MAIZE
CROP PROTECTION

THE COMPLETE SOLUTION FOR YOU

ADAMA

Contents

General Introduction

Cereals South Africa

Maize (*Zea mays L*) is the most important grain crop in South Africa and is produced throughout the country under diverse environments. Successful maize production depends on the correct application of production inputs that will sustain the environment as well as agricultural production. In an average rainfall year South African farmers produce around 5.7 million tons of white maize and about 5.1 million tons of yellow maize. A bumper crop of around 16 million tons was achieved in 2017.

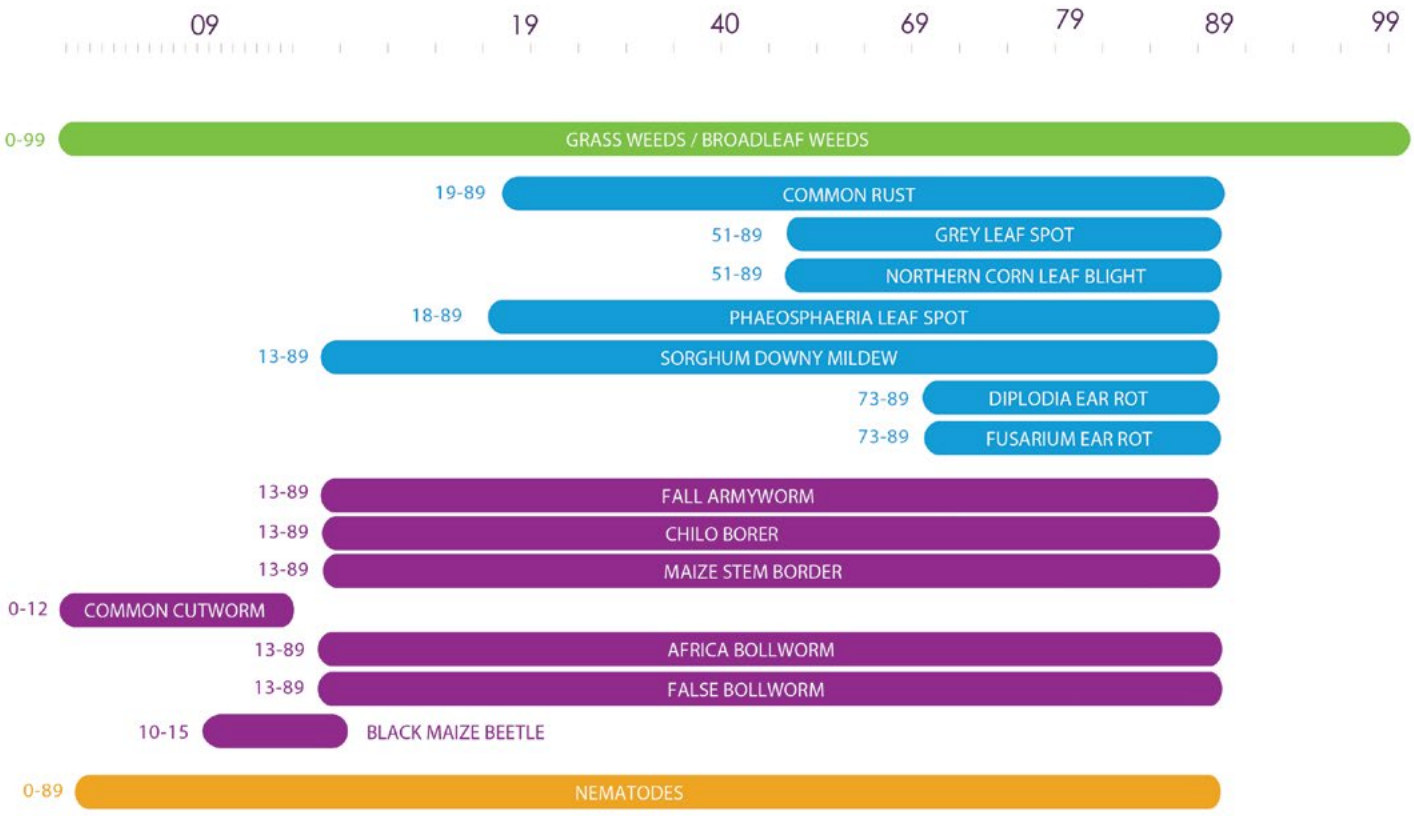
During, before and shortly after planting the main objective is to control weeds. The effect on yield of good weed management compared to no weed management can be around 350%. In the early stage of crop growth focus is shifted to preventative disease and insect management. During the growing season one to three fungicide applications are required to protect the crop for optimal crop production. During the season insecticide applications are needed to control pests. Plemax and Warlock are two registered Adama products against the devastating Fall Armyworm.

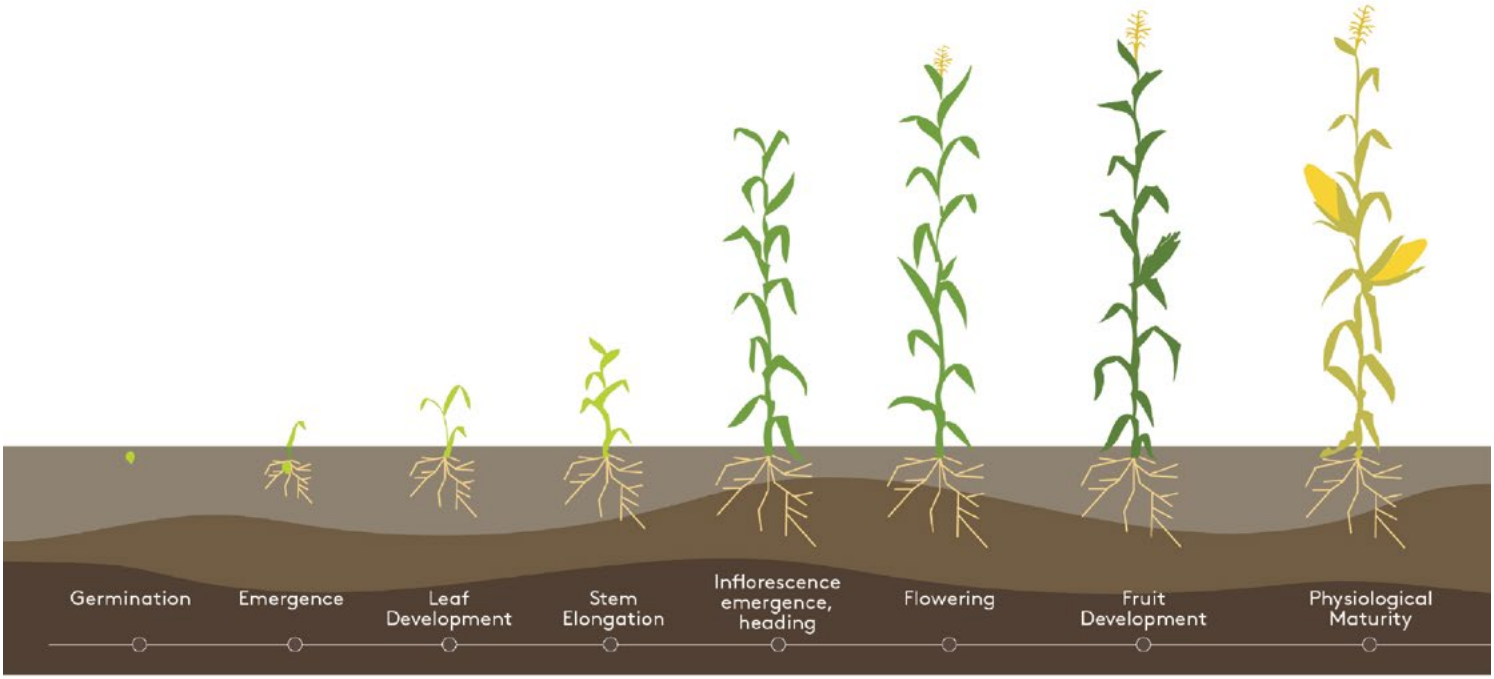
- The challenges of plant protection in Maize are extensive and varied.
- Adama South Africa provides effective means for complete crop protection in maize.
- With this brochure we strive to assist you in optimal crop management and income protection to obtain the full potential of your crop.

Our specialists are happy to support you personally. At the back of this brochure you will find contact information of your regional Adama support.

Pests threatening the crop yield

BBCH - Identification Keys





See solutions on pages 7, 9 & 17.

Weeds – Considerations

The selection of the optimal herbicide will depend on certain factors. To determine the most suitable herbicide the following considerations need to be made:

1. Which crop was planted the previous season and what herbicides was used?
2. Which weeds were present the previous season and how high was the pressure?
3. Does the workload and weather conditions allow you to use a pre-emergence spray, or should you rely on a post emergence application?
4. Is the maize plant you are growing sensitive to any specific herbicides?
5. What is the growth stage of your maize crop when applying the herbicide?
6. If a post emergence application is used, which weeds does it need to control?
7. What is the growth stage of the weeds?
8. Are there any crop stress in the field such as cold/heat/flooding/drought etc.?
9. Are there crops in adjacent fields?
10. What is the planned crop for following year?

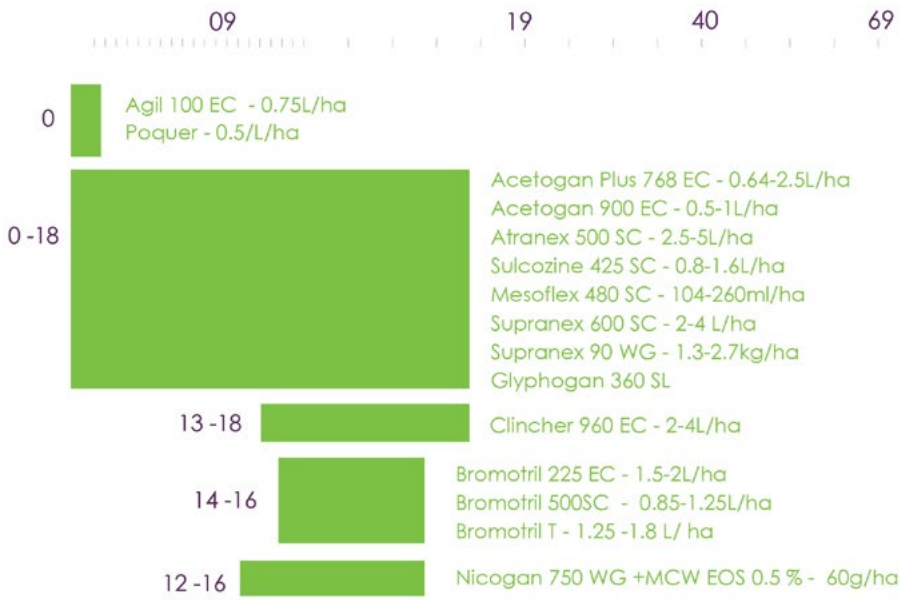
General information about the conditions during the day of application and forecasts afterwards:

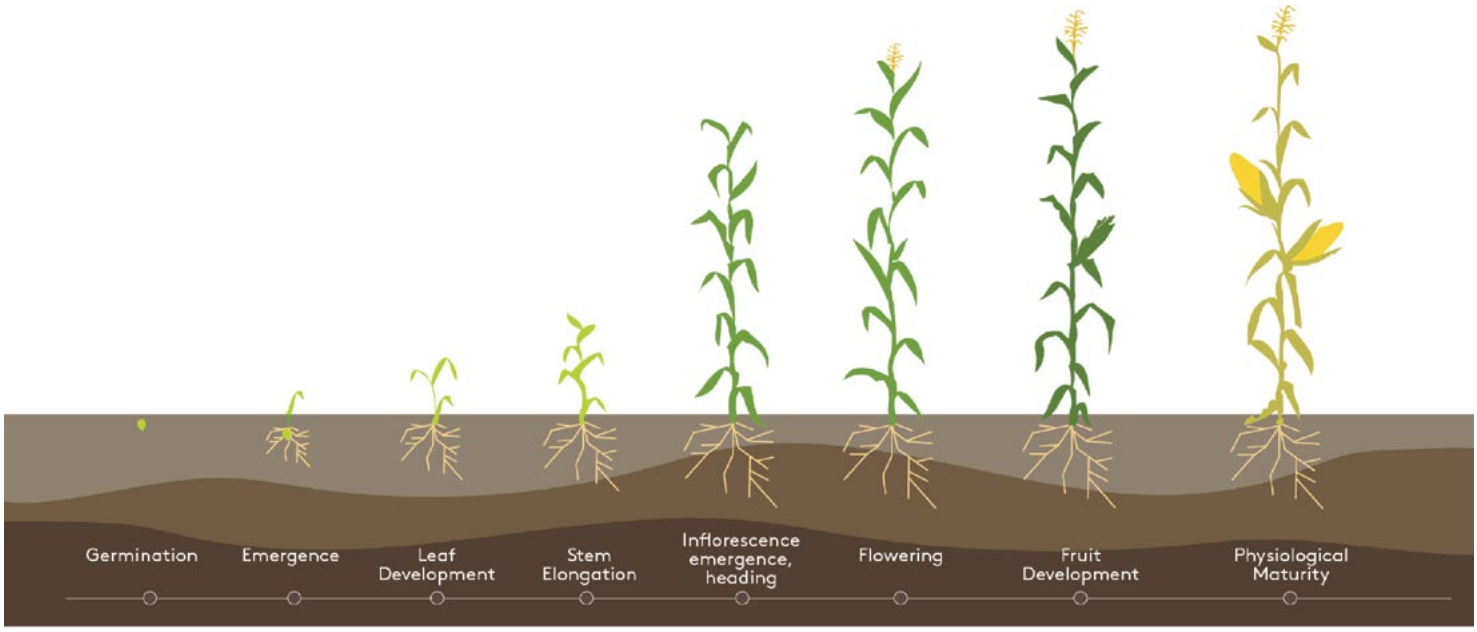
- Wind speed
- Temperature
- Expected rain

If the product you are using is volatile, it could be amplified at high temperatures which could end up drifting to the next field causing damage.

Weeds threatening the crop yield

Adama Solutions - Simply grow together





Disease – Considerations

The selection of the optimal fungicide will depend on certain factors. To determine the most suitable fungicide the following considerations need to be made:

1. Was a fungicide seed treatment used?
2. What disease was prominent the previous year?
3. Is a rotation system used?
4. What are the sensitivities of the maize variety you are growing?
5. What is the growth stage of your maize crop?
6. What disease will be promoted by forecasted climatic conditions?
7. Are there any crop stress in the field such as cold/heat/flooding/drought etc.?
8. Length of time to next fungicide application?
9. Do you need curative or protective treatment
10. Would you like the “greening” effect of certain fungicides?
11. Ground or aerial application?
12. Days to harvest?

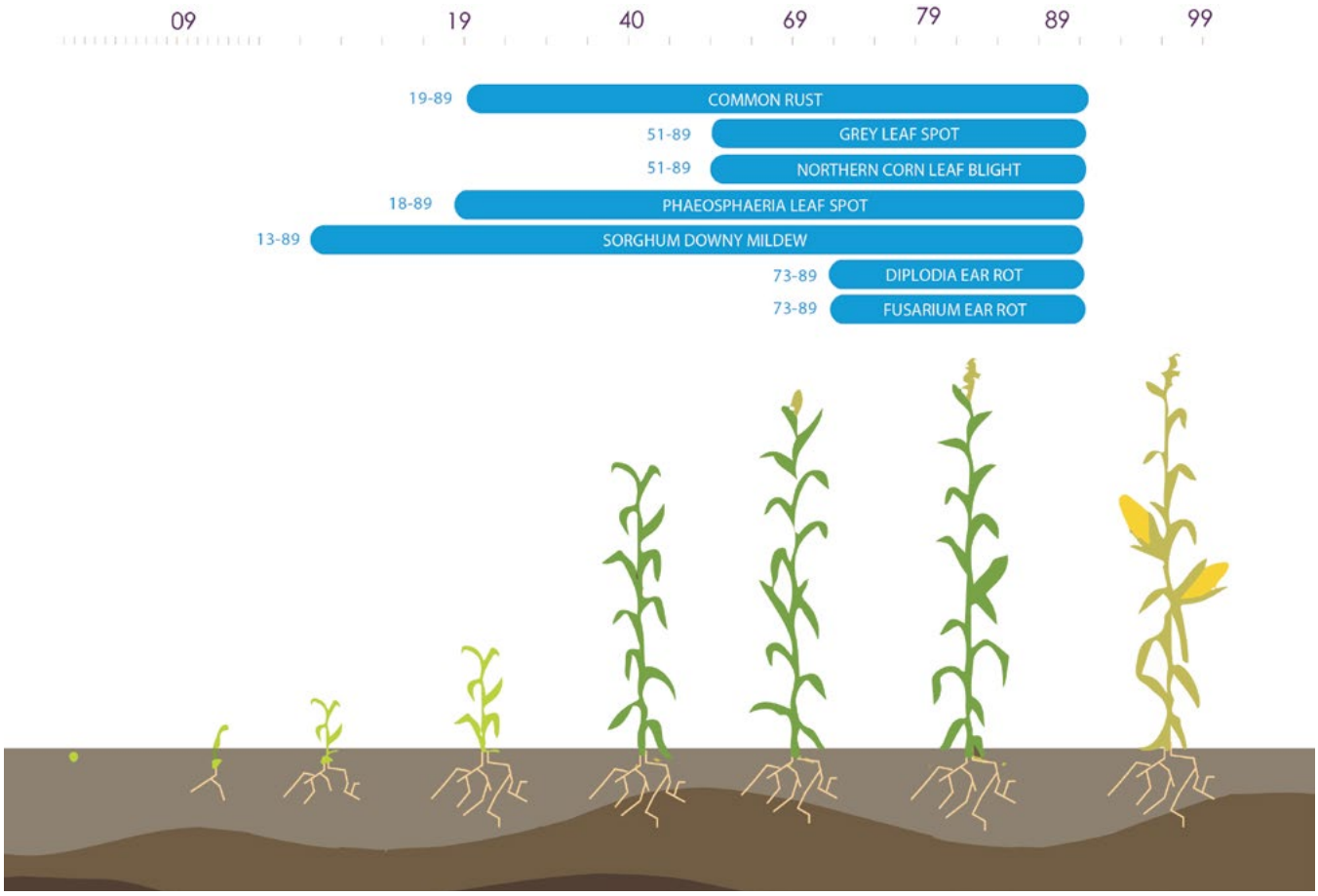
General information about the conditions during the day of application:

- Wind speed
- Temperature
- Expected rain

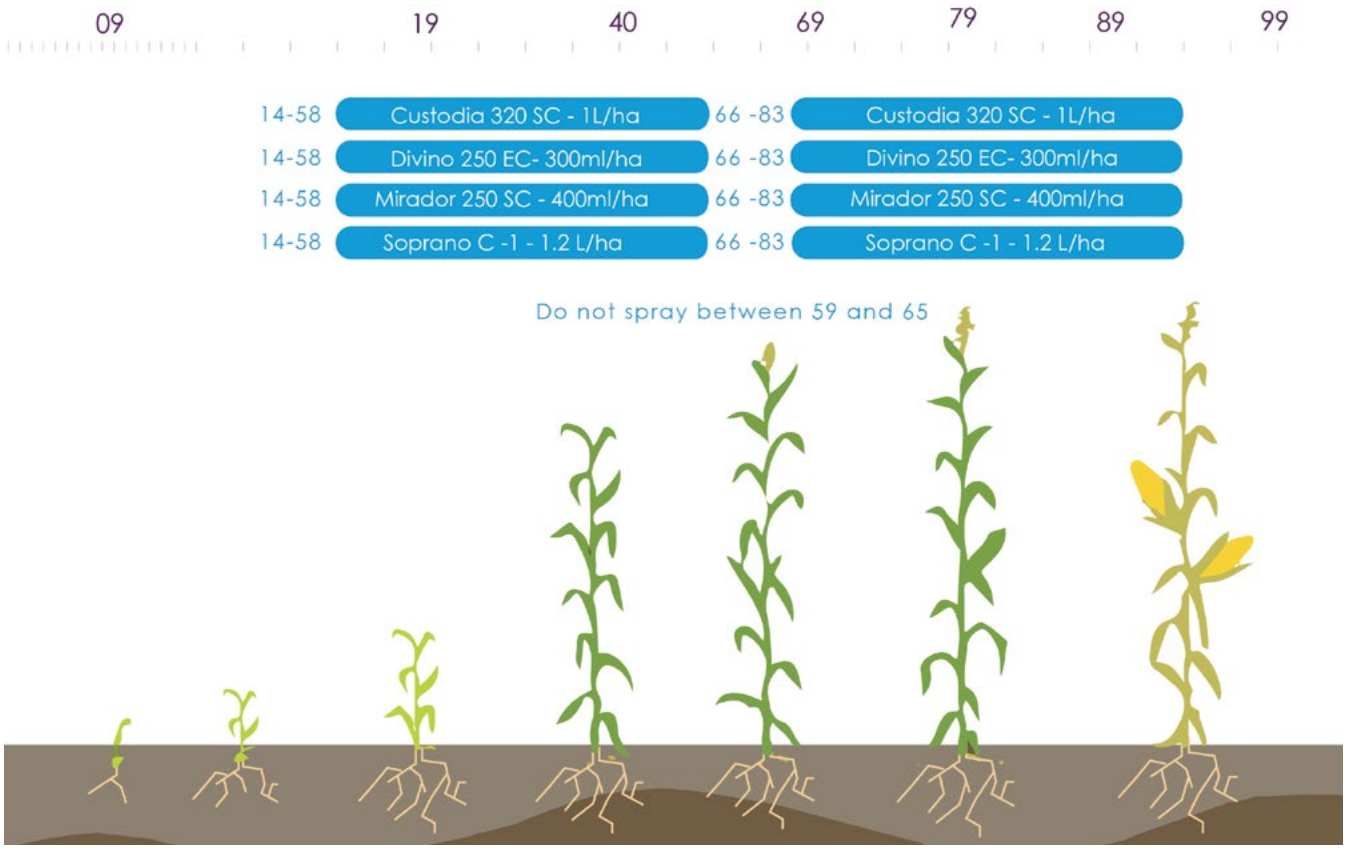
You can take pictures of the diseases found in your field and send it to our field specialists for identification.

(See team map on Page 54)

Disease threatening the crop yield



Adama Solutions - Simply grow together

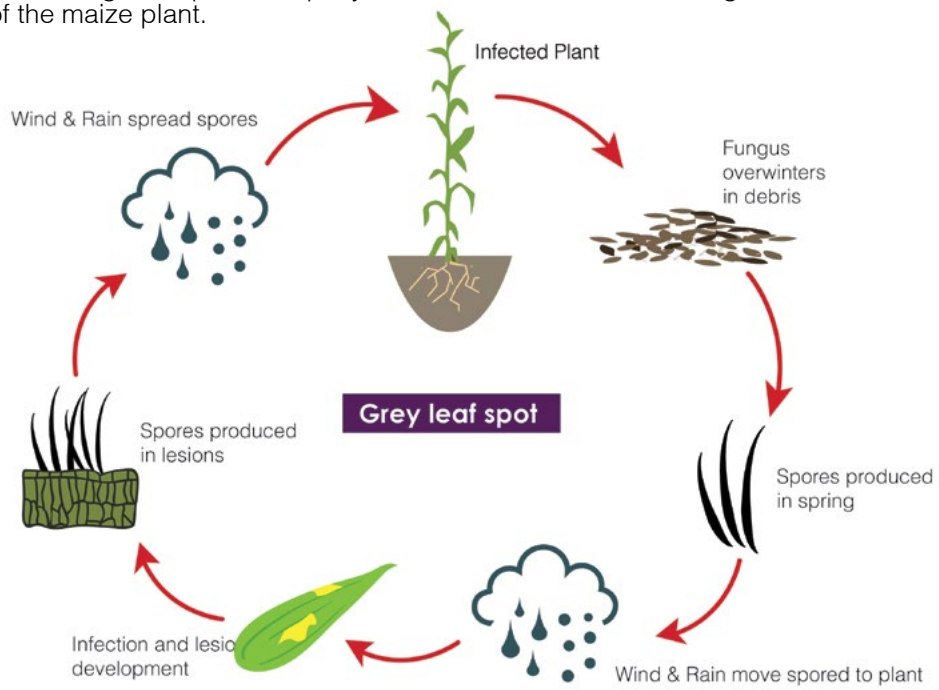


Disease - Biological Info

GREY LEAF SPOT

GENERAL INFORMATION

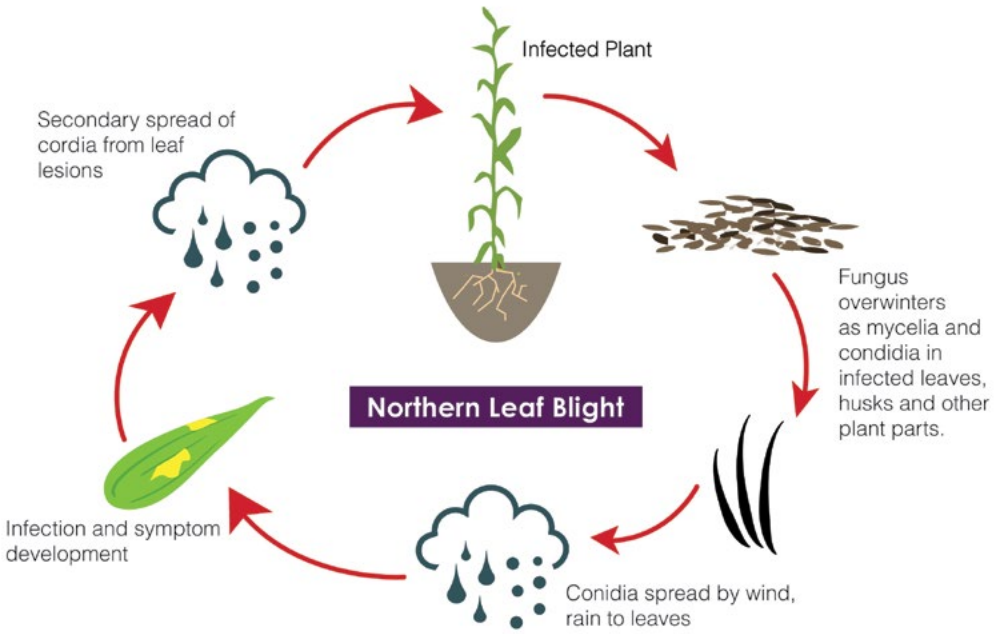
Grey leaf spot is caused by the ***Cercospora zeae-maydis*** pathogen and is one of the primary leaf diseases of maize in South Africa and the US. The pathogen builds up in maize residue over time and is favored by warm temperatures and high humidity. Fog each morning and extended periods of leaf wetness may initiate a severe infestation. Disease may be noticed on lower leaves before silking and spreads rapidly with favourable weather during late summer and early fall during the grainfill period of the maize plant.



NORTHERN CORN LEAF BLIGHT

GENERAL INFORMATION

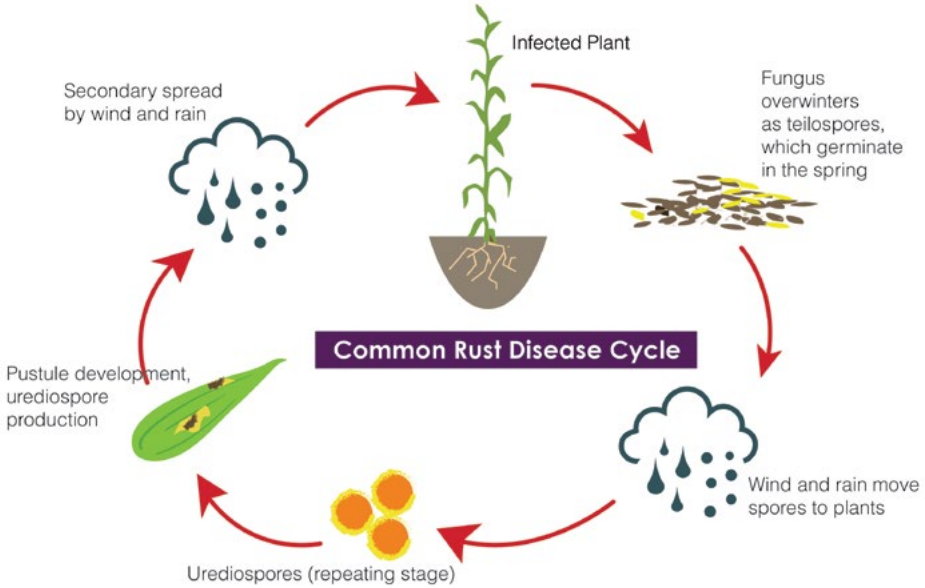
This discease is caused by ***Exserohilum turcicum,*** mostly found in humid areas wherever maize is produced. The pathogen survives in maize debris and builds up over time in high-residue and continuous maize cropping systems. The ideal climate is frequent dew, frequent showers, high humidity and moderate temperatures. Spores are spread by rain splash and air currents to the leaves of new plants in spring and early summer. Spores may be carried long distances by the wind. Infection occurs when free water is present on the leaf surface for 6 to 18 hours and temperatures are 18 to 26 degrees celcius. Infections generally begin on lower leaves and progress up the plant, but infections may begin in the upper plant canopy when spore loads are high. New lesions can produce spores in as little as 1 week, allowing Northern corn leaf blight to spread much faster than many other maize leaf diseases.



COMMON RUST

GENERAL INFORMATION

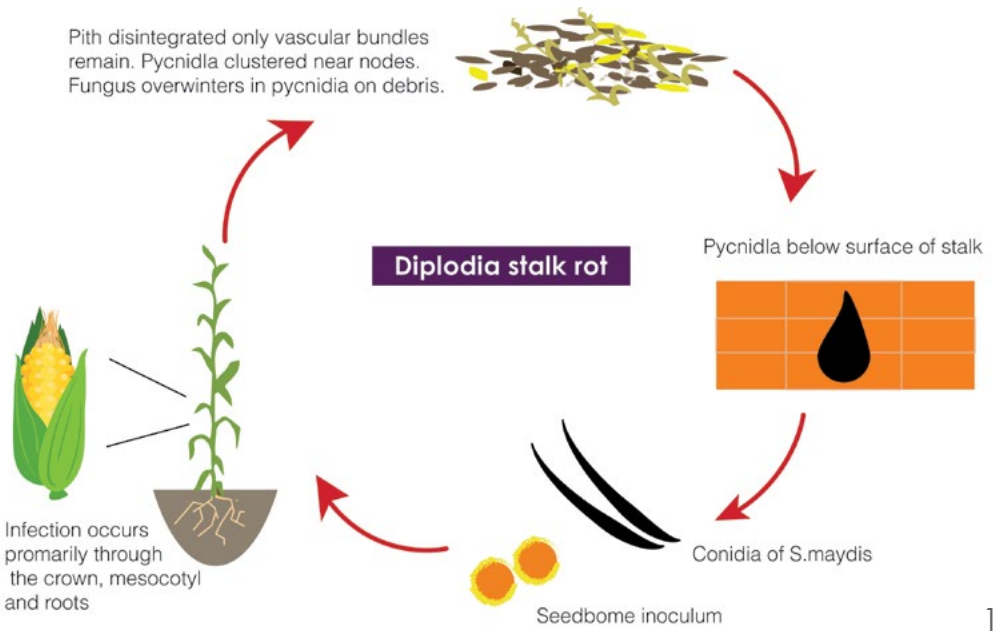
Common rust is caused by ***Puccinia sorghi.*** Lesions on leaves are small, circular to elongate, and often occur in clusters. The fungus erupts through the leaf surface (epidermis) as they mature and the lesions become more elongated. At this stage, a prominent yellow halo is usually evident. Brownish-red oblong pustules are the characteristic symptom on leaves; urediniospores that rub off on fingers are what impart the color to the lesion. Lesions of common rust are sparsely spread over the leaf and occur on both upper and lower leaf surfaces. Spores are wind-blown with new infections occurring every 7 to 14 days. As the season progresses, black teliospores are produced within the lesions. During this process, a single lesion may produce both brownish-red urediniospores and black teliospores. Finally, only black teliospores will be observed within the lesions



DIPLODIA STALK ROT

GENERAL INFORMATION

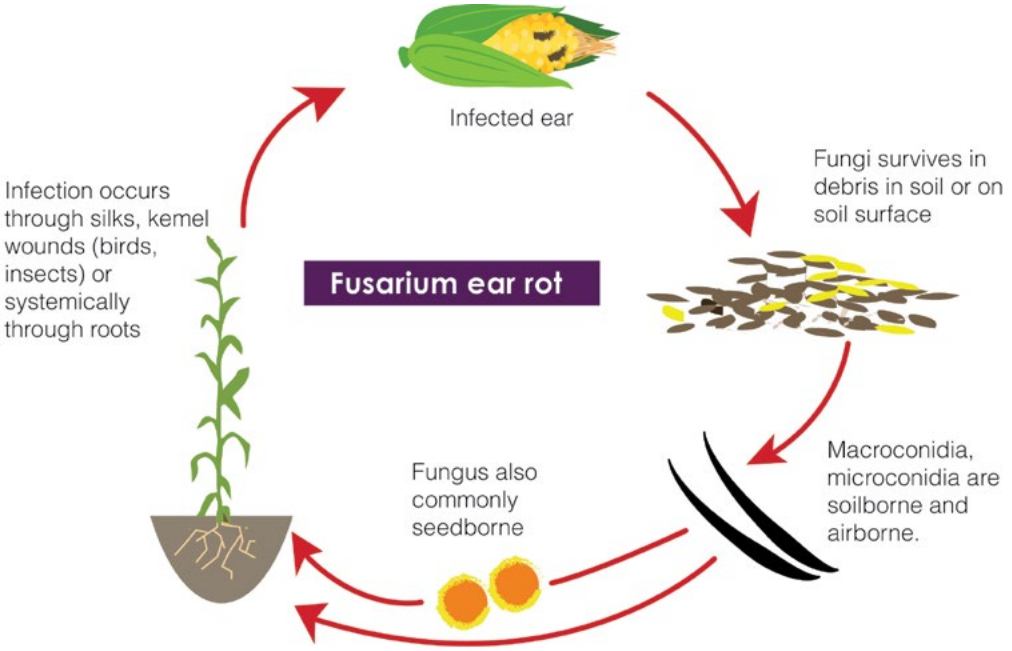
Diplodia stalk rot is caused by ***Stenocarpella*** spp. that also cause diplodia ear rot and macrospora leaf stripe. Diplodia stalk rot may first be evident when affected plants die suddenly during mid- to late-ear fill. When the plant is examined, dark brown lesions can be found extending in either direction from the node. Small black spots (pycnidia) may develop just beneath the stalk epidermis near the nodes. The black dots are not easily removed, which distinguishes diplodia from gibberella. Diplodia results in rotted stalks that are disintegrated and discolored (brown), allowing the stalk to be crushed or easily broken. Although the pith disintegrates, vascular bundles remain “intact”.



FUSARIUM EAR ROT

GENERAL INFORMATION

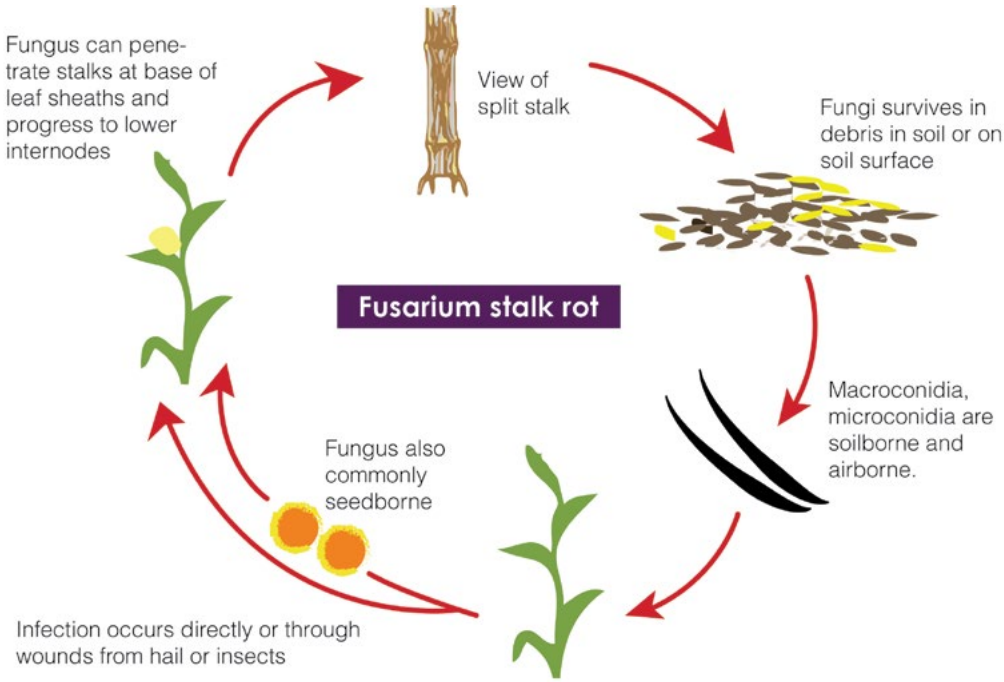
Fusarium ear rot is the most common fungal disease on maize ears. It is caused by ***Fusarium verticillioides*** (previously known as ***Fusarium moniliforme***) and several other ***Fusarium*** species. The fungi survives on residue of maize and other plants, especially grasses. Infection can occur under a wide range of environmental conditions but the disease is more severe when weather is warm and dry. The disease enters the ear primarily through wounds from hail or insect feeding. Insects damage the husks and kernels and may also be a vector for ***Fusarium*** spores. Airborne spores can germinate and grow down the silk channel to infect the kernels.



FUSARIUM STALK ROT

GENERAL INFORMATION

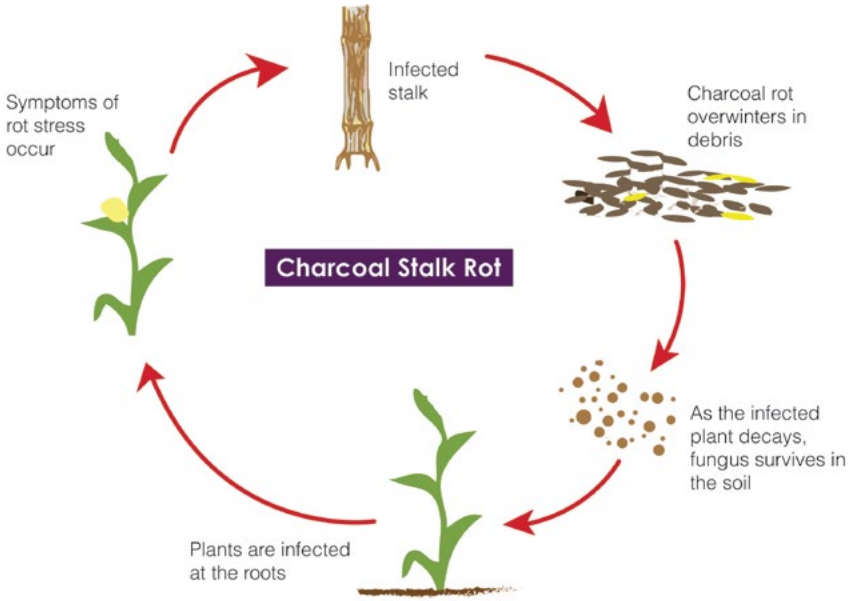
Fusarium stalk rot is caused by ***Fusarium verticiliodes*** syn and is common in drier, warmer climates. Infected plants typically wilt, leaves turn dull grayish-green and the lower stalk turns from dark green to straw colored. The internal pith of the lower stem disintegrates and turns soft. When the stalk is split open it exhibit a reddish discoloration. Mycelium in infected crop debris on the soil surface produces macroconidia and microconidia, which are transported by wind and rain splash to newly planted maize. ***F. verticilliodes*** is also seed borne, in which case the pathogen may be present during the entire life cycle of the plant.



CHARCOAL STALK ROT

GENERAL INFORMATION

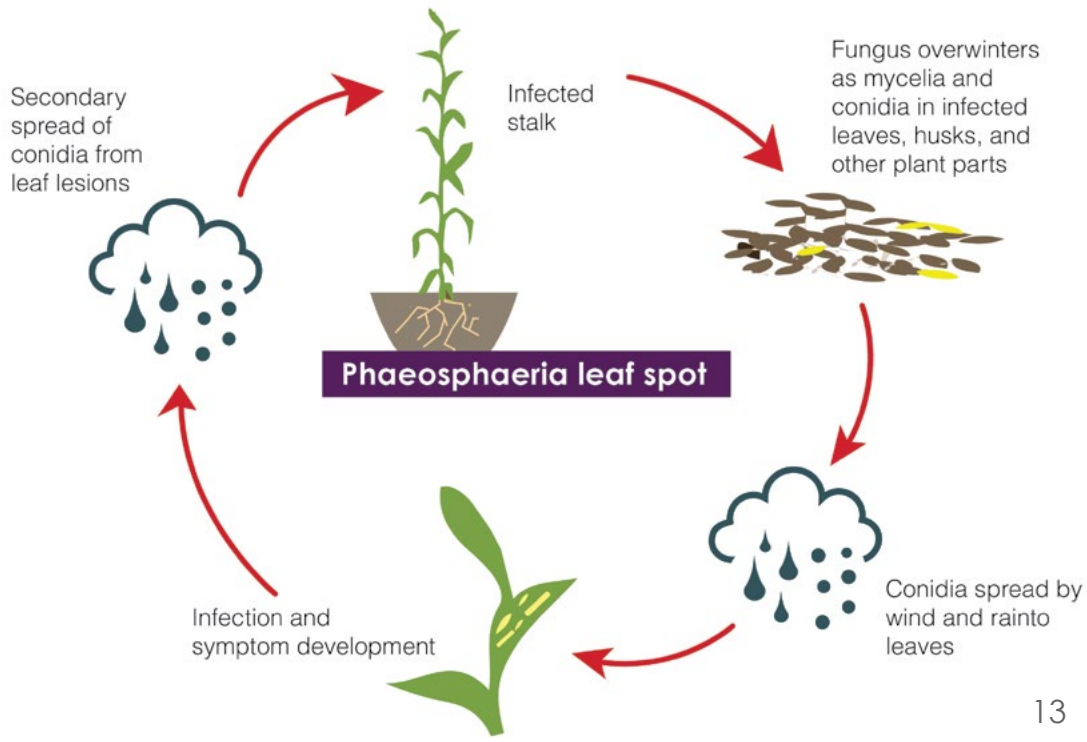
Charcoal stalk rot is a common disease of maize in hot, dry environments and is caused by the fungi *Macrophomina phaseolina*. Charcoal rot first becomes noticeable when maize is in the tassel stage or sometimes later. Upper leaves of the maize plant will dry out. Infected maize plants have shredded stalks and the pith will have completely rotted, leaving only stringy vascular strands intact. The sclerotia of the fungus are small, black and spherical, and are found on and inside the vascular strands, numerous enough to give the internal stalk tissue a grey coloring. Translocation of water and nutrients are disrupted due to hyphae of the fungi growing intercellularly through the xylem and into the surrounding vascular tissue. The fungus can grow into the lower internode of the stalk as the plant matures, causing plants to ripen prematurely and weaken their stalks, causing breakage. Lodging is often caused by decomposition of stalk tissue due to infection and can result in yield loss.



PHAEOSPHAERIA LEAF SPOT

GENERAL INFORMATION

Phaeospharia leaf spot is a foliar disease caused by the fungi *Phaeosphaeria maydis*. Yield losses of up to 60% can occur. The immature lesion appear as small, pale green or chlorotic spots scattered over the leaf surface. *Phaeospharia maydis* overwinter on crop debris. During subsequent growing seasons, in response to favorable climatic conditions of high rainfall and moderate temperatures, the spores are splashed by rain and wind disseminated to freshly-planted maize where they germinate on foliar tissue. Spores produced in the disease lesions initiate secondary cycles of infection during the season.

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Insects – Considerations

The insecticide to be used will depend on the insect pest that is present. To determine the most suitable insecticide the following considerations need to be made:

1. Was an insecticide seed treatment used?
2. Which insect needs to be controlled and what is the growth stage?
3. Are weather conditions favorable for this pest to develop?
4. What part of the plant is being attacked?
5. Is it possible to react when the insect is noticed or do the treatment need to be protective?
6. What is the growth stage of your maize crop?
7. Are there any crop stress in the field such as cold/heat/flooding/drought etc.?
8. How many days to harvest?

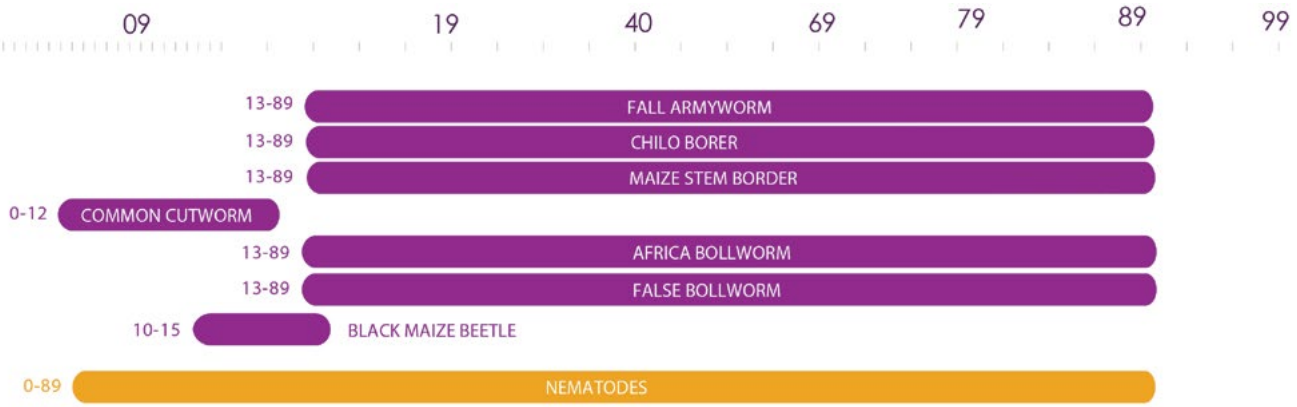
General information about the conditions during the day of application:

- Wind speed
- Temperature
- Expected rain

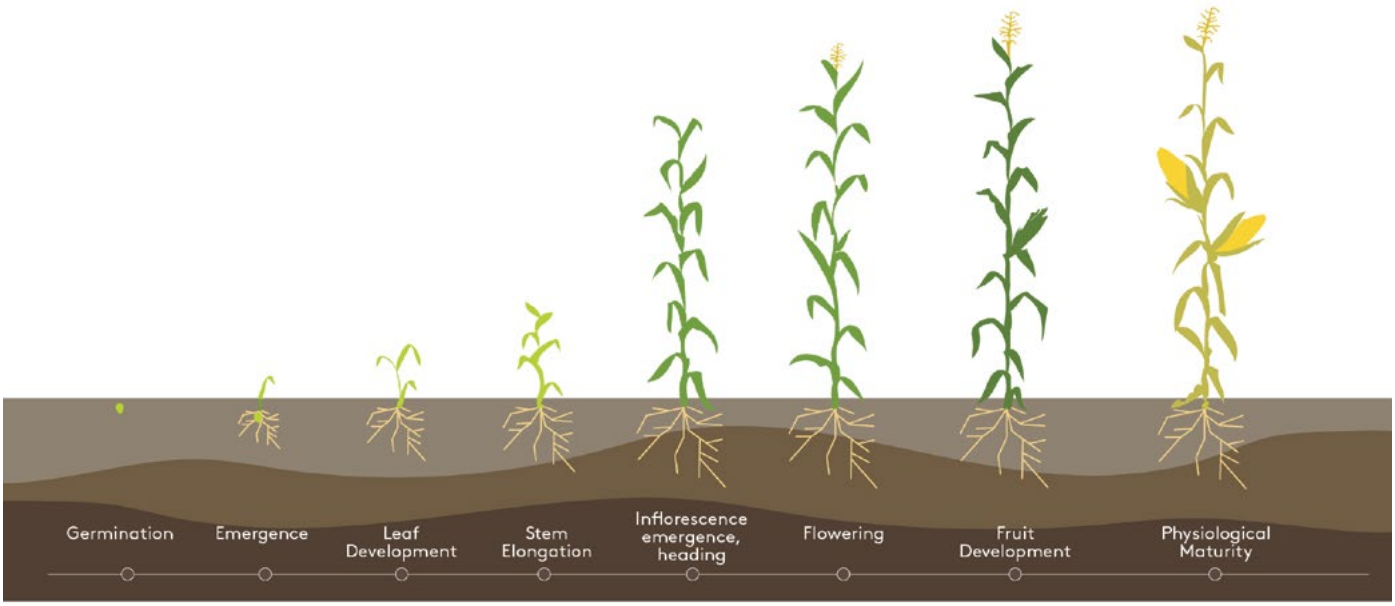
You can take pictures of the insects found in your field and send it to our field specialists for identification.

(See team map on Page 54)

Insects threatening the crop yield



Adama Solutions - Simply grow together



Insects - Biological Info

FALL ARMYWORM

Spodoptera frugiperda

GENERAL INFORMATION

Fall armyworm moths are active during evening and hide during the day. Larvae are light green to dark brown with longitudinal stripes and feed during day and night. In the sixth instar, larvae are 3-4 cm long. Larvae have eight prolegs and a pair of prolegs on the last adbominal segment. Upon hatching they are green with black lines and spots, and as they grow they either remain green or become buff-brown and have black dorsal and spiracular lines. It is a major pest in crops and can reach up to 100% infestation in some situations.

CHILO BORER

Chilo partellus

GENERAL INFORMATION

Chilo borer (***Chilo patellus***) are one of the most common stem borers known to damage maize crops. Young catepillars feed in the whorls but older caterpillars bore into stems and ears. The moth is elongated and light brown in colour. Eggs are laid in batches on both the upper and lower surface of the leaves. The pupae are formed inside the tunnels, within the ears or stems. Larvae can be creamy-white to yellowish-brown in colour. These larvae also have four purple-brown longitudinal stripes and are usually found with characteristically dark-brown spots along the back, therefore giving off a spotted appearance.

COMMON CUTWORM

Agrotis segetum

GENERAL INFORMATION

Cutworms are considered as the second-worst pest for maize. They generally attack plants during the early growing stage. In addition to eating the stem, buds, flowers and pods, cutworms may attack the seeds, ears and leaves. The cutworm itself is the caterpillar stage of the insect. Reaching a length of 40mm to 50mm, it varies in colour according to age. Young caterpillars are green, brown, grey, or yellow with longitudinal stripes; older caterpillars are much darker.

AFRICA BOLLWORM

Helicoverpa armigera

GENERAL INFORMATION

The Colour of the African bollworm (***Helicoverpa armigera***) varies considerably. The spots on young individuals are usually more prominent on the middle part of the body. Some individuals may have lighter bands on the sides, similar to the fall armyworm. Of all the caterpillars, it is only the bollworm that displays the characteristics of “Sphinx Stance” when disturbed. The forewings of the moths are brown, green, yellow, brown or grey brown in color with darker brown markings. The hind wings are pale with dark veins.

BLACK MAIZE BEETLE

Heteronychus arator

GENERAL INFORMATION

The Larvae are typical white grubs. They have white with brown heads and are usually curled into a C shape. The beetles are shiny black and 12-15mm long. The larvae do not cause damage and feed on organic material in the soil. Beetles damage subterranean stems of seedlings by eating freyed holes in it. During autumn, stems are freyed above the soil surface and the brace roots are destroyed. Typical symptoms is the dying-off of the crown of the plant.

MAIZE STEM BORER

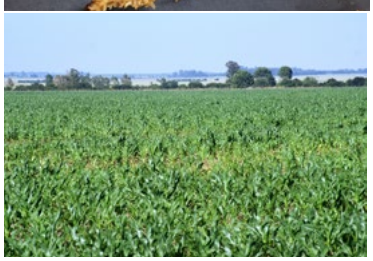
Busseola fusca

GENERAL INFORMATION

Adult African maize stalkborer moths lay eggs in a row between the stem and leafsheath. Each female lays on average about 200 eggs over its short lifetime which lasts several days – its exact duration depends on temperature and other factors. The eggs hatch in 3-5 days and larvae move into the leaf whorls to feed. When older (third instar), they tunnel into the stems where they feed for 3-5 weeks before pupating within the tunnels that they have dug in the stems. The adult moth will emerge after a pupal period of 7-14 days from the hole that they produced before pupation. Adults mate soon after emergence. Under favourable conditions the life cycle can be completed in 7-8 weeks but during dry and/or cold weather the larvae can enter a period of suspended development (diapause) of 6 months or more in stems and other plant residues.

NEMATODES

GENERAL INFORMATION



The impact of nematodes on maize is often underestimated. The two most important plant parasitic nematodes in maize are the Root-knot nematode (***Meloidogyne*** spp.) and the Lesion nematode (***Pratylenchus*** spp.) Under optimal conditions a root-knot nematode can hatch from its egg and be ready to lay eggs in about 20-25 days. A single female can produce over 100 eggs during her lifetime. Above ground parts of plants infested with rootknot nematodes are stunted, yellow and patchy in growth. Lesion nematodes occur sporadic but when they do occur it is usually in high numbers. They also thrive in a wide range of soil types.

Herbicides

INDEX

Acetogan Plus 768 EC

An emulsifiable concentrate herbicide with added safener applied pre-emergance on annual grasses nd certain broadleaf weeds as listed in groundnuts, maize, potatoes, sugarcane and sweetcorn.

Product description:

Acetochlor 768g/L + Dichlormid 138g/L

Product features, benefits and info:

Has dichlormid as a safener. Good synergistic effect with Sulcozine with a suppresive effect on yellow nutsedge.

Reg. no. L8557,
Act 36 of 1947
(Caution)

Acetogan 900 EC

An emulsifiable concentrate herbicide applied pre-emergence on weeds as listed in cotton, Eucalyptus plantations, groundnuts, maize, potatoes and sugar cane.

Product description:

Acetochlor 900g/L

Product features, benefits and info:

Good synergistic effect with Sulcozine with a suppresive effect on yellow nutsedge.

Reg. no. L8269,
Act 36 of 1947
(Caution)

Atranex 500 SC

A suspension concentrate herbicide for the control of annual broadleaf weeds and grasses, as listed in maize, grainsorghum, sugarcane and pineapples.

Product description:

Atrazine 485g/L + Other active triazines 15g/L

Product features, benefits and info:

Good control of deep germinating weeds. Is compatable with a wide range of products.

Reg. no. L5352,
Act 36 of 1947
(Harmful)

Bromotril P 500 SC

A selective suspension cocentrate contact herbicide for the post-emergence control of certain broadleaf weeds in wheat, barley, oats, maize, grain sorghum and established lucerne.

Product description:

Bromoxynil 500g/L

Product features, benefits and info:

Virtually no soil residual activity and no detectable residues in cereals at harvest time. Controls a wide range of weeds. Can be used as a burn down effect. Very good control of dubbeltjie (Tribulus terestis).

Reg. no. L7019,
Act 36 of 1947
(Harmful)

Bromotril 225 EC

A selective emulsifiable concentrate herbicide for the post-emergent control of certain broadleaf weeds in the crops as indicated.

Product description:

Bromoxynil 225g/L

Product features, benefits and info:

Virtually no soil residual activity and no detectable residues in cereals at harvest time. Controls a wide range of weeds. Can be used as a burn down effect. Very good control of dubbeltjie (Tribulus terestis).

Reg. no. L4657,
Act 36 of 1947
(Harmful)

Bromotril T

A selective suspension concentrate contact herbicide for the post-emergence contol of certain broadleaf weeds in maize, sweetcorn, grain sorghum, sugarcane and fodder sorghum.

Product description:

Bromoxynil 150g/L + terbuthylazine 333g/L

Product features, benefits and info:

Virtually no soil residual activity from bromoxynil and no detectable residues in cereals at harvest time. Controls a wide range of weeds. Can be used as a burn down effect. Very good control of dubbeltjie (*Tribulus terestis*). Terbuthylazine gives longer residual effect.

Reg. no. L6653,
Act 36 of 1947
(Harmful)

Clincher 960 EC

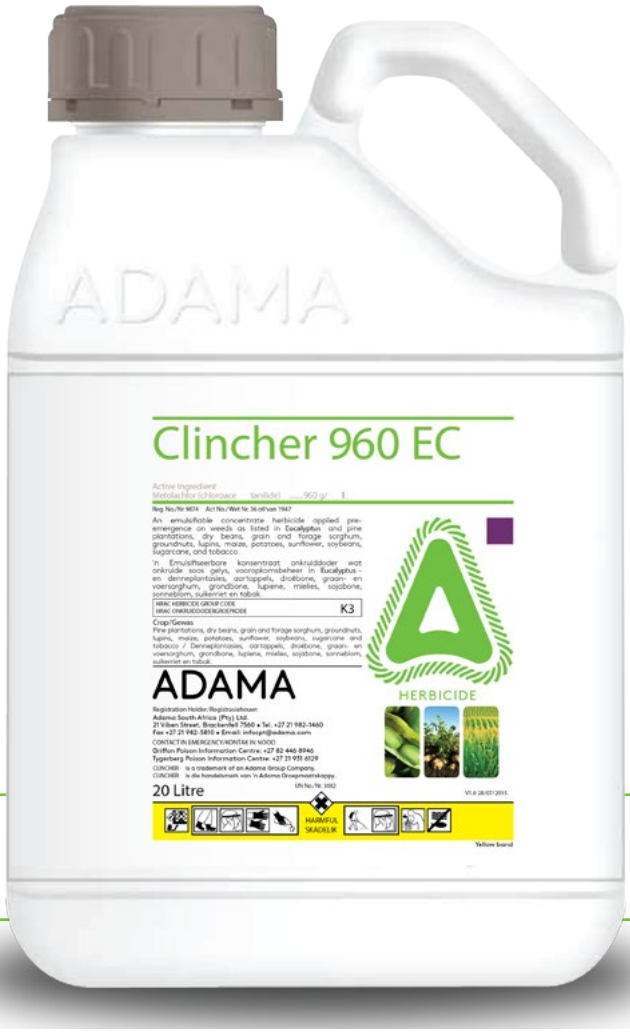
An emulsifiable concentrate herbicide applied pre-emergence on weeds as listed in Eucalyptus and pine plantations, dry beans, grain and forage sorghum, groundnuts, lupins, maize, potatoes, sunflower, soybeans, sugarcane and tobacco.

Product description:

Metolachlor 960g/L

Product features, benefits and info:

Compatible with a wide range of products. Can be applied post-emergence alone or in a tank mix. Provides pre-emergence control of annual grasses and small-seeded broadleaf weeds. Good plant safety.



Reg. no. L9874,
Act 36 of 1947
(Harmful)

Glyphogan 360 SL

Soluble concentrate, non-selective, systemic post-emergence herbicide with slight or no soil activity for the control of perennial and annual weeds in agriculture, non-crop and industrial areas. GLYPHOGAN 360 SL can also be used as a growth regulator to reduce growth of weeds.

Product description:

Glyphosate 360g/l + glyphosate isopropylamine salt 480 g/L

Product features, benefits and info:

Allows for low to no till farming - better for soil management. Single solution for crops with RR gene.

Reg. no. L5393,
Act 36 of 1947
(Acute hazard unlikely)

Mesoflex 480 SC

A suspension concentrate herbicide for the pre- and post-emergence control of broadleaf weeds and grasses as well as suppression of some weeds, in maize.

Product description:

Mesotrione 480 g/L

Product features, benefits and info:

Dosage rate is not affected by soil clay content. Compatable with a wide range of products. Can be applied through a centre pivot before emergance. Broad spectrum weed range.

Reg. no. L9541,
Act 36 of 1947
(Caution)

Nicogan 750 WG

A wettable granule selective post-emergence herbicide for the control of certain grasses and some broadleaf weeds in maize.

Product description:

Nicosulfuron 750g/L

Product features, benefits and info:

Control can be improved by adding 0.5% of MCW EOS oil. Great control of Guinea fowl grass. Use fall arms when maize is at 7-10 leaf stage.

Reg. no. L8701,
Act 36 of 1947
(Caution)

Poquer 120 EC

An emulsifiable concentrate herbicide for the post-emergence control of annual grasses in crops, seedbeds, afforestation and industrial areas, as indicated.

Product description:

Clethodim

Product features, benefits and info:

Pre-plant control of volunteer maize with glyphosate resistant gene.
Compatable with glyphosate. Moves systemic through the floeem.

Reg. no. L9008
Act 36 of 1947
(Caution)

Sulcozine 425 SC

Suspension concentrate herbicide for the control of broadleaf weeds and certain grasses pre-and pos-emergence as indicated below in maize, sweetcorn and sugarcane.

Product description:

Sulcotione 125g/L + Atrazine 300g/L

Product features, benefits and info:

Short withholding period. Can be applied with glifosate. Application after emergance can be improved by adding 0.5% MCW EOS oil. Broad spectrum of weed control with a suppresive effect on yellow nutsedge.

Reg. no. L8448,
Act 36 of 1947
(Harmful)

Supranex 600 SC

A water dispersable granule herbicide for the control of annual broadleaf weeds as listed as well as goose grass in maize and grain sorghum.

Product description:

Terbuthylazine 300g/L + Atrazine 300g/L

Product features, benefits and info:

Compatable with a wide range products. This combination controls a wide range of weeds. The two actives have different leaching characteristics giving better control.

Reg. no. L5351,
Act 36 of 1947
(Caution)

Supranex 90 WG

A water dispersable granule herbicide for the control of annual broadleaf weeds as well as goosegrass in maize and grainsorghum.

Product description:

Terbuthylazine 450g/kg +Atrazine 450g/kg

Product features, benefits and info:

Compatable with a wide range of products. This combination controls a wide range of weeds. The two actives have different leaching characteristics giving better control.

Reg. no. L8172,
Act 36 of 1947
(Caution)

Fungicides

INDEX

Custodia 320 SC

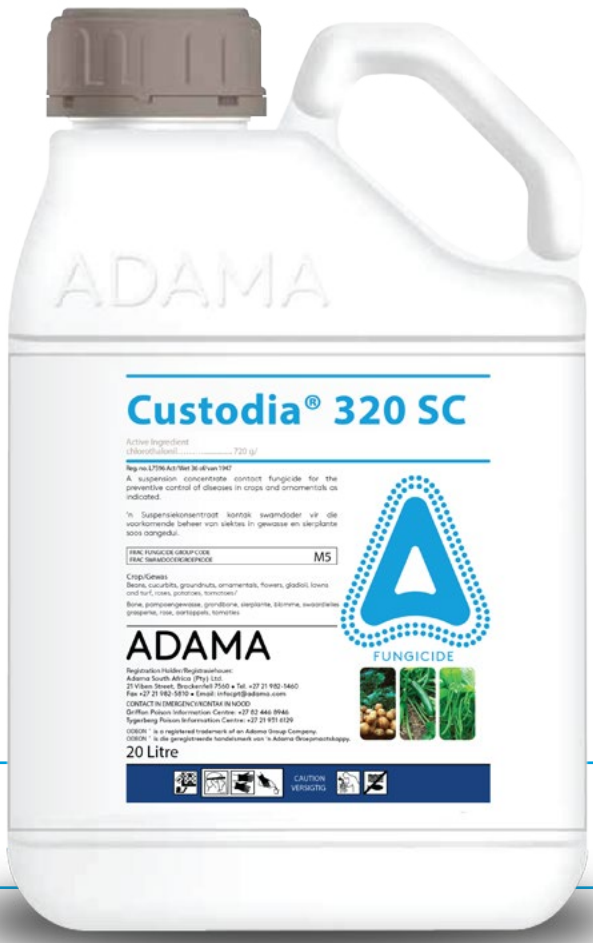
A suspension concentrate fungicide with systemic, translaminar and contact action for the control of diseases (as indicated) in grain sorghum, maize, sweetcorn, soy beans, wheat , barley and black wattle.

Product description:

Azoksystrobin 120g/L + Terbuconazole 200g/L

Product features, benefits and info:

Dual mode of action. 28 days residual effect. Wide range of application timing. Ground and aerial application. Gives greening effect.



Reg. no. L9342,
Act 36 of 1947
(Caution)

Divino 250 EC

An emulsifiable concentrate systemic fungicide for the control of diseases in various crops as listed.

Product description:

Difenoconazole 250 g/L EC

Product features, benefits and info:

For a curative application with sistemic action.

Reg. no. L9576,
Act 36 of 1947
(Caution)

Mirador 250 SC

A suspension concentrate, systemic, translaminar contact fungicide for the control of diseases in crops as indicated.

Product description:

Azoxystrobin 250g/L

Product features, benefits and info:

Short withholding period. Good greening effect and quick systemic movement in plant.

Reg. no. L8894,
Act 36 of 1947
(Caution)

Soprano C

A suspension concentrate systemic fungicide for the control of diseases as listed on barley, ground nuts, maize and wheat.

Product description:

Epoxiconazole 125g/L + Carbendazim 125g/L

Product features, benefits and info:

Is compatable with Bromotril P 500 SC and Makhro MCPA.

Reg. no. L8079,
Act 36 of 1947
(Caution)

Insecticides

INDEX

Carbodan 10 GR

A systemic granule insecticide and nematicide for the control of pests in crops as indicated.

Product description:

Carbofuran 100 g/kg

Product features, benefits and info:

Apply only at planting time.
Controls a wide range of insects and also nematodes.

Reg. no. L7577,
Act 36 of 1947
(Harmful)

Lamdex 5 EC

An emulsifiable concentrate contact and stomach insecticide for the control of various insects in crops as indicated.

Product description:

Lambda-cyhalothrin 50g/L EC

Product features, benefits and info:

Only two applications per growing season to prevent resistance. Can also be applied for cutworms pre-emergence or early post-emergence.
Aerial application registered.

Reg. no. L7578,
Act 36 of 1947
(Harmful)

Methomex 900 SP

A water soluble liquid insecticide for the control of pests in crops as indicated.

Product description:

Methomyl 900g/kg SP

Product features, benefits and info:

Methomex 900 SP has a quick knock-down effect and a short withholding period. Methomex 900 SP also has an emergency registration against Fall army worm.

Reg. no. L9541,
Act 36 of 1947
(Toxic)

Plemax 320 SC

A suspension concentrate insecticide with chitin-inhibiting, contact and stomach action for the control of pests listed on apples, pears, maize and sweetcorn.

Product description:

Indoxacarb 240g/L + Novaluron 80g/L

Product features, benefits and info:

Good residual effect.
Emergency registration on Fall armyworm @ 400 – 700 ml/ha. Soft on natural predators of red spider mite.

Reg. no. L10246,
Act 36 of 1947
(Harmful)

Pyrinex 250 CS

A capsule suspension stomach and contact insecticide for the control of pests as indicated.

Product description:

Chlorpyrifos 250g/L

Product features, benefits and info:

Micro encapsulated for a longer period of control. First application 30-35 days after plant and a second application 14 days later.

Reg. no. L6515,
Act 36 of 1947
(Caution)

Pyrinex 480 EC

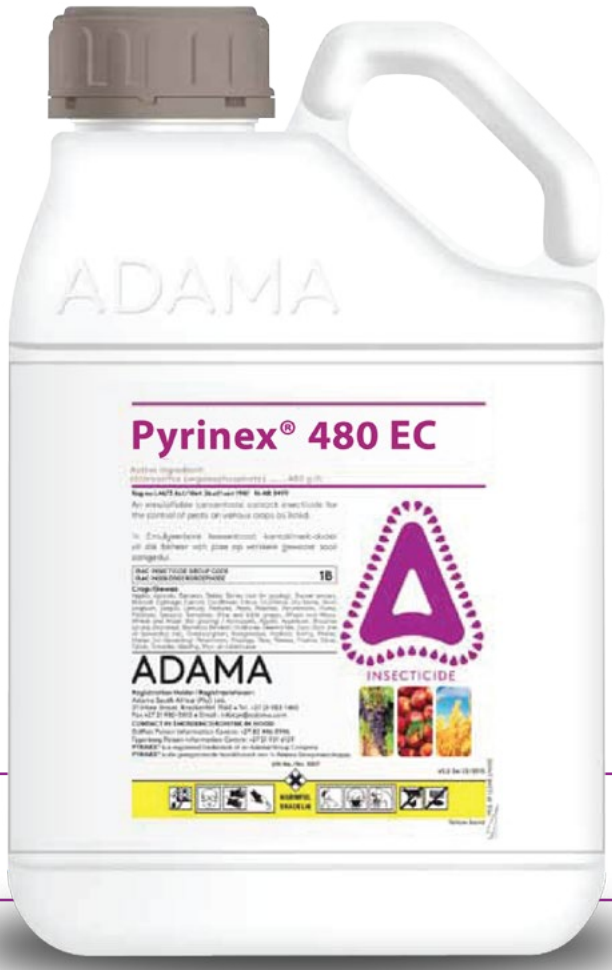
An emulsifiable concentrate contact insecticide for the control of pests on the various crops as listed.

Product description:

Chlorpyrifos 480g/L EC

Product features, benefits and info:

Compatable with a wide range of products. Good knock-down effect on insects. First application 30-35 days after plant and a second application 14 days later.



Reg. no. L4673,
Act 36 of 1947
(Harmful)

Rimon Fast 100 SC

A suspension concentrate contact, stomach, and chitin inhibitor insecticide for the early corrective treatment of maize stalk borer in maize and sweetcorn as well as african bollworm, semi-looper and leaf eater larvae in soy beans.

Product description:

Bifenthrin 50g/L

Product features, benefits and info:

Excellent management of the J1 -J3 larvae. Dual mode of action, contact and stomach. Soft on natural predators of red spider mite. Good residual effect.

Reg. no. L9422,
Act 36 of 1947
(Harmful)

Seizer 100 EC

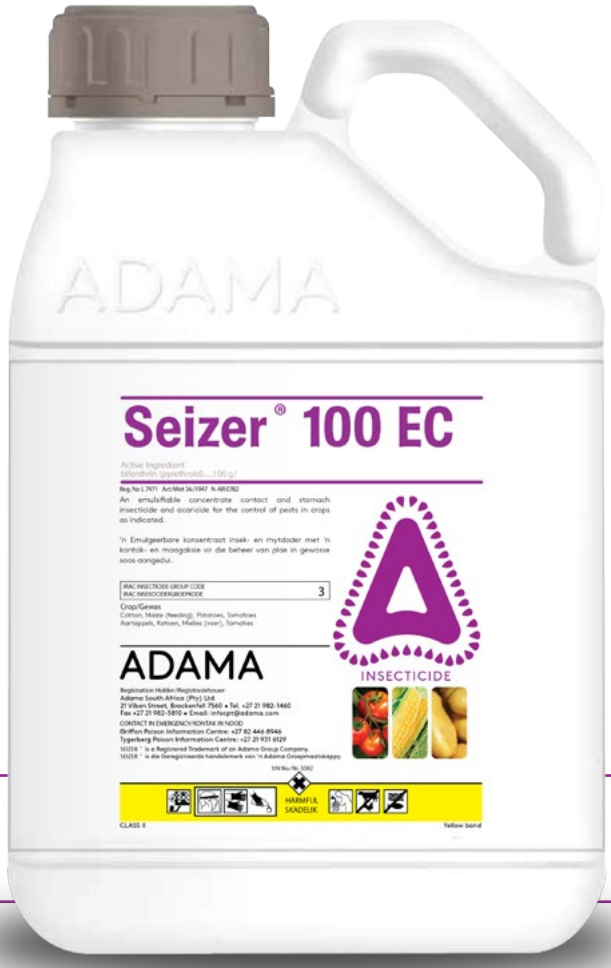
An emulsifiable contact and stomach insecticide and acaricide for the control of pests in crops as indicated.

Product description:

Bifenthrin 100g/L

Product features, benefits and info:

Registered against red spider mite. Can be applied through a centre pivot for maize only.



Reg. no. L7471,
Act 36 of 1947
(Harmful)

Servus

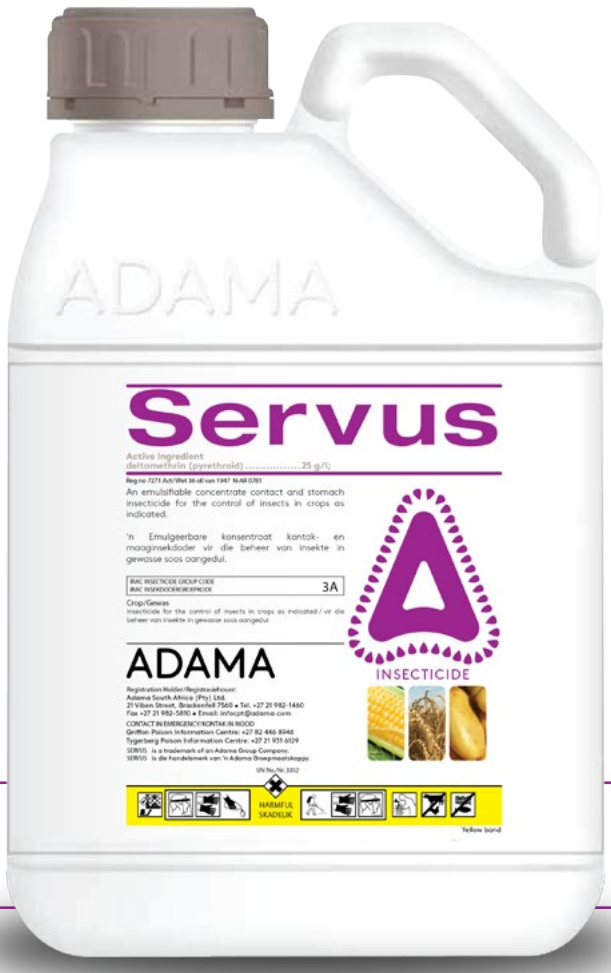
An emulsifiable concentrate contact and stomach insecticide for the control of insects in crops as indicated.

Product description:

Deltamethrin 25g/L

Product features, benefits and info:

Has a short withholding period. Active over a wide range of climatic conditions. Controls a wide range of insects.



Reg. no. L7271,
Act 36 of 1947
(Harmful)

Warlock 19.2 EC

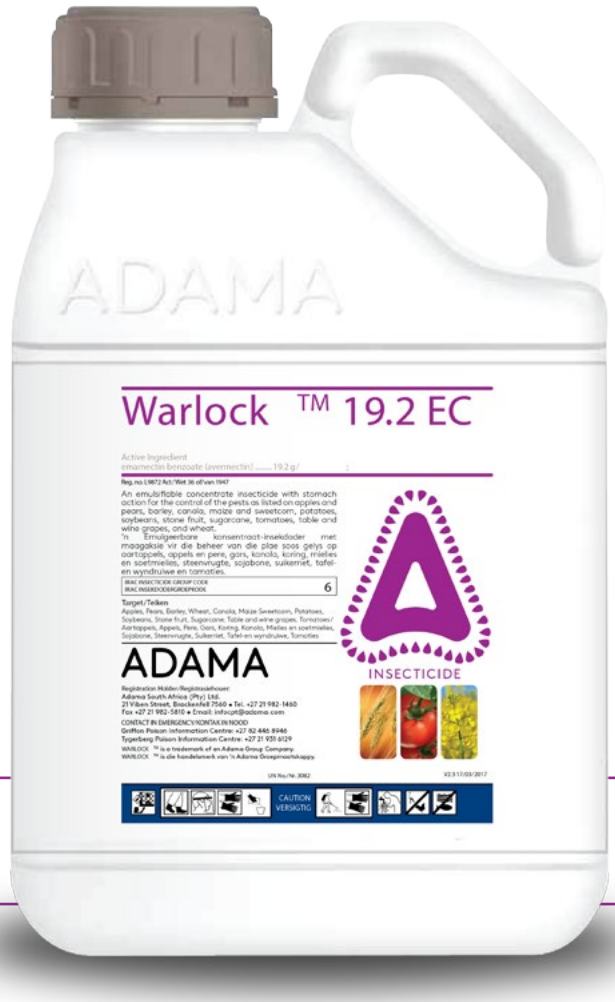
An emulsifiable concentrate insecticide with stomach action for the control of the pests as listed on apples and pears, barley, canola, maize, sweetcorn, potatoes, soybeans, stone fruit, sugarcane, tomatoes, table and wine grapes and wheat.

Product description:

Emamectin benzoate 19.2 g/L

Product features, benefits and info:

Provides protection on both sides of leaf for up to 10 days. Excellent control of lepidopteran pests. Has a Fall army worm emergency registration.



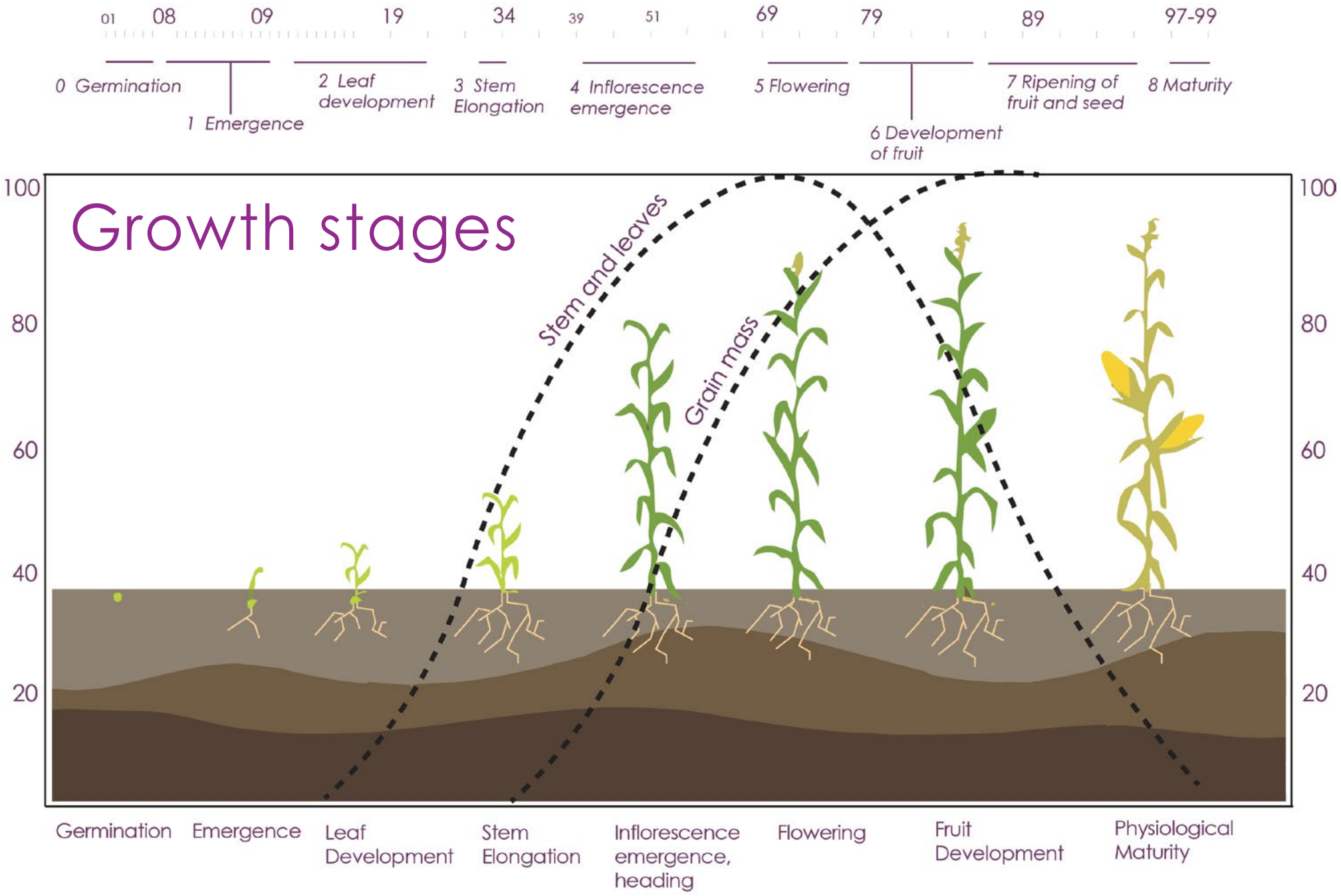
Reg. no. L9872,
Act 36 of 1947
(Caution)

TEAM MEMBERS BY PROVINCE

Freestate, North West, & Northern Cape	*Lourens Oellermann*	082 491 2553
	Albrecht Gerrits	082 335 7750
	Schalk Burger	083 653 7940
	Sallie Herbst	082 805 5515
Northern Cape (Table Grapes)	*Handri Burger*	084 676 4053
	Martin vd Merwe	060 965 9827
Western Cape	*Handri Burger*	084 676 4053
	Martin vd Merwe	060 965 9827
	Eduan Theron	082 342 4699

Eastern Cape	*Handri Burger*	084 676 4053
	Eduan Theron	082 342 4699
KwaZulu-Natal Mpumalanga & Limpopo	*Gavin Smit*	078 257 5126
	Rolf Swart	083 601 2217
	Hardus Hern	078 769 0795
National Sales Manager	*Lourens Oellermann*	082 491 2553
National Marketing & Technical Manager	*Schalk vd Merwe*	082 331 6463

Our field specialists are on standby to assist you identify present or underlying crop problems and are trained to provide you with the best solution, that meets your needs.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97-99
0 Germination
1 Emergence
2 Leaf development
3 Stem Elongation
4 Inflorescence emergence
5 Flowering
6 Development of fruit
7 Ripening of fruit and seed
8 Maturity
Growth stages
100
80
60
40
20
Stem and leaves
Grain mass
Germination
Emergence
Leaf Development
Stem Elongation
Inflorescence emergence, heading
Flowering
Fruit Development
Physiological Maturity

Rainfall calender

(mm/day/site)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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ADAMA

Compiled by

SCHALK BURGER

SOURCES

Maryke Craven
ARC-Grain Crops Institute
cravenm@arc.agric.za

Dr. Belinda Janse Van Rensburg
ARC-Grain Crops Institute
belindaj@arc.agric.za

Annemie Erasmus
ARC-Grain Crops Institute
erasmusa@arc.agric.za

Marlene van der Walt
ARC-Grain Crops Institute
vdwaltm@arc.agric.za

Suria Bekker
North West University
econemaria@mweb.co.za

Driekie Fourie
North West University
Driekie.Fourie@nwu.ac.za

Design & Layout

Cloudnest

DESIGN & MARKETING

www.cloudnestdesign.com

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ADAMA SA (EDMS) BPK, REG NO. 1992/001741/07

ADAMA

www.adama.com

Brackenfell, Cape Town
T: 021 982 1460
E: infocpt@adama.com

Olifantsfontein, Johannesburg
T: 011 635 4300
E: infojhb@adama.com