BASF

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Abacus® Advance

Reg. No.: L9132 Act No. 36 of 1947

FRAC FUNGICIDE GROUP CODES 11 AND 3

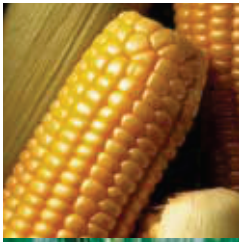
A suspo-emulsion contact and translaminar fungicide, for the preventive control of diseases on barley, maize, soya beans, sugarcane and wheat.

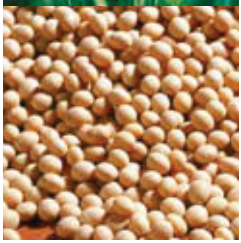
Active ingredients:
Aktiewe bestanddele: Pyraclostrobin (methoxy-carbamate) ..... 62,5 g/ℓ
Epoxiconazole (triazole)..... 62,5 g/ℓ

Reg. Nr: L9132 Wet Nr 36 van 1947

FRAC SWAMDODERGROEPKODES 11 EN 3

'n Suspo-emulsie kontak- en translaminêre swamdoder, vir die voorkomende beheer van siektes op gars, koring, mielies, sojabone en suikerriet.





Registered by / Geregistreer deur:

BASF South Africa (Pty) Ltd
Co. Reg. No. 66/10235/07
P.O. Box 2801
Halfway House 1685

BASF Suid-Afrika (Edms) Bpk.
Mpy Reg. Nr 66/10235/07
Posbus 2801
Halfweghuis 1685

UN No. / VN Nr: 2902
EMERGENCY NUMBER / NOODNOMMER: 083 265 3805

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Geregistreerde Handelsmerk van BASF

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WARNINGS

ALLOW THE FOLLOWING MINIMUM NUMBER OF DAYS, BETWEEN LAST APPLICATION AND HARVEST OR GRAZING:

Barley	70
Maize and sweet corn	30
Soya beans	39
Sugarcane	60
Wheat	60

- Handle with care.
- Harmful if swallowed.
- May cause skin irritation.
- Toxic to fish.
- Keep out of reach of children, uninformed persons and animals.
- Harmful to the unborn child.
- Store away from food and feed.
- Re-entry: Do not enter treated field within two days after application, unless wearing protective clothing.
- Do not graze treated barley, maize, sweet corn or soya bean fields or use as fodder, before 70 days after spraying.

Aerial application:
- Notify and warn all inhabitants in the immediate area of the intended application and issue the necessary warnings.
- Do not spray over adjacent areas or water or permit spray, to drift there.

Although this remedy has been tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions, because the action and effect thereof may be affected by factors such as abnormal soil, climatic- and storage conditions; quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the disease, against the remedy concerned as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation, the environment, harm to man or animal, or for lack of performance of the remedy concerned, due to the occurrence of conditions, which could not have been foreseen in terms of the registration. Consult the supplier, in the event of any uncertainty.

PRECAUTIONS

- Do not inhale spray mist.
- Wear rubber gloves and boots and face shield when handling concentrate and whilst applying.
- Wash after accidental skin contact.
- Do not eat, drink or smoke whilst mixing and applying or before washing hands and face.
- Prevent spray drift onto other crops, grazing, rivers and dams and areas not under treatment.
- TRIPLE RINSE empty containers in the following manner. Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds, after the flow has slowed down to a drip. Thereafter rinse the container three times, with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank, before destroying the container in the prescribed manner.
- Clean applicator after use and do not contaminate crops, grazing, rivers and dams with wash water.
- Destroy empty container and never use for any other purpose.
- Prevent contamination of food, feed, drinking water and eating utensils.

FIRST AID TREATMENT

IF IN EYES:	Wash eyes for at least 15 minutes under running water, with eyelids held open. Consult an eye specialist.
IF SWALLOWED:	Rinse mouth and then drink plenty of water. Do not induce vomiting, unless told by a poison control centre or doctor. Seek medical attention. Never induce vomiting or give anything by mouth, if the victim is unconscious, or having convulsions.
IF ON SKIN:	Wash skin with plenty of soap and water. If irritation develops, seek medical attention.
IF INHALED:	Keep patient calm, remove to fresh air. Seek medical attention.

NOTE TO PHYSICIAN

Treat according to symptoms (decontamination, vital functions), no known specific antidote.

RESISTANCE WARNING

For resistance management, Abacus® Advance is of the Group Codes 11 and 3 fungicide. Any fungal population may contain individuals naturally resistant to Abacus® Advance and other Group Codes 11 and 3 fungicides. The resistant individuals can eventually dominate the fungal population, if these fungicides are used repeatedly and exclusively in programmes. These resistant fungi may not be controlled by Abacus® Advance, or any other Group Codes 11 and 3 fungicides.
To delay fungicide resistance:
- **Avoid exclusive repeated use of fungicides from the same Fungicide Group Code. Alternate or tank-mix with products from different Fungicide Group Codes.**
- **For tank mixing or alternation with products in other Fungicide Group Codes, refer to the applicable individual product labels.**
- **Integrate other control methods (chemical, cultural, biological), into disease control programmes.**

FOR SPECIFIC INFORMATION ON RESISTANCE MANAGEMENT, CONTACT THE REGISTRATION HOLDER, BASF SA (Pty) Ltd.

DIRECTIONS FOR USE: USE ONLY AS DIRECTED

General information:
Apart from fungicidal activity, **F500®**, one of the active ingredients of **Abacus® Advance**, exhibits the potential to increase plant physiological effects which are beneficial to the crop. In growing number of regions including the USA, UK, Europe, Brazil and Argentina, **F500®** is also registered and recommended as a plant health remedy, to increase yields. Research conducted locally, has proven that the use of **Abacus® Advance,** according to label recommendations, can also increase yield, even in situations when low disease pressure occur.

Silage can be made after one **Abacus® Advance** application on maize, at the soft dough stage.

Compatibility:
The compatibility of **Abacus® Advance** has been proven with Roundup® Powermax (L7769), **Fastac® EC** (L4991) and **Fastac® SC** (L4992). It is however always recommended that the compatibility of **Abacus® Advance** with other herbicides, insecticides and acaricides, have to be tested on a small scale, before used in spray mixtures.

DO NOT use any additional wetters, spreaders or other adjuvants as **Abacus® Advance** has already been formulated with optimised amounts of surfactants. The only exception is in regions where water quality is known to be poor, a flowable (50%) high quality ammonium sulphate, can be used, to ameliorate the water, before adding **Abacus® Advance**.

Mixing instructions:
Half fill the tank with clean water. Measure the required quantity of **Abacus® Advance** and pre-mix this with at least 10 ℓ water. Add this mixture to the water in the spray tank, while agitating the mixture. Fill the spray tank with water, while maintaining agitation, to ensure thorough mixing of the spray mixture, before spraying commences. Maintain agitation during the whole spraying operation. Prepared spray mixture must not be left in the spray tank for any length of time, e.g. overnight.

Anti-resistance strategy:
- In order to maintain the efficacy of **Abacus® Advance**, it is necessary to prevent the development of resistance of the diseases against fungicides of the DMI (triazole-) and QOI-fungicide groups.
- Do not reduce the dose rate below what is recommended on the label.
- Never use other DMI (triazole-) or QOI-fungicide fungicides, or related fungicides, in the same programme with **Abacus® Advance**.
- Do not exceed two applications of **Abacus® Advance,** per season.

Aerial application:
Aerial application of **Abacus® Advance** may only be done by a registered aerial application operator, using a correctly calibrated, registered aircraft, according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Pesticides). Ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria be met:
- **Volume:** A spray mixture volume of 30 - 35 ℓ per hectare is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy, or be held responsible for any adverse effects if this product is applied aerially at a lower volume rate than recommended above.
- **Droplet coverage:** 50 - 70 droplets per cm^2 must be recovered at the target area.
- **Droplet size:** A droplet spectrum with a VMD of 250 micron is recommended. Limit the production of fine droplets less than 150 micron (high drift and evaporation potential) to a minimum.
- **Flying height:** Maintain the height of the spray boom at 3 - 4 metres above the target. Do not spray when aircraft dives, is in a climb or when banking
- Use suitable atomising equipment that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product. The spraying system must produce a droplet spectrum with the lowest possible Relative Span.
- Position all the atomisers within the inner 60 - 75 % of the wingspan to prevent droplets from entering the wingtip vortices.
- The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8 °C.
- Stop spraying if the wind speed exceeds 15 km / h.
- Stop spraying under turbulent, unstable and dry conditions during the heat of the day.
- Spraying under temperature inversion conditions (spraying in or above the inversion layer) and / or high humidity conditions (relative humidity 80 % and above) may lead to the following:
  - Reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage).
  - Damage to other sensitive crops and / or non-target areas through drifting of the suspended spray cloud away from the target field.
- Ensure that the aerial spray operator knows exactly which fields to spray.
- Obtain an assurance from the aerial spray operator that the above requirements will be met and that relevant data will be compiled in a logbook and kept for future reference.

All spray applications must be made with suitable equipment, that is in good working order and correctly calibrated, to give the desired coverage for that particular method of application.

CROP	DISEASE	DOSAGE ℓ / ha	DIRECTIONS FOR APPLICATION
BARLEY	Leaf spot (*Rhynchosporium secalis)*	1,0	Apply preventively or at very first signs of disease presence. Apply a second application 3 – 4 weeks later, if high disease pressure occurs. **Ground application:** Apply in 200 – 400 ℓ water / ha. **Aerial application**: Apply in 30 – 40 ℓ water / ha.
	Leaf rust *(Puccinia hordei)*	1,0	Apply as soon as infection is noticed and repeat if necessary 3 - 4 weeks later. **Ground application:** Apply in 200 – 400 ℓ water / ha. **Aerial application:** Apply in 30 – 40 ℓ water / ha.
	Net blotch *(Pyrenophora teres)*	1,0	Apply preventively or at very first signs of disease presence. Repeat the application 3 - 4 weeks later. **Ground application:** Apply in 200 – 400 ℓ water / ha. **Aerial application:** Apply in 30 – 40 ℓ water / ha.
	Powdery mildew *(Erisiphe graminis)*	1,0	Apply as soon as infection is noticed and repeat if necessary 3 - 4 weeks later. Ground application: Apply in 200 – 400 ℓ water / ha. **Aerial application:** Apply in 30 – 40 ℓ water / ha. **Do not exceed two applications of Abacus® Advance, per season.**

CROP	DISEASE	DOSAGE ℓ / ha	DIRECTIONS FOR APPLICATION
MAIZE and **SWEET CORN**	Grey leaf spot *(Cercospora zeina)* Northern leaf blight *(Exserohilum turcicum)* Rust *(Puccinia sorghi)*	1,6	**Abacus® Advance is recommended in an integrated disease management programme. Consistent and reliable disease control is dependant on preventive fungicide applications.** Apply the first application of **Abacus® Advance** at growth stage 31 (first node detectable above the soil surface, also described as the 5 – 6 leaf stage). A second application of **Abacus® Advance** is recommended at growth stage 51 (tassel detectable). If extended disease control is required under continued high disease pressure conditions, a third application with **Duett®** (L5791), is recommended, 3 - 4 weeks later. In certain areas / conditions, where low disease presence is expected, apply **Abacus® Advance** between growth stage 31 (first node detectable above soil surface, also described as the 5 - 6 leaf stage) and growth stage 35 (8 leaf stage). Growth stage 35 is regarded as the last possible stage to enter the field with a conventional tractor applicator. If extended disease control is required, revert back to the above mentioned follow – up application of **Abacus® Advance.** High disease pressure is increased by the following factors: • Persistent favourable climatic conditions. • Density of plantings. • Inoculums source (especially under minimum till practices). • Disease susceptibility of variety / hybrid planted. • A delay to initiate the fungicide program. **Ground application:** Apply as a full cover spray in 150 - 300 ℓ water / ha. Use well maintained quality appliation aquipment, delivering a fine and evenly distributed spray pattern on the plant surface. **Back-pack sprayer with hand-held boom:** As for recommendations above, in at least 50 – 70 ℓ water / ha. **Aerial application:** As for recommendations above in 40 ℓ water / ha.
		550 mℓ / 100 ℓ water	**Row application for low density plantings:** This dosage is based on an overall ground application of 1,6 ℓ / ha, in 300 ℓ water / ha. Apply using a tandem fitting with two solid- or hollow cone nozzles, mounted on the boom above each row. Use sufficient water (not less than 100 ℓ / ha), to ensure total coverage of the plant. **Do not exceed two applications of Abacus® Advance, per season.**

CROP	DISEASE	DOSAGE ℓ / ha	DIRECTIONS FOR APPLICATION
SOYA BEANS	Soya bean rust *(Phakopsora pachyrhizi)*	1,0	Spray preventively, before first signs of disease development is noticed (normally at onset of flowering) and repeat 21 – 28 days later. Apply the shorter interval of three weeks, when high disease pressure is expected, due to weather conditions that favour disease development. **This programme application will also reduce the incidence of Sclerotinia *(Sclerotinia sclerotiorum).*** **Ground application:** Apply as a full cover spray in 150 - 300 ℓ water / ha. Use well maintained quality application equipment, delivering a fine and evenly distributed spray pattern, on the plant surface. **Aerial application:** As for recommendations above in 40 ℓ water / ha.
SUGAR-CANE	Brown rust *(Puccinia melanocephala)* Tawny Rust (*Puccinia* spp.) Refer to **Note** below	1,6	**Apply two applications.** The first application is to be applied at 4 – 6 leaf stage, preventively, or at the first sign of brown rust infection. The second application is to be made one month after the first application. Preventive application for the control of Tawny rust is strongly advised. It is a disease that develops rapidly and curative application may not always provide desired results **Ground application:** Apply as a full cover spray in 200 ℓ water / ha. **Aerial application:** Apply in 30 ℓ water / ha.
WHEAT	Speckled leaf blotch and Glume blotch (*Septoria spp.)* Brown rust / Leaf rust *(Puccinia triticina)* Stem rust *(Puccinia graminis)* Powdery mildew *(Erysiphe graminis)* Yellow rust / Stripe rust *(Puccinia striiformis)*	1,0	Commence spraying at first sign of infection, but not later than the flag leaf emergence. Apply a second application 3 – 5 weeks later if high disease pressure occurs. **Ground application**: Apply in 200 – 400 ℓ water / ha. **Aerial application:** Apply in 30 - 40 ℓ water / ha.

Note:

- Tawny rust (formerly referred to as African rust), can occur through all the production areas of South Africa. Characterization of the species is currently underway. This rust shows unique symptoms and is easily distinguished from brown rust by the following visual characteristics:
  - The rust pustules on the leaf surface once they have burst open are orange in colour.
  - The rust pustules occur on both the upper and lower side of the leaf.
- Severe infection by Tawny rust has been recorded on varieties N25 and N46 and the disease has also been observed on N12, N31, N41, N43, N46, N49, N53.