes given below were discussed with citrus growers who attended the previous CRI Disease Management workshops. There can be deviations from these programmes; e.g. if a grower who decided to use Option 1 runs into spraying problems because of rainfall, it will be possible for him to follow



up with a fungicide with a curative action and still be following an acceptable spray programme, taking into account the protection and curative action of the different products mentioned in point I. **Should significant rain occur within a**

few hours of spray application (prior to the drying of the fungicide product on the tree), please contact the fungicide registration holder to determine if re-application of the specific fungicide is necessary.

Examples of typical spray programmes for different regions; deviations from these examples can provide adequate (or improved) control as long as it is compliant with the minimum recommendations stated above and on the different product labels. Extension of spray protection beyond the indicated end of the fruit susceptibility period is optional and at the discretion of the grower.

1. Letsitele, Hoedspruit, Burgersfort, Groblersdal, Nelspruit, eSwatini & KZN

a) Navels, Mid-seasons, Valencias, lemons, mandarins

| Guidelines for spray applications | | | | | |
|-----------------------------------|----------------------------|----------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | Start of spray programme | 25 days later | 25 days later | 25 days later | 25 days later |
| 1* | Mancozeb (MZ)** | Mancozeb | Mancozeb | Mancozeb | Mancozeb |
| | Start of spray programme | 21-24 days later | 6 weeks later | 6 weeks later | 6 weeks later |
| 2 | Mancozeb | Benz/Strob+MZ+ oil | Benz/Strob+MZ+oil | Mancozeb | Mancozeb |
| | Start of spray programme | 6 weeks later | 6 weeks later | 6 weeks later | 6 weeks later |
| 3 | Benz+MZ+oil | Strob+MZ+oil | Strob+MZ+oil | Mancozeb | Mancozeb |
| 4*** | Strob + MZ +Oil | Strob + MZ +Oil | Strob + MZ +Oil | Mancozeb | Mancozeb |
| | Start of spray programme | 3 weeks later | 6 weeks later | 6 weeks later | 6 weeks later |
| 5 | Dipotassium phosphate (DP) | DP + Strob + oil | DP + Strob + oil | Dipotassium phosphate | Dipotassium phosphate |
| 6 | Mancozeb | Dodine + Medium Oil | Dodine + Medium Oil | Mancozeb | Mancozeb |
| 7 | Mancozeb | Dodine + Azoxystrobin**** + Medium Oil | Dodine + Azoxystrobin + Medium Oil | Mancozeb | Mancozeb |
| | Start of spray programme | 25 days later | 25 days later | 25 days later | 25 days later |
| 8 | Potassium bicarbonate | Potassium bicarbonate | Potassium bicarbonate | Potassium bicarbonate | Potassium bicarbonate |
| | Start of spray programme | 21 days later | 42 days later | 42 days later | 42 days later |
| 9 | Contact fungicide***** | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin |

*Programme 1 can also be alternated with copper

**Can also be applied in a tank mixture at half the dosage with DDAC, but no later than end December (160 day withholding period for DDAC; use less than 8 L/ha DDAC)

***The mancozeb in this programme can be substituted with copper and this programme is only allowed for a specific pyraclostrobin

****Consult the label for Dodine as only a certain azoxystrobin is specified on the label.

*****Apply a multisite contact fungicide registered for CBS, that ensures protection for at least 21 days.

European Union: New MRLs for benzimidazoles (i.e. benomyl/carbendazim) and dithiocarbamates (including mancozeb) are likely to take effect from March 2025, and June 2025, respectively. Make informed decisions on the choice of products to use on citrus fruit that will be in the EU market from March 2025. Benzimidazole MRLs may be set at level of detection (0.01 ppm), and it is therefore, likely that any citrus marketed in the EU after March 2025 should be free from benzimidazole residues. More clarity on permissible dithiocarbamate (including mancozeb) residues will likely be gained after September 2024 and the prospect of them being set to 0.01 ppm should not be ruled out.



b) Grapefruit specific examples for Letsitele, Hoedspruit, Onderberg, eSwatini & KZN

| | Start of spray programme | 25 days later | 25 days later | 25 days later | 25 days later |
|-------|--------------------------|------------------|------------------|------------------|---------------|
| 10* | Mancozeb** | Mancozeb | Mancozeb | Mancozeb | Mancozeb |
| | Start of spray programme | 21-24 days later | 4 -6 weeks later | 4 -6 weeks later | |
| 11*** | Mancozeb | Strob + MZ + oil | Strob+MZ+oil | Mancozeb | |

*Programme 10 can also be alternated with copper

**Can also be applied in a tank mixture at half the dosage with DDAC, but no later than end December (160 day withholding period for DDAC; use less than 8L/ha DDAC)

***Mancozeb in this programme can be substituted with dipotassium phosphate (see programme 5).

| | Start of spray programme | 4 weeks later | 6 weeks later | 6 weeks later |
|-----|--------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| 12* | Copper | Strob+copper+oil | Strob+copper+oil | Copper |
| 13 | Mancozeb | Strob+copper+oil | Strob+copper+oil | Copper |
| 14 | Mancozeb | Benz+MZ+oil | Benz+copper+oil | Copper |
| 15 | Mancozeb | Benz+copper+oil | Benz+copper+oil | Copper |
| | Start of spray programme | 5 weeks later | 5 weeks later | 5 weeks later |
| 16 | Copper | Copper | Copper | Copper |
| | Start of spray programme | 25 days later | 25 days later | 25 days later |
| 17 | Potassium bicarbonate | Potassium bicarbonate | Potassium bicarbonate | Potassium bicarbonate |
| | Start of spray programme | 3 weeks later | 6 weeks later | 6 weeks later |
| 18 | Mancozeb | Dodine + Medium Oil | Dodine + Medium Oil | Mancozeb |
| 19 | Mancozeb | Dodine + Azoxystrobin** + Medium Oil | Dodine + Azoxystrobin + Medium Oil | Mancozeb |
| | Start of spray programme | 21 days later | 42 days later | 42 days later |
| 20 | Contact fungicide*** | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin |

*Copper can be substituted with dipotassium phosphate. See programme 5.

**Consult the label for Dodine, as only a certain azoxystrobin is specified on the label.

***Apply a multisite contact fungicide registered for CBS, that ensures protection for at least 21 days. ONLY certain copper formulations are registered to be sprayed in tank mixtures with strobilurins. It is therefore important to consult the label of the product being sprayed in conjunction with a certain copper formulation.

Canada & USA (Note: For Canada no mancozeb later than end December; for USA no mancozeb or benzimidazoles later than 90% petal fall).

South Korea (Note: no mancozeb/maneb to be applied later than end of December and no benzimidazoles later than 90% petal fall).

Other markets: Restrictions regarding mancozeb are also in place for other markets, not mentioned above. Consult the Recommended Usage Restrictions for Plant Protection Products document.

European Union: New MRLs for benzimidazoles (i.e. benomyl/carbendazim) and dithiocarbamates (including mancozeb) are likely to take effect from March 2025, and June 2025, respectively. Make informed decisions on the choice of products to use on citrus fruit that will be in the EU market from March 2025. Benzimidazole MRLs may be set at level of detection (0.01 ppm), and it is therefore, likely that any citrus marketed in the EU after March 2025 should be free from benzimidazole residues. More clarity on permissible dithiocarbamate (including mancozeb) residues will likely be gained after September 2024 and the prospect of them being set to 0.01 ppm should not be ruled out.



2. Limpopo River Valley, Tshipise/ Weipe (Area of low pest prevalence)

All cultivars (Note: For Canada no mancozeb later than end December; for USA no mancozeb or benzimidazoles later than 90% petal fall)

Note: No mancozeb/maneb to be applied later than end of December and no benzimidazoles later than 90% petal fall for South Korea

Other markets: Restrictions regarding mancozeb are also in place for other markets, not mentioned above. Consult the Recommended Usage Restrictions for Plant Protection Products document

| | 80 % petal fall | After first sufficient rainfall | 6 weeks later |
|----------------|-----------------|---------------------------------|---------------|
| 21 | | Benz+MZ+oil | Benz+MZ+oil |
| 22 | | Benz+MZ+oil | Copper |
| 23 | | Strob +Copper+Oil | Copper |
| 24 | Mancozeb | Strob+Copper+Oil | Copper |
| 25 | Copper | Strob+Copper+Oil | Copper |
| Mid Dec | | | |
| 26 | | Benz+MZ+oil | |

European Union: New MRLs for benzimidazoles (i.e. benomyl/carbendazim) and dithiocarbamates (including mancozeb) are likely to take effect from March 2025, and June 2025, respectively. Make informed decisions on the choice of products to use on citrus fruit that will be in the EU market from March 2025. Benzimidazole MRLs may be set at level of detection (0.01 ppm), and it is therefore, likely that any citrus marketed in the EU after March 2025 should be free from benzimidazole residues. More clarity on permissible dithiocarbamate (including mancozeb) residues will likely be gained after September 2024 and the prospect of them being set to 0.01 ppm should not be ruled out.

3. Eastern Cape Province

a) Clementines, Satsumas, Novas, early and mid-season mandarins

| Clementines, Satsumas and early mandarins | | | | |
|-------------------------------------------|--------------------------|--------------------------------------------|-----------------------------------------|-----------------------------------------|
| | Start of spray programme | 21-24 days later | 6 weeks later | |
| 27* | Mancozeb | Strob+MZ+oil | Copper** | |
| | Start of spray programme | 6 weeks later | 6 weeks later | |
| 28*** | Benz/Strob+MZ+oil | Strob+MZ+oil | Mancozeb | |
| Novas and mid-season mandarin | | | | |
| | Start of spray programme | 21-24 days later | 6 weeks later | 6 weeks later |
| 29**** | Mancozeb | Strob+MZ+oil | Strob****+MZ+oil | Mancozeb |
| | Start of spray programme | 6 weeks later | 6 weeks later | |
| 30*** | Strob+MZ+oil | Strob+MZ+oil | Mancozeb | |
| | Start of spray programme | 3 weeks later | 6 weeks later | 6 weeks later |
| 31 | Mancozeb | Dodine + Medium Oil | Dodine + Medium Oil | Mancozeb |
| 32 | Mancozeb | Dodine + Azoxystrobin***** + Medium Oil | Dodine + Azoxystrobin + Medium Oil | Mancozeb |
| | Start of spray programme | 21 days later | 42 days later | 42 days later |
| 33 | Contact fungicide***** | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin |

* The mancozeb at the beginning of programme 27 can be substituted with dipotassium phosphate or copper

**The copper at the end of the programme can be substituted with dipotassium phosphate



*** The mancozeb at the end of programmes 28 and 30 can be substituted with dipotassium phosphate or copper

****In this programme, mancozeb can also be substituted with dipotassium phosphate or copper

****Make sure that the PHI for strobilurin is within MRL limits at harvest. Satsumas & Clementines are poor hosts of CBS

*****Consult the label for Dodine, as only a certain azoxystrobin is specified on the label.

*****Apply a multisite contact fungicide registered for CBS, that ensures protection for at least 21 days.

Canada & USA (Note: For Canada no mancozeb later than end December; for USA no mancozeb or benzimidazoles later than 90% petal fall)

South Korea (Note: no mancozeb/maneb to be applied later than end of December and no benzimidazoles later than 90% petal fall)

Other markets: Restrictions regarding mancozeb are also in place for other markets, not mentioned above. Consult the Recommended Usage Restrictions for Plant Protection Products document

European Union: New MRLs for benzimidazoles (i.e. benomyl/carbendazim) and dithiocarbamates (including mancozeb) are likely to take effect from March 2025, and June 2025, respectively. Make informed decisions on the choice of products to use on citrus fruit that will be in the EU market from March 2025. Benzimidazole MRLs may be set at level of detection (0.01 ppm), and it is therefore, likely that any citrus marketed in the EU after March 2025 should be free from benzimidazole residues. More clarity on permissible dithiocarbamate (including mancozeb) residues will likely be gained after September 2024 and the prospect of them being set to 0.01 ppm should not be ruled out.

b) Navels and grapefruit

| | Start of spray programme | 21-24 days later | 6 weeks later | 6 weeks later |
|-----|--------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|
| 34* | Mancozeb | Strob+MZ+oil | Strob**+MZ+oil | Mancozeb |
| | Start of spray programme | 3 weeks later | 6 weeks later | 6 weeks later |
| 35 | Mancozeb | Dodine + Medium Oil | Dodine + Medium Oil | Mancozeb |
| 36 | Mancozeb | Dodine + Azoxystrobin*** + Medium Oil | Dodine + Azoxystrobin + Medium Oil | Mancozeb |
| | Start of spray programme | 21 days later | 42 days later | 42 days later |
| 37 | Contact fungicide**** | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin |
| | Start of spray programme | 6 weeks later | 6 weeks later | |
| 38* | Strob/Benz+MZ+Oil | Strob+MZ+oil | Mancozeb | |

*The mancozeb at the beginning and end of this programme can be substituted with dipotassium phosphate or copper

**Make sure that the PHI for strobilurin is within MRL limits at harvest

***Consult the label for Dodine, as only a certain azoxystrobin is specified on the label.

****Apply a multisite contact fungicide registered for CBS, that ensures protection for at least 21 days.

Note: For Canada and South Korea replace mancozeb with copper after December. For the USA replace mancozeb with copper and benzimidazoles with strobilurins after 90% petal fall. For South Korea, replace benzimidazoles with strobilurins after 90% petal fall.

Other markets: Restrictions regarding mancozeb are also in place for other markets, not mentioned above. Consult the Recommended Usage Restrictions for Plant Protection Products document.

European Union: New MRLs for benzimidazoles (i.e. benomyl/carbendazim) and dithiocarbamates (including mancozeb) are likely to take effect from March 2025, and June 2025, respectively. Make informed decisions on the choice of products to use on citrus fruit that will be in the EU market from March 2025. Benzimidazole MRLs may be set at level of detection (0.01 ppm), and it is therefore, likely that any citrus marketed in the EU after March 2025 should be free from benzimidazole residues. More clarity on permissible dithiocarbamate (including mancozeb) residues will likely be gained after September 2024 and the prospect of them being set to 0.01 ppm should not be ruled out.



c) Late Mandarins and Valencias

| | Start of spray programme | 21-24 days later | 6 weeks later | 6 weeks later |
|------|--------------------------|---------------------------------------|--------------------------------------|--------------------------------------|
| 39* | Mancozeb | Strob+MZ+oil | Strob+MZ+oil | Copper |
| | Start of spray programme | 6 weeks later | 6 weeks later | |
| 40** | Strob/Benz+MZ+Oil | Strob+MZ+oil | Strob+MZ+oil | Mancozeb |
| | Start of spray programme | 3 weeks later | 6 weeks later | 6 weeks later |
| 41 | Mancozeb | Dodine + Medium Oil | Dodine + Medium Oil | Mancozeb |
| 42 | Mancozeb | Dodine + Azoxystrobin*** + Medium Oil | Dodine + Azoxystrobin + Medium Oil | Mancozeb |
| | Start of spray programme | 21 days later | 42 days later | 42 days later |
| 43 | Contact fungicide**** | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin |

*Mancozeb at the beginning of the program can be substituted with dipotassium phosphate or copper.

**The mancozeb at the end of this programme can be substituted with copper or dipotassium phosphate. Currently, the 3 strobilurin programme is only allowed for a specific pyraclostrobin tradename.

***Consult the label for Dodine, as only a certain azoxystrobin is specified on the label.

****Apply a multisite contact fungicide registered for CBS, that ensures protection for at least 21 days.

Note: For Canada and South Korea replace mancozeb with copper after December. For the USA replace mancozeb with copper after 90% petal fall.

Other markets: Restrictions regarding mancozeb are also in place for other markets, not mentioned above. Consult the Recommended Usage Restrictions for Plant Protection Products document.

European Union: New MRLs for benzimidazoles (i.e. benomyl/carbendazim) and dithiocarbamates (including mancozeb) are likely to take effect from March 2025, and June 2025, respectively. Make informed decisions on the choice of products to use on citrus fruit that will be in the EU market from March 2025. Benzimidazole MRLs may be set at level of detection (0.01 ppm), and it is therefore, likely that any citrus marketed in the EU after March 2025 should be free from benzimidazole residues. More clarity on permissible dithiocarbamate (including mancozeb) residues will likely be gained after September 2024 and the prospect of them being set to 0.01 ppm should not be ruled out.

d) Lemons

| | Start of spray programme | 21-24 days later | 6 weeks later | 6 weeks later | 6 weeks later |
|------|--------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------|
| 44* | Mancozeb | Benz/Strob+MZ+ oil | Strob+MZ+oil | Strob+MZ+oil | Copper |
| | Start of spray programme | 6 weeks later | 6 weeks later | 6 weeks later | |
| 45** | Strob +MZ+ oil | Strob +/Cu/DP+ oil | Strob +/Cu/DP+ oil | Copper | |
| | Start of spray programme | 21 days later | 42 days later | 42 days later | |
| 46 | Contact fungicide*** | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | |

*The mancozeb at the beginning of the programme can be substituted with dipotassium phosphate or copper.

** The mancozeb can be substituted with dipotassium phosphate (DP) or copper (Cu)

***Apply a multisite contact fungicide registered for CBS, that ensures protection for at least 21 days.

Note: For Canada and South Korea replace mancozeb with copper after December. For the USA replace mancozeb with copper and benzimidazoles with strobilurins after 90% petal fall. For South Korea, replace benzimidazoles with strobilurins after 90% petal fall.

Other markets: Restrictions regarding mancozeb are also in place for other markets, not mentioned above. Consult the Recommended Usage Restrictions for Plant Protection Products document.



European Union: New MRLs for benzimidazoles (i.e. benomyl/carbendazim) and dithiocarbamates (including mancozeb) are likely to take effect from March 2025, and June 2025, respectively. Make informed decisions on the choice of products to use on citrus fruit that will be in the EU market from March 2025. Benzimidazole MRLs may be set at level of detection (0.01 ppm), and it is therefore, likely that any citrus marketed in the EU after March 2025 should be free from benzimidazole residues. More clarity on permissible dithiocarbamate (including mancozeb) residues will likely be gained after September 2024 and the prospect of them being set to 0.01 ppm should not be ruled out.

e) Lemons (Fruit processing)*

| | Start of spray programme | 5 weeks | 6 weeks later | 6 weeks later | 5 weeks later |
|----|---------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|----------------|
| 47 | Copper | Strob+copper+oil | Strob+copper+oil | Copper | Copper* |
| | | 5 weeks | 5 weeks | 5 weeks | 5 weeks |
| 48 | Copper | Copper | Copper | Copper | Copper |
| | Start of spray programme | 21 days later | 42 days later | 42 days later | |
| 49 | Contact fungicide** | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | Mefentrifluconazole + Pyraclostrobin | |

***Note: When processing fruit for juice, only strobilurins and copper or dipotassium phosphate products allowed, but Mefentrifluconazole + Pyraclostrobin in programme 49 can also be used. Processing fruit for citrus rind oil, only copper products allowed.**

****Apply a multisite contact fungicide registered for CBS, that ensures protection for at least 21 days, but taking into account that copper or dipotassium phosphate are allowed for fruit processed for juice.**



Sitruswartvlek spuitprogramme 2024 – 2025

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Die chemiese beheerprogramme van Sitruswartvlek (SSV) word deur 'n verskeidenheid faktore beïnvloed, soos streeks- en seisoenale klimaat, SSV-geskiedenis, boord-ouderdom en -toestand, sitrustipe en alternatiewe beheermetodes, insluitend inokulum-bestuursprogramme. Dit is dus nie moontlik om 'n standaard program aan te beveel nie. Gegewe die noodsaaklikheid om hoë vlakke van beheer vir SSV na sensitiewe markte te handhaaf, word die volgende riglyne vir effektiewe SSV-beheer voorgedra. Hierdie riglyne hoef nie noodwendig gevolg te word wanneer daar nie na SSV-sensitiewe markte uitgevoer word nie. Goeie beheer van SSV in hierdie boorde is egter steeds belangrik. Die riglyne is as volg:

- A. **Begin van 'n chemiese beheerprogram (spuitprogram):** Vrugsbeskerming word vanaf 80% blomblaarval aanbeveel. **Die datum van 80% blomblaarval moet vir elke boord genotuleer word en op aanvraag beskikbaar wees, aangesien fenologiese stadium van boord tot boord, of seisoen tot seisoen, kan varieer.** Bespuitings vóór 80% blomblaarval kan tot onbeskermdes vruggies lei. Infeksiëperiodes vóór 80% blomblaarval, benodig teoreties nie beskerming nie. Bykomend, indien eerste SSV-bespuiting later as die 80% blomblaarvaldatum toegedien is, moet daar deur rekordhouding bewys kan word dat daar geen SSV-infeksiëperiodes tussen die 80% blomblaarvaldatum en die eerste bespuiting was nie. Twee sisteme kan gebruik word om die risiko verbonde aan SSV te bepaal: CRI-PhytRisk en SSV-askosporlokvaldata (QMS en Laeveld Agrochem). 'n Kuratiewe sistemiese swamdoder kan binne 'n 3-28-dag-periode ná enige SSV-infeksiëperiode aangewend word, afhangend van die kuratiewe aksie van die swamdoder (sien punt E).
- B. Alhoewel infeksie nie in droë periodes (in afwesigheid van 12 ure vrug- of blaarnatheid) kan plaasvind nie, word ononderbroke vrugsbeskerming tot aan die einde van die aanbevole vrugsbeskermingsperiode aanbeveel (sien punt C), tensy, soos bo verduidelik, daar bewys kan word dat geen SSV-

infeksiëperiodes tussen die einde van die aanbevole beskermingsperiode van die vorige bespuiting, en die toediening (of die kuratiewe periode) van die opvolgbespuiting was nie.

- C. Swamdodersspuitprogramme moet tot die einde van die aanbevole vrugsbeskerming deurgevoer word, ongeag die aanvanklike spuitdatum. Tydsduur van vrugsbeskerming en die aanbevole periode van vrugsbeskerming is as volg:
- a. Nawels:
 - i.) Alle areas: beskerming tot einde Januarie.
 - b. Valencias:
 - i.) Limpopo-vallei (area van lae SSV-voorkoms): tot einde Januarie
 - ii) All ander areas: Beskerming tot einde Februarie.
 - c. Suurlemoene:
 - i) Limpopo-vallei (area van lae SSV-voorkoms): tot einde Januarie.
 - ii) Noordelike streke: tot einde Februarie
 - iii) Suidelike streke (Oos-Kaap-provinsie): tot einde Maart.
 - d. Sagtesitrus :

Nota: Rypheid van vrugte, van dieselfde kultivar, in verskillende produksie-areas kan verskil.

 1. Vroeë mandaryne (Satsumas + Clementines): beskerming tot middel Januarie.
 2. Novas en mid-seisoen mandaryne: beskerming tot einde Januarie vir SSV; langer beskerming word vir Alternaria bruinvlek benodig
 3. Láát mandaryne: beskerming tot einde Februarie.
 - e. Pomelos: beskerming tot einde Januarie.
 - D. **Alle swamdoders wat gebruik word moet vir SSV-beheer onder Wet 36 van 1947 geregistreer wees en moet binne die instruksies soos dit op die etiket beskryf word, gebruik word. BELANGRIK OM OP TE LET: Nie alle swamdoderprodukte hierin gelys, is noodwendig deur CRI vir doeltreffendheid teen SSV getoets nie. Raadpleeg produk-etiket DEEGLIK aangesien registrasiehouers van sekere produkte nie waarborg dat hul produk onder alle toestande doeltreffend sal wees nie, insluitend toestande van hoë SSV-druk.**
 - E. Die enigste swamdoders met kuratiewe beheeraksie is:



- a. Bensimidazole (benomil of karbendasim, verskeie maatskappye) toegedien teen die hoër dosis (50 g / 100 L vir benomil en 55 mL / 100 L vir karbendasim) teen voldekbepuiting; kuratiewe eienskappe (tyd) is nie op die etiket gespesifiseer nie, maar die tyd van toediening soos per registrasie, tesame met navorsing en ontwikkelingsproewe, dui op 'n kuratiewe aksie van 4 weke. **NOTA: Benomyl- (carbendazim) bevattende produkte sal vanaf Junie 2024 gestaak word vir gebruik in Suid-Afrika, en gebruik sal SLEGS toegelaat word totdat die beskikbare voorraad uitgeput is.**
- b. Strobilurine: Asoksistrobien, trifloksistrobien en piraklostrobien het 'n beperkte kuratiewe werking, in sommige gevalle tot 3 dae. Raadpleeg spesifieke produk se etiket vir besonderhede oor kuratiewe aksie. **SLEGS sekere piraklostrobiene is vir drie aanwendings per seisoen geregistreer. Tans is dit slegs daardie handelsname wat as sulks geregistreer is, wat in 'n 3-aanwendingsstrategie per seisoen in 'n boord gebruik kan word.**
- F. SSV-beheer in organiese sitrus: volg 'n spuitprogram met koper-swamdoders tydens die vrugbeskermingsperiode en sluit **ook inokulumbestuur** in.
- G. **As 'n basiese beginsel, gaan voort om die aanbevole spuitprogramme te volg wat gedurende die vorige seisoene goeie resultate opgelewer het**, en maak verbetering (strenger beheermaatreëls, insluitende inokulumbestuurstrategieë, of verwydering van verwaarloosde bome/boorde) waar moontlik of waar vereis word.
- H. Inokulumbestuurstrategieë sluit in: verwydering van blaas-afval, versnippering van snoei-afval in boorde, en die gebruik van geregistreerde biologiese beheerprodukte as gronddeurdrenkmiddels, volgens etiket. **Blaasverwydering (van Augustus tot begin Oktober) het in navorsingsproewe getoon dat dit net so doeltreffend soos die swamdoderspuitprogram is om SSV-**
- voorkoms te verminder.** Verwydering van gevalle blare en snoei-afval, vóór blom, sal die SSV-inokulumlading aansienlik verminder en die doeltreffendheid van die chemiese beheerprogram verbeter.
- I. Swamdoderklasse geregistreer (nie almal deur CRI getoets nie) vir gebruik in SSV-spuitprogramme met spesifieke notas:
- a. Dithiokarbamate
- i. Mankoseb – **Let op daar is MRL-beperkings vir sekere markte. Raadpleeg die “Recommended Usage Restrictions” vir beperkings vir verskillende markte.**
1. Spuit-intervalle wanneer alleen gebruik word, is **NIE 28 dae nie, maar 25 dae.**
 2. Wanneer dit deel uitmaak van 'n spuitprogram waarvan strobilurine ook deel is, en **as mankoseb die eerste toediening was, moet die eerste strobilurien-tenkmengsel binne 21-24 dae daarna toegedien word.**
- ii. Maneb/Sinkoksied – **Let op daar is MRL-beperkings vir sekere markte.**
- b. Koper-gebaseerde produkte (bv. koper-oksichloried, koper-oksied of koper-hidroksied)
1. Koperbespuitings wat twee keer binne twee opeenvolgende maande gebruik word, kan tot vrugstippeling aanleiding gee. Vrugtevlieg proteïenlokaas en koper kan ook tot stippeling aanleiding gee.
 2. Stippeling kan verminder word deur koperkonsentrasies in tenkmengsels met Didecyl Dimethiel Ammonium Chloried (DDAC) te halveer. **(Let op etiket-aanbevelings en MRL-beperkings vir sekere markte)**
- c. Bensimidazole (benomil, karbendasim)
- i. Kuratiewe aksie teen hoër dosisse (50 g / 100 L vir benomil en 55 mL / 100 L vir karbendasim) en teen voldekbepuitings.
 - ii. Hoë risiko vir weerstands-ontwikkeling: gebruik in kombinasie met 'n chemies nie-verwante swamdoder soos geregistreer. Probeer om meer as een bespuiting per seisoen te vermy.

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- iii. Weerstand moet gereeld gemonitor word.
- iv. Let op daar is MRL-bepenkings vir sekere markte. Raadpleeg die “Recommended Usage Restrictions” vir beperkings vir verskillende markte.
- v. Vir suurlermoene let ook daar is MRL-bepenkings op vrugte vir prosessering.
- vi. **Snykant 388 bepaal dat daar waarskynlik in September 2024 vir die ditiokarbamate oor nuwe hersiene MRL'e vir die EU gestem sal word. Die bensimidiasool MRL'e is aan die einde van April op SCoPAFF-vlak ingestem. Nuwe benomyl (carbendazim) MRL's sal na verwagting vanaf Maart 2025 in werking tree, en die nuwe ditiokarbamate MRL'e vanaf Junie 2025. Dit is dus belangrik om ingeligte besluite te neem oor produkte wat op sitrusvrugte toegedien moet word wat ná Maart 2025 in die Europese mark sal wees. Dit is waarskynlik dat enige sitrus wat ná Maart 2025 in die EU bemark word, vry van bensimidiasoolresidue moet wees, aangesien bensimidiasool MRL'e moontlik op opsporingsvlak (LOD) gestel kan word. Meer duidelikheid oor toelaatbare ditiokarbamaatresidue sal waarskynlik ná September 2024 verkry word, en die vooruitsig dat dit op LOD gestel word, moet nie uitgesluit word nie.**
- d. Strobiluriene
 - i. Beperkte kuratiewe aksie, in sommige gevalle tot 3 dae. Raadpleeg spesifieke produk se etiket vir besonderhede.
 - ii. Onlangse navorsing toon dat die risiko vir fungisied weerstands-ontwikkeling laag is; gebruik nogtans in 'n mengsel met 'n chemies nie-verwante swamdoder (bensimidiasole, dodien, koper, dikaliumfosfaat of mankoseb soos geregistreer).
 - iii. **Wanneer aangewend word as deel van 'n Alternaria Bruinvlek (ABV) spuitprogram, moet nie meer as 2 opeenvolgende strobilurientoedienings toegelaat**

word nie en nie meer as 2 toedienings per boord in totaal gedurende die seisoen nie. Dit is om die kans vir die ontwikkeling van weerstand deur die Alternaria Bruinvlek (ABV) patoog te verminder. Slegs sekere strobiluriene is vir ABV- en SSV-beheer geregistreer. Raadpleeg die spesifieke produk se etiket.

- e. Dikaliumfosfaat
 - i. In 'n tenkmengsel met strobiluriene (piraklostrobien of asoksistrobien), moet die eerste strobilurien + dikaliumfosfaat tenkmengsel, 21 dae ná die eerste toediening van dikaliumfosfaat, toegedien word. Wanneer dikaliumfosfaat toegedien word as die laaste bespuiting in program 5, sal dit tot 28 dae beskerming gee. **Raadpleeg die etiket vir spesifieke strobiluriene wat met hierdie produk in 'n tenkmengsel verenigbaar is.** NOTA: Daar is 'n waarskuwing op die etiket dat wanneer SSV infeksiedruk hoog is, siektesimptome slegs onderdruk sal word.
- f. Dodien
 - i. Dien toe in 6-week (42-dag) intervalle en 'n maksimum van twee toedienings per seisoen.
- g. Mefentriflukonasool + piraklostrobien
 - i. Dien toe in 42-dag intervalle en slegs 'n maksimum van 3 toedienings per seisoen.
- h. Kaliumbikarbonaat
 - i. Dien alleen toe in 25-dag-intervalle. Geen kuratiewe aksie nie.
- J. Beskermingsperiodes: kuratiewe en beskermende aksies van verskillende chemiese groepe word hier onder opgesom. Hierdie beskermingsperiodes is die optimale beskermingsperiodes. Fungisidiese aksie stop nie onmiddellik ná hierdie periodes nie, maar die kuratiewe en beskermingsaksies sal met tyd afneem.
 - Dithiokarbamate (Mankoseb): 25 dae beskerming. Geen kuratiewe aksie.
 - (Maneb/Sinkoksied) 28 dae beskerming. Geen kuratiewe aksie.
 - Koper: 25-35 dae beskerming, afhangend van produk. Raadpleeg produk-etiket. Geen kuratiewe aksie.



- Strobiluriene: 6 weke beskerming. Beperkte kuratiewe aksie, in sommige gevalle tot 3 dae. Raadpleeg produk se etiket.
- Bensimidazole: 6 weke beskerming. Vier weke kuratiewe werking teen hoër dosis en deeglike voldekbespuitings (Sien punt E.a.).
- Dikaliumfosfaat: 21-28 dae beskerming. Geen kuratiewe aksie.
- Kalium bikarbonaat: 25 dae beskerming. Geen kuratiewe aksie nie.
- Dodien: 6-week beskerming. Geen kuratiewe beskerming.
- Mefentriflukonasool + piraklostrobien: 6-week (42-dag) beskerming.
- K. Vir sistemiese produkte (bensimidazole of strobiluriene), gebruik SLEGS benatters in tenkmengsels soos spesifiek op die SISTEMIESE produk se etiket aanbeveel word. **In meeste gevalle, word SLEGS olie aanbeveel op die etikette van hierdie produkte en moet dus daarom gebruik word.**
- L. Hou ten alle tye akkurate spuitrekords van produkte wat gespuit is en hulle etikette om te bewys dat vrugte vir die volle vrugbeskermingsperiode teen infeksies beskerm was.
- M. Die onderstaande programme is met sitrusprodusente wat die vorige CRI-produksiewerkswinkels bygewoon het, bespreek. Daar kan afwykings van hierdie programme wees, bv. as 'n produsent wat op Opsie 1 besluit het, moeilikheid met bespuitings weens reën ondervind, sal dit vir hom moontlik wees om dit met 'n swamdoder wat 'n kuratiewe aksie het, op te volg, en nog steeds 'n aanvaarbare spuitprogram kan volg, inaggenome die beskermende en kuratiewe aksie van die verskillende produkte soos onder punt I genoem. **Sou dit baie reën, binne 'n paar ure ná die bespuiting (voordat die swamdoderprodukt op die boom kon droogword), kontak asseblief die swamdoderregistrasiehouer om te bepaal of 'n herbespuiting van die spesifieke swamdoder nodig is**

Voorbeelde van tipiese spuitprogramme vir verskillende streke; afwykings van hierdie voorbeelde kan voldoende (of verbeterde) beheer tot gevolg hê solank dit in ooreenstemming is met die minimum aanbevelings soos hierbo uiteengesit, en op die verskillende produkte se etikette. Verlenging van spuitbeskerming tot ná die einde van vrugvatbaarheidsperiode, is opsioneel.

1. Letsitele, Hoedspruit, Burgersfort, Groblersdal, Nelspruit, eSwatini & KZN

a) Nawels, Mid-seisoene, Valencias, suurlemoene en mandaryne

| Riglyne vir spuitoedienings | | | | | |
|-----------------------------|------------------------|---------------------|--------------------|--------------|--------------|
| | Begin van spuitprogram | 25 dae later | 25 dae later | 25 dae later | 25 dae later |
| 1* | Mankoseb (MZ)** | Mankoseb | Mankoseb | Mankoseb | Mankoseb |
| | Begin van spuitprogram | 21-24 dae later | 6 weke later | 6 weke later | 6 weke later |
| 2 | Mankoseb | Benz/Strob+MZ+ olie | Benz/Strob+MZ+olie | Mankoseb | Mankoseb |
| | Begin van spuitprogram | 6 weke later | 6 weke later | 6 weke later | 6 weke later |
| 3 | Benz+MZ+olie | Strob+MZ+olie | Strob+MZ+olie | Mankoseb | Mankoseb |
| 4* | Strob+MZ+olie | Strob+MZ+olie | Strob+MZ+olie | Mankoseb | Mankoseb |
| | Begin van spuitprogram | 3 weke later | 6 weke later | 6 weke later | 6 weke later |
| 5 | Dikaliumfosfaat (DF) | DF+Strob+olie | DF+Strob+olie | DF | DF |

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| | | | | |
|---|-------------------------------|-------------------------------------------|---------------------------------------|---------------------------------------|
| 6 | Mankoseb | Dodien + Medium Olie | Dodien + Medium Olie | Mankoseb |
| 7 | Mankoseb | Dodien + Asoksistrobien**** + Medium Olie | Dodien + Asoksistrobien + Medium Olie | Mankoseb |
| | Begin van spuitprogram | 25 dae later | 25 dae later | 25 dae later |
| 8 | Kaliumbikarbonaat | Kaliumbikarbonaat | Kaliumbikarbonaat | Kaliumbikarbonaat |
| | Begin van spuitprogram | 21 dae later | 42 dae later | 42 dae later |
| 9 | Kontakswamdoder***** | Mefentrihlukonasool + Piraklostrobien | Mefentrihlukonasool + Piraklostrobien | Mefentrihlukonasool + Piraklostrobien |

* Program 1 kan ook met koper afgewissel word

** Kan ook in 'n tenkmeysel teen helfte van die dosis met DDAC toegedien word, maar nie later as einde Desember nie. (DDAC het 'n 160 dae weerhoudingsperiode; gebruik minder as 8L/ha DDAC)

*** Die mankoseb in hierdie program kan met koper vervang word en hierdie program word slegs vir 'n spesifieke piraklostrobien toegelaat

**** Raadpleeg die etiket vir Dodien aangesien slegs 'n sekere asoksistrobien op die etiket gespesifiseer word.

***** Dien 'n multi-setel kontakswamdoder toe wat vir CBS geregistreer is, wat beskerming vir ten minste 21 dae verseker.

Europese Unie: Nuwe MRL'e vir bensimidazole (benomyl/carbendazim) en ditiokarbamate (insluitend mankoseb) sal waarskynlik vanaf onderskeidelik Maart 2025 en Junie 2025 in werking tree. Neem ingeligte besluite oor die keuse van produkte om op sitrusvrugte te gebruik wat ná Maart 2025 in die EU-mark sal wees. Bensimidazole-MRL'e sal waarskynlik op opsporingsvlak (0.01dpm) vasgestel word, en dit is dus waarskynlik dat enige sitrus wat ná Maart 2025 in die EU bemark word, vry van bensimidazole-residue sal wees. Meer duidelikheid oor toelaatbare ditiokarbamate (insluitend mankoseb) residue sal waarskynlik ná September 2024 verkry word, en die vooruitsig dat dit op 0.01 dpm gestel word, moet nie uitgesluit word nie.

b) Pomelo-spesifieke voorbeelde vir Letsitele, Hoedspruit, Onderberg, eSwatini & KZN

| | | | | | |
|-----------|-------------------------------|------------------------|-----------------------|-----------------------|---------------------|
| | Begin van spuitprogram | 25 dae later | 25 dae later | 25 dae later | 25 dae later |
| 10* | Mankoseb** | Mankoseb | Mankoseb | Mankoseb | Mankoseb |
| | Begin van spuitprogram | 21-24 dae later | 4-6 weke later | 4-6 weke later | |
| 11** * | Mankoseb | Strob+MZ+olie | Strob+MZ +olie | Mankoseb | |

*Program 10 kan ook met koper afgewissel word.

**Kan ook in 'n tenkmeysel teen helfte van die dosis met DDAC toegedien word, maar nie later as einde Desember nie. (DDAC het 'n 160 dae weerhoudingsperiode; gebruik teen minder as 8L/ha DDAC)

***Mankoseb kan in hierdie program ook met Dikaliumpfosfaat vervang word (sien program 5).

| | | | | |
|-----|-------------------------------|---------------------|---------------------|---------------------|
| | Begin van spuitprogram | 4 weke later | 6 weke later | 6 weke later |
| 12* | Koper | Strob+Koper+olie | Strob+Koper+olie | Koper |
| 13 | Mankoseb | Strob+Koper+olie | Strob+Koper+olie | Koper |
| 14 | Mankoseb | Benz+MZ+Olie | Benz+Koper+Olie | Koper |
| 15 | Mankoseb | Benz+Koper+Olie | Benz+Koper+Olie | Koper |

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| | Middel Oktober | 5 weke later | 5 weke later | 5 weke later |
|----|-------------------------------|-----------------------------------------------|---------------------------------------------|------------------------------------------|
| 16 | Koper* | Koper | Koper | Koper |
| | Begin van spuitprogram | 25 dae later | 25 dae later | 25 dae later |
| 17 | Kaliumbikarbonaat | Kaliumbikarbonaat | Kaliumbikarbonaat | Kaliumbikarbonaat |
| | Begin van spuitprogram | 3 weke later | 6 weke later | 6 weke later |
| 18 | Mankoseb | Dodien + Medium Olie | Dodien + Medium Olie | Mankoseb |
| 19 | Mankoseb | Dodien + Asoksistrobien** + Medium Olie | Dodien + Asoksistrobien + Medium Olie | Mankoseb |
| | Begin van spuitprogram | 21 dae later | 42 dae later | 42 dae later |
| 20 | Kontakswamdoder*** | Mefentriklukonasool + Piraklostrobien | Mefentriklukonasool + Piraklostrobien | Mefentriklukonasool + Piraklostrobien |

*Koper kan met dikaliumfosfaat vervang word. Sien program 5.

** Raadpleeg die etiket vir Dodien aangesien slegs 'n sekere asoksistrobien op die etiket gespesifiseer word.

*** Dien 'n multi-setel kontakswamdoder toe wat vir CBS geregistreer is, wat beskerming vir ten minste 21 dae verseker.

SLEGS sekere koperformulasies is geregistreer om saam met strobiluriene in 'n tenkmengsel gespuit te word. Dit is dus belangrik om die etiket van die produk wat saam met 'n sekere koperformulasie gespuit word, te raadpleeg.

Kanada en VSA (Let op: Vir Kanada - geen mankoseb ná einde Desember nie. Vir VSA - geen mankoseb of bensimidazole ná 90% blomblaarval nie)

Suid-Korea (Let op: geen mankoseb/maneb kan aangewend word ná einde Desember nie en geen bensimidazole ná 90% blomblaarval nie).

Ander markte: Bepenkings op mankoseb is ook van toepassing op ander markte. Dit word egter nie hierbo genoem nie. Raadpleeg die "Recommended Usage Restrictions for Plant Protection Products" dokument.

Europese Unie: Nuwe MRL'e vir bensimidazole (benomyl/carbendazim) en ditiokarbamate (insluitend mankoseb) sal waarskynlik vanaf onderskeidelik Maart 2025 en Junie 2025 in werking tree. Neem ingeligte besluite oor die keuse van produkte om op sitrusvrugte te gebruik wat ná Maart 2025 in die EU-mark sal wees. Bensimidazole-MRL'e sal waarskynlik op opsporingvlak (0.01dpm) vasgestel word, en dit is dus waarskynlik dat enige sitrus wat ná Maart 2025 in die EU bemark word, vry van bensimidazole-residue sal wees. Meer duidelikheid oor toelaatbare ditiokarbamate (insluitend mankoseb) residue sal waarskynlik ná September 2024 verkry word, en die vooruitsig dat dit op 0.01 dpm gestel word, moet nie uitgesluit word nie.

2. Limpoporivier-vallei, Tshipise/ Weipe (Area van lae SSV-voorkoms)

Alle kultivars (Let op: Vir Kanada - geen mankoseb later as einde Desember nie; vir VSA geen mankoseb en bensimidazole later as 90% blomblaarval nie)

Suid-Korea (Let op: Geen mankoseb/maneb kan aangewend word ná einde Desember nie en geen bensimidazole ná 90% blomblaarval nie).

Ander markte: Bepenkings op mankoseb is ook van toepassing op ander markte. Dit word egter nie hierbo genoem nie. Raadpleeg die "Recommended Usage Restrictions for Plant Protection products" dokument.

| | 80 – 100% blomblaar val | Na eerste voldoende reënval | 6 weke later |
|----|-------------------------|-----------------------------|--------------|
| 21 | | Benz+MZ+olie | Benz+MZ+olie |
| 22 | | Benz+MZ+olie | Koper |
| 23 | | Strob+Koper+Olie | Koper |
| 24 | Mankoseb | Strob+Koper+Olie | Koper |
| 25 | Koper | Strob+Koper+Olie | Koper |

JOU HEFFING WERK VIR JOU – PRODUSENTE SE HEFFINGS WORD AANGEWEND OM DIE AKTIWITEITE VAN DIE CRI TE BEFONDS



| | | Middel Des | |
|----|--|--------------|--|
| 26 | | Benz+MZ+olie | |

Europese Unie: Nuwe MRL'e vir bensimidazole (benomyl/carbendazim) en ditiokarbamate (insluitend mankoseb) sal waarskynlik vanaf onderskeidelik Maart 2025 en Junie 2025 in werking tree. Neem ingeligte besluite oor die keuse van produkte om op sitrusvrugte te gebruik wat ná Maart 2025 in die EU-mark sal wees. Bensimidazole-MRL'e sal waarskynlik op opsporingsvlak (0.01dpm) vasgestel word, en dit is dus waarskynlik dat enige sitrus wat ná Maart 2025 in die EU bemark word, vry van bensimidazole-residue sal wees. Meer duidelikheid oor toelaatbare ditiokarbamate (insluitend mankoseb) residue sal waarskynlik ná September 2024 verkry word, en die vooruitsig dat dit op 0.01 dpm gestel word, moet nie uitgesluit word nie.

3. Oos-Kaap-provinsie

a) Clementines, Satsumas, Novas, vroeë- en mid-seisoen mandaryne

| Clementines, Satsumas en vroeë mandaryne | | | | |
|------------------------------------------|------------------------------------------------|--------------------------------------------|---------------------------------------|---------------------------------------|
| | Begin van spuitprogram (Middel Oktober) | 21-24 dae later | 6 weke later | |
| 27 | Mankoseb | Strob+MZ+olie | Koper | |
| | Begin van spuitprogram (Middel Oktober) | 6 weke later | 6 weke later | |
| 28*** | Bens/Strob+MZ+olie | Strob+MZ+olie | Mankoseb | |
| Novas en mid-seisoen mandaryne | | | | |
| | Begin van spuitprogram (Middel Oktober) | 21-24 dae later | 6 weke later | 6 weke later |
| 29**** | Mankoseb | Strob+MZ+olie | Strob****+MZ+olie | Mankoseb |
| | Begin van spuitprogram (Middel Oktober) | 6 weke later | 6 weke later | |
| 30*** | Strob+MZ+olie | Strob+MZ+olie | Mankoseb | |
| | Begin van spuitprogram | 3 weke later | 6 weke later | 6 weke later |
| 31 | Mankoseb | Dodien + Medium Olie | Dodien + Medium Olie | Mankoseb |
| 32 | Mankoseb | Dodien + Asoksistrobien***** + Medium Olie | Dodien + Asoksistrobien + Medium Olie | Mankoseb |
| | Begin van spuitprogram | 21 dae later | 42 dae later | 42 dae later |
| 33 | Kontakswamdoder***** | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien |

* Die mankoseb aan die begin van program 27 kan met dikaliumfosfaat of koper vervang word

** Die koper teen die einde van die program kan met dikaliumfosfaat vervang word

*** Die mankoseb aan die einde van programme 28 en 30 kan met dikaliumfosfaat of koper vervang word.

**** In hierdie program kan mankoseb ook met dikaliumfosfaat of koper vervang word

***** Maak seker dat die VOI van strobiluriene binne die MRL-limiete teen oes is. Satsumas en Clementines is swak gashere van SSV

***** Raadpleeg die etiket vir Dodien aangesien slegs 'n sekere asoksistrobien op die etiket gespesifiseer word

***** Dien 'n multi-setel kontakswamdoder toe wat vir CBS geregistreer is, wat beskerming vir ten minste 21 dae verseker.

Kanada & VSA (Let op: Vir Kanada geen mankoseb later as einde Desember nie; vir VSA geen mankoseb of bensimidazole later as 90% blomblaarval)

Suid-Korea: (Let op: geen mankoseb/maneb moet later as einde van Desember toegedien word nie en geen bensimidazole later as 90% blomblaarval nie)



Ander markte: Beperkings op mankoseb is ook van toepassing op ander markte. Dit word egter nie hierbo genoem nie. Raadpleeg die “Recommended Usage Restrictions for Plant Protection products” dokument.

Europese Unie: Nuwe MRL'e vir bensimidazole (benomyl/carbendazim) en ditiokarbamate (insluitend mankoseb) sal waarskynlik vanaf onderskeidelik Maart 2025 en Junie 2025 in werking tree. Neem ingeligte besluite oor die keuse van produkte om op sitrusvrugte te gebruik wat ná Maart 2025 in die EU-mark sal wees. Bensimidazole-MRL'e sal waarskynlik op opsporingsvlak (0.01dpm) vasgestel word, en dit is dus waarskynlik dat enige sitrus wat ná Maart 2025 in die EU bemark word, vry van bensimidazole-residue sal wees. Meer duidelikheid oor toelaatbare ditiokarbamaat (insluitend mankoseb) residue sal waarskynlik ná September 2024 verkry word, en die vooruitsig dat dit op 0.01 dpm gestel word, moet nie uitgesluit word nie.

b) Nawels en pomelo's

| | Begin van spuitprogram (Middel Oktober) | 21-24 dae later | 6 weke later | 6 weke later |
|-----|-----------------------------------------|------------------------------------------|---------------------------------------|---------------------------------------|
| 34* | Mankoseb | Strob+MZ+olie | Strob**+MZ***+olie | Mankoseb |
| | Begin van spuitprogram | 3 weke later | 6 weke later | 6 weke later |
| 35 | Mankoseb | Dodien + Medium Olie | Dodien + Medium Olie | Mankoseb |
| 36 | Mankoseb | Dodien + Asoksistrobien*** + Medium Olie | Dodien + Asoksistrobien + Medium Olie | Mankoseb |
| | Begin van spuitprogram | 21 dae later | 42 dae later | 42 dae later |
| 37 | Kontakswamdoder**** | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien |
| 38* | Strob/Bens+MZ+olie | Strob+MZ+olie | Mankoseb | |

* Die mankoseb aan die begin en einde van hierdie program kan met dikaliumfosfaat of koper vervang word

**Maak seker dat VOI van strobilurienes binne die MRL-limiete is teen oes.

*** Raadpleeg die etiket vir Dodien aangesien slegs 'n sekere asoksistrobien op die etiket gespesifiseer word

**** Dien 'n multi-setel kontakswamdoder toe wat vir CBS geregistreer is, wat beskerming vir ten minste 21 dae verseker.

Let op: Vir Kanada en Suid-Korea moet mankoseb met koper ná Desember vervang word. Vir die VSA moet mankoseb met koper, en bensimidazole met strobilurienne ná 90% blomblaarval vervang word. Vir Suid-Korea vervang bensimidazole met strobilurienne ná 90% blomblaarval.

Ander markte: Beperkings op mankoseb is ook van toepassing op ander markte. Dit word egter nie hierbo genoem nie. Raadpleeg die “Recommended Usage Restrictions for Plant Protection products” dokument.

Europese Unie: Nuwe MRL'e vir bensimidazole (benomyl/carbendazim) en ditiokarbamate (insluitend mankoseb) sal waarskynlik vanaf onderskeidelik Maart 2025 en Junie 2025 in werking tree. Neem ingeligte besluite oor die keuse van produkte om op sitrusvrugte te gebruik wat ná Maart 2025 in die EU-mark sal wees. Bensimidazole-MRL'e sal waarskynlik op opsporingsvlak (0.01dpm) vasgestel word, en dit is dus waarskynlik dat enige sitrus wat ná Maart 2025 in die EU bemark word, vry van bensimidazole-residue sal wees. Meer duidelikheid oor toelaatbare ditiokarbamaat (insluitend mankoseb) residue sal waarskynlik ná September 2024 verkry word, en die vooruitsig dat dit op 0.01 dpm gestel word, moet nie uitgesluit word nie.

c) Láát Mandaryne (vir SSV) en Valencias

| | Begin van spuitprogram (Middel Oktober) | 21-24 dae later | 6 weke later | 6 weke later |
|-----|-----------------------------------------|-----------------|---------------|--------------|
| 39* | Mankoseb | Strob+MZ+olie | Strob+MZ+olie | Koper |



| | Begin van spuitprogram (Middel Oktober) | 6 weke later | 6 weke later | |
|------|-----------------------------------------|------------------------------------------|---------------------------------------|---------------------------------------|
| 40** | Strob/Bens+MZ+olie | Strob+MZ+olie | Strob+MZ+olie | Mankoseb |
| | Begin van spuitprogram | 3 weke later | 6 weke later | 6 weke later |
| 41 | Mankoseb | Dodien + Medium Olie | Dodien + Medium Olie | Mankoseb |
| 42 | Mankoseb | Dodien + Asoksistrobien*** + Medium Olie | Dodien + Asoksistrobien + Medium Olie | Mankoseb |
| | Begin van spuitprogram | 21 dae later | 42 dae later | 42 dae later |
| 43 | Kontakswamdoder**** | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien |

* Die mankoseb aan die begin van die program kan met dikaliumfosfaat of koper vervang word

** Die mankoseb aan die einde van hierdie program kan met koper of dikaliumfosfaat vervang word.

*** Raadpleeg die etiket vir Dodien aangesien slegs 'n sekere asoksistrobien op die etiket gespesifiseer word

**** Dien 'n multi-setel kontakswamdoder toe wat vir CBS geregistreer is, wat beskerming vir ten minste 21 dae verseker.

Tans word die 3 strobilurien-program slegs vir 'n spesifieke piraklostrobien handelsnaam toegelaat. Let op: Vir Kanada en Suid-Korea moet mankoseb met koper ná Desember vervang word. Vir die VSA moet mankoseb met koper ná 90% blomblaarval vervang word.

Ander markte: Bepelings op mankoseb is ook van toepassing op ander markte. Dit word egter nie hierbo genoem nie. Raadpleeg die "Recommended Usage Restrictions for Plant Protection products" dokument.

Europese Unie: Nuwe MRL'e vir bensimidazole (benomyl/carbendazim) en ditiokarbamate (insluitend mankoseb) sal waarskynlik vanaf onderskeidelik Maart 2025 en Junie 2025 in werking tree. Neem ingeligte besluite oor die keuse van produkte om op sitrusvrugte te gebruik wat ná Maart 2025 in die EU-mark sal wees. Bensimidazole-MRL'e sal waarskynlik op opsporingvlak (0.01dpm) vasgestel word, en dit is dus waarskynlik dat enige sitrus wat ná Maart 2025 in die EU bemark word, vry van bensimidazole-residue sal wees. Meer duidelikheid oor toelaatbare ditiokarbamate (insluitend mankoseb) residue sal waarskynlik ná September 2024 verkry word, en die vooruitsig dat dit op 0.01 dpm gestel word, moet nie uitgesluit word nie.

d) Suurlemoene

| | Begin van spuitprogram (Begin Oktober) | 21-24 dae later | 6 weke later | 6 weke later | 6 weke later |
|------|----------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--------------|
| 44* | Mankoseb | Bens/Strob+MZ+olie | Strob+MZ+olie | Strob+MZ+olie | Koper |
| | Begin van spuitprogram | 6 weke later | 6 weke later | 6 weke later | |
| 45** | Strob +MZ+ olie | Strob +/Cu/DP+ olie | Strob +/Cu/DP+ olie | Koper | |
| | Begin van spuitprogram | 21 dae later | 42 dae later | 42 dae later | |
| 46 | Kontakswamdoder*** | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien | |

* Die mankoseb aan die begin van die program kan met dikaliumfosfaat of koper vervang word

** Die mankoseb kan vervang word met dikaliumfosfaat (DP) of koper (Cu)

*** Dien 'n multi-setel kontakswamdoder toe wat vir CBS geregistreer is, wat beskerming vir ten minste 21 dae verseker.

Let op: Vir Kanada en Suid-Korea moet mankoseb met koper ná Desember vervang word. Vir die VSA moet mankoseb met koper, en bensimidazole met strobilurien ná 90% blomblaarval vervang word. Vir Suid-Korea vervang bensimidazole met strobilurien ná 90% blomblaarval.

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Ander markte: Beperkings op mankoseb is ook van toepassing op ander markte. Dit word egter nie hierbo genoem nie. Raadpleeg die “Recommended Usage Restrictions for Plant Protection products” dokument.

Europese Unie: Nuwe MRL'e vir bensimidazole (benomyl/carbendazim) en ditiokarbamate (insluitend mankoseb) sal waarskynlik vanaf onderskeidelik Maart 2025 en Junie 2025 in werking tree. Neem ingeligte besluite oor die keuse van produkte om op sitrusvrugte te gebruik wat ná Maart 2025 in die EU-mark sal wees. Bensimidazole-MRL'e sal waarskynlik op opsporingsvlak (0.01dpm) vasgestel word, en dit is dus waarskynlik dat enige sitrus wat ná Maart 2025 in die EU bemark word, vry van bensimidazole-residue sal wees. Meer duidelikheid oor toelaatbare ditiokarbamate (insluitend mankoseb) residue sal waarskynlik ná September 2024 verkry word, en die vooruitsig dat dit op 0.01 dpm gestel word, moet nie uitgesluit word nie.

e) Suurlemoene (Vrugte vir prosessering)*

| | Begin van spuitprogram (Begin Oktober) | 5 weke | 6 weke later | 6 weke later | 5 weke later |
|----|----------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--------------|
| 47 | Koper | Strob+Koper+olie | Strob+Koper+Olie | Koper | Koper* |
| | | 5 weke | 5 weke | 5 weke | 5 weke |
| 48 | Koper | Koper | Koper | Koper | Koper |
| | Begin van spuitprogram | 21 dae later | 42 dae later | 42 dae later | |
| 49 | Kontakswamdoder** | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien | Mefentriflukonasool + Piraklostrobien | |

* Let op: Vrugte vir sapprosessering - slegs strobiluriene en koper of dikaliumfosfaat produkte word toegelaat, maar Mefentriflukonasool + Piraklostrobien in program 49 kan ook gebruik word. Vrugte wat vir sitrus skil-olies geprosesseer word - slegs koperprodukte word toegelaat.

** Dien 'n multi-setel kontakswamdoder toe wat vir CBS geregistreer is, wat beskerming vir ten minste 21 dae verseker, maar met inagneming dat koper- of dikaliumfosfaat toegelaat word vir vrugte wat vir sap verwerk word.