



The Chemical Company

CROP STAGING GUIDE

FUNGICIDES



Take a stand. Stop disease before it starts.

Once yield is lost to disease, it's gone forever. There's no cure. The best way to prevent this yield loss is to stop disease before it starts. And that means taking preventative action, before the appearance of disease symptoms.

An effective preventative program is built around proper application timing. With a wait-and-see approach, you'll sacrifice yield. By the time you see symptoms, disease has already started its damage. So stay ahead of disease with a planned preventative fungicide program. This guide will help you get the most from BASF fungicides. It shows you the optimum application window for LANCE[®], Caramba[®] and HEADLINE[®] fungicides on key Canadian crops.



Get more from your BASF fungicides.

BASF is a world leader in fungicide technology. Our products protect all major field crops from the worst diseases. Count on BASF for innovative solutions to the challenges of effective crop protection.



HEADLINE®
F U N G I C I D E

- Unprecedented control of key diseases.
- Unique *AgCelence™* benefits: greener leaves, stronger stems and larger seeds for a higher yielding, high quality crop with improved harvestability.
- Wheat, barley, oats, corn, soybeans, dry beans, field peas, lentils, flax, canola and many other crops.



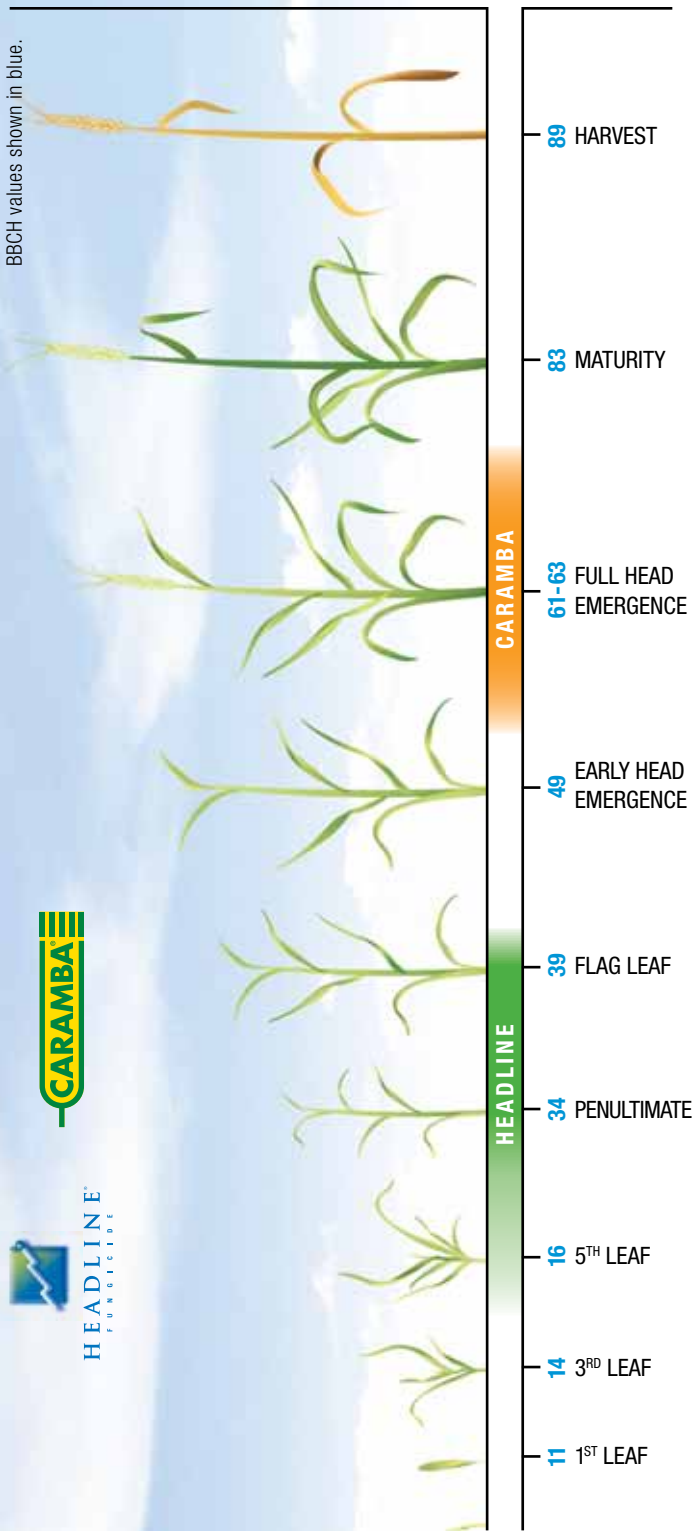
LANCE®
F U N G I C I D E

- Highest level of *Sclerotinia* and *Botrytis* protection for the highest potential yields.
- A broad range of crops including canola and dry beans.



- Highest level of Fusarium head blight management and premium leaf disease control.
- Protects grade, yield and quality.
- For use in (spring and winter) wheat, barley, rye, durum and oats.

BBCH values shown in blue.



Barley

HEADLINE application tips

DISEASES CONTROLLED: Net blotch, spot blotch, stripe rust, scald.

APPLICATION RATE: 120-160 mL/ac (300-400 mL/ha or 80-105 acres per case).

WATER VOLUME: Ground – 10 imp. gal./ac (100 L/ha).
Air – 5 imp. gal./ac (50 L/ha).

APPLICATION TIMING: 1st application – immediately at or after the flag leaf has fully unrolled.
2nd application – See notes.

NOTES: To maximize the unique *AgCelence*[™] benefits of improved yield, crop quality and harvestability, HEADLINE[®] fungicide should be applied preventatively, before the onset of disease symptoms.

For maximum yield in cereals, it is important to protect the flag leaf with HEADLINE.

When more than one fungicide application is planned, HEADLINE may be tank-mixed with your herbicide application. A second application should be planned for the flag leaf stage or at heading with an application of CARAMBA for Fusarium head blight management.

CARAMBA application tips

ACTIVITY ON: Fusarium head blight.

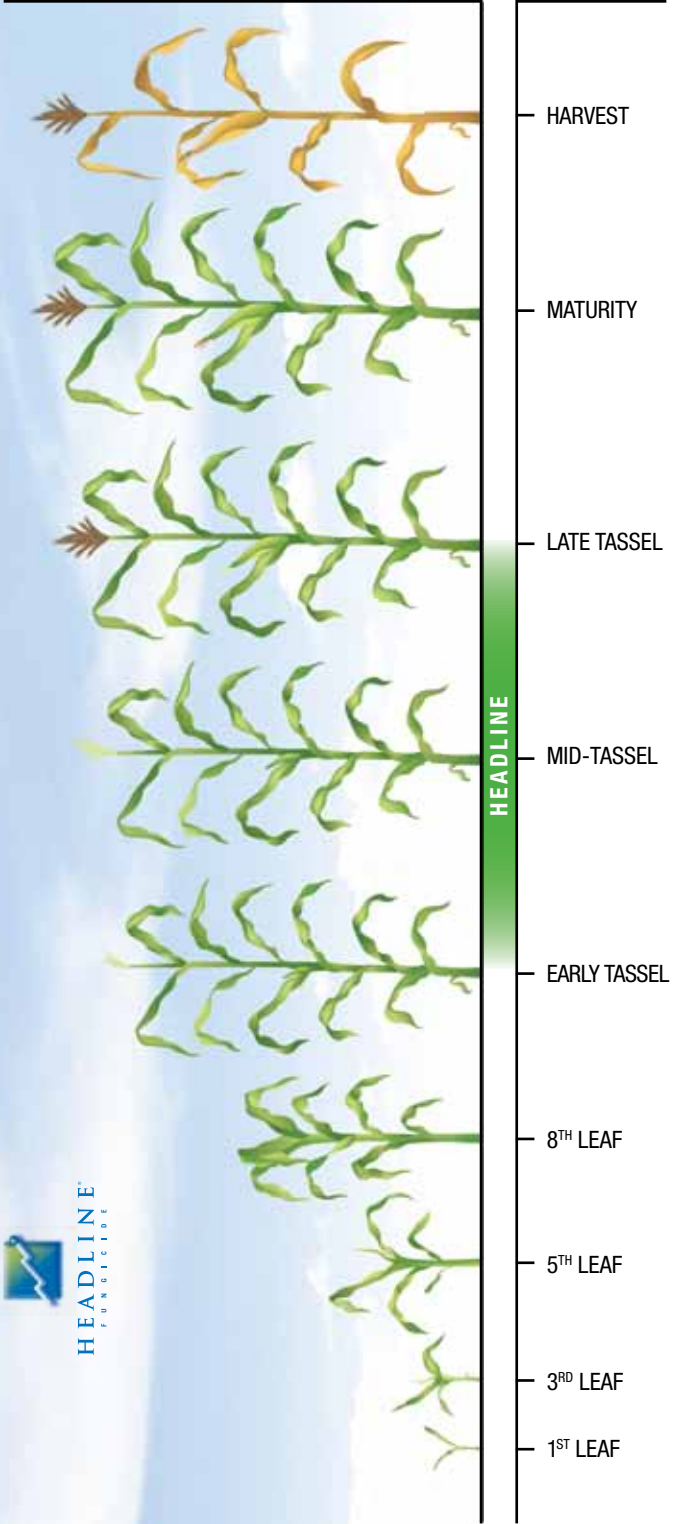
APPLICATION RATE: 0.4L/ac (40 acres per case, 320 acres per shuttle or 1.0 L/ha)

WATER VOLUME: Ground – use a minimum 9 imp. Gal/ac (100 L/ha).
Air – 5 imp. Gal/ac (50 L/ha).

APPLICATION TIMING: for FHB apply when barley has full head emergence to up to 3 days after full head emergence of the main stems.

NOTES: To maximize yield and reduce DON levels, apply CARAMBA to wheat at 20% flowering (GS 61-63). For barley, apply between full head emergence to up to 3 days after full emergence of main stem heads.

The risk of Fusarium Head Blight (FHB) in cereals is greatest when weather is warm and wet at head emergence and flowering. Preventative application of CARAMBA fungicide will reduce the amount of FHB and Fusarium toxin (DON) in harvested grain.



Corn

HEADLINE application tips

DISEASES CONTROLLED: Common rust, grey leaf spot.

APPLICATION RATE: 160 mL/ac (400 mL/ha or 80 acres per case).

WATER VOLUME: Ground – 10 imp. gal./ac (100 L/ha).
Air – 5 imp. gal./ac (50 L/ha).

APPLICATION TIMING: 1st application – early to full tassel.
2nd application – 7-14 days after first (see notes).

NOTES: To maximize the unique *AgCelence*[™] benefits of improved yield, crop quality and harvestability, HEADLINE[®] fungicide should be applied preventatively, before the onset of disease symptoms, at early tassel.

Typically, field corn only requires one application. For seed and/or sweet corn, if disease persists or if weather conditions favour disease development, make a second application with a fungicide containing a second mode of action 7-14 days after the first application.

*Where required, HEADLINE® and LANCE® may be tank-mixed. **Apply LANCE or a different mode of action.



HEADLINE*

LANCE*

LANCE**

HARVEST

POD FILL

LATE FLOWER

MID-FLOWER

EARLY FLOWER

3RD TRIFOLIATE

UNIFOLIATE

COTYLEDON

Dry Beans

HEADLINE application tips

DISEASES CONTROLLED: Anthracnose, *Mycosphaerella* blight, powdery mildew, rust, Asian soybean rust.

APPLICATION RATE: 160 mL/ac (400 mL/ha or 80 acres per case).

WATER VOLUME: Ground – 10 imp. gal./ac (100 L/ha).
Air – 5 imp. gal./ac (50 L/ha).

APPLICATION TIMING: 1st application – 20-50% bloom.
2nd application – 10-14 days after first (see notes).

NOTES: In areas at risk of anthracnose or rust, scouting should begin before flowering. If either disease is detected in the crop, apply HEADLINE® fungicide immediately. Alternatively, apply a preventative application of HEADLINE at early flower. If disease persists or if weather conditions favour disease development, make a second application of HEADLINE 10-14 days after the first application.

LANCE application tips

DISEASE CONTROLLED: White mold, *Botrytis* grey mold.

APPLICATION RATE: High white mold risk – 283 g/ac (708 g/ha or 20 acres per 5.66 kg case). Low to moderate white mold risk – 226 g/ac (565 g/ha or 25 acres per 5.66 kg case).

WATER VOLUME: Ground – 10 imp. gal./ac (100 L/ha).
Air – 4 imp. gal./ac (40 L/ha).




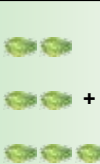















CHEMIGATION: Do not exceed 1/4" water.

APPLICATION TIMING: 1st application – 20-50% bloom, at the appearance of the first pin bean.

2nd application – See notes.

NOTES: Applications of LANCE® fungicide must be made before the appearance of disease symptoms and should be timed to provide the greatest possible protection through the flowering period. A second application with a fungicide containing a second mode of action should be made to protect the late bloom stage 1) if the weather is cool and wet, at 7-10 days after the first application, or 2) if the canopy is dry and the weather is warm and dry, at 10-14 days.

OPTIMAL APPLICATION TIMING **NOTE:** This chart shows the relative abundance of plant parts (not the actual number) at each bloom stage.

% FLOWERING	BUDS	OPEN BUDS	FLOWERS	OLD FLOWERS (BROWNE D)	PIN BEANS	FULL PODS
10%						
30%						
50%						
70%						

BBCH values shown in blue.



CARAMBA

HEADLINE

89 HARVEST

83 MATURITY

61-63 FULL PANICLE
EMERGENCE

49 EARLY PANICLE
EMERGENCE

39 FLAG LEAF

34 PENULTIMATE

16 5TH LEAF

14 3RD LEAF

11 1ST LEAF

EMERGENCE

Oats

HEADLINE application tips

DISEASE CONTROLLED: Crown rust.

APPLICATION RATE: 120-160 mL/ac (300-400 mL/ha or 80-105 acres per case).

WATER VOLUME: Ground – 10 imp. gal./ac (100 L/ha).
Air – 5 imp. gal./ac (50 L/ha).

APPLICATION TIMING: 1st application – Immediately at or after flag leaf has fully unrolled.

2nd application – See notes.

NOTES: To maximize the unique *AgCelence*[™] benefits of improved yield, crop quality and harvestability, HEADLINE[®] fungicide should be applied preventatively, before the onset of disease symptoms.

To maximize yield in cereals, it is important to protect the flag leaf with HEADLINE just as the leaf emerges.

When more than one fungicide application is planned, HEADLINE may be tank-mixed with your herbicide application. The second application should follow at the flag leaf stage or at heading with an application of CARAMBA for *Fusarium* head blight management.

CARAMBA application tips

ACTIVITY ON: Fusarium head blight.

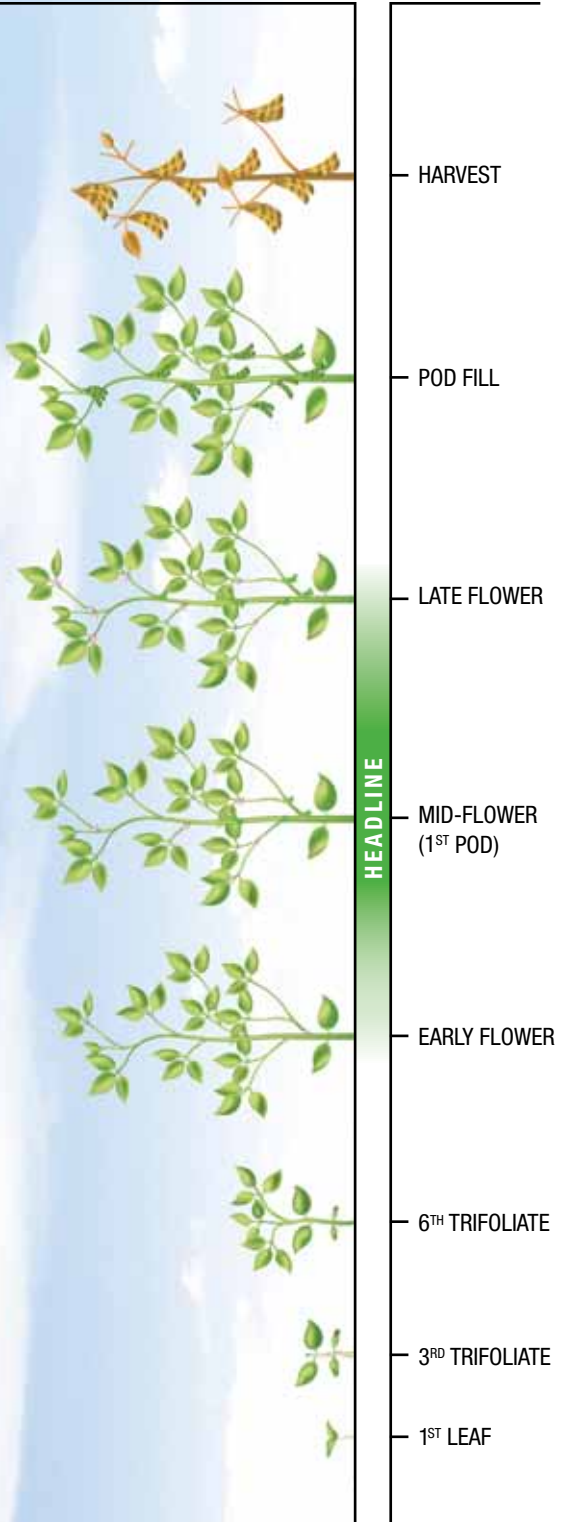
APPLICATION RATE: 0.4L/ac (40 acres per case, 320 acres per shuttle or 1.0 L/ha)

WATER VOLUME: Ground – use a minimum 9 imp. Gal/ac (100 L/ha).
Air – 5 imp. Gal/ac (50 L/ha).

APPLICATION TIMING: apply at 20% flowering (Growth Stage 61-63). For FHB apply when oats & rye are at 20% flowering (GS 61 to 63).

NOTES: To maximize yield and reduce DON levels, apply CARAMBA to wheat at 20% flowering (GS 61-63). In oats apply CARAMBA when 75-100% of the stem heads are fully emerged and when 40-50% of head are flowering.

The risk of Fusarium Head Blight (FHB) in cereals is greatest when weather is warm and wet at head emergence and flowering. Preventative application of CARAMBA fungicide will reduce the amount of FHB and Fusarium toxin (DON) in harvested grain.



Soybeans

HEADLINE application tips

DISEASES CONTROLLED: Frogeye leaf spot, Asian soybean rust.

APPLICATION RATE: 160 mL/ac (400 mL/ha
or 80 acres per case).




















WATER VOLUME: Ground – 10-20 imp. gal./ac (100-200 L/ha).
Air – 5 imp. gal./ac (50 L/ha).

APPLICATION TIMING: 1st application – Early pod stage
(R2 – R3 growth stage).
2nd application – See notes.

Notes: To maximize the unique *AgCelence*[™] benefits of improved yield, crop quality and harvestability, HEADLINE[®] fungicide should be applied preventatively, before the onset of disease symptoms, ideally at the early pod stage. If disease persists or if weather conditions favour disease development, follow the initial HEADLINE treatment with an approved fungicide (non-Group 11 or non-QoI mode of action) for resistance management.

SOYBEAN BLOOM STAGE GUIDE

OPTIMAL APPLICATION TIMING **NOTE:** This chart shows the relative abundance of plant parts (not the actual number) at each bloom stage.

% FLOWERING	BUDS	OPEN BUDS	FLOWERS	OLD FLOWERS (BROWNEO)	SMALL PODS	FULL PODS
10%						
30%						
50%						
70%						

BBCH values shown in blue.



89 HARVEST

83 MATURITY

61-63 FULL HEAD EMERGENCE

49 EARLY HEAD EMERGENCE

39 FLAG LEAF

34 PENULTIMATE

16 5TH LEAF

14 3RD LEAF

11 1ST LEAF

CARAMBA

HEADLINE

Wheat

HEADLINE application tips

DISEASES CONTROLLED: Leaf rust, tan spot, *Septoria* leaf spot, spot blotch, stripe rust, powdery mildew.

APPLICATION RATE: 120-160 mL/ac (300 -400 mL/ha or 80-105 acres per case).

WATER VOLUME: Ground – 10 im. gal./ac (100 L/ha).
Air – 5 imp. gal./ac (50 L/ha).

APPLICATION TIMING: 1st application – Immediately at or after the flag leaf has fully unrolled.
2nd application – See notes.

NOTES: To maximize the unique *AgCelence*[™] benefits of improved yield, crop quality and harvestability, HEADLINE[®] fungicide should be applied preventatively, before the onset of disease symptoms.

To maximize yields in cereals, it is important to protect the flag leaf with HEADLINE just as the leaf emerges.

When more than one fungicide application is planned, HEADLINE may be tank-mixed with your herbicide application. A second application should be planned for the flag leaf stage or at heading with an application of CARAMBA for *Fusarium* head blight management.

CARAMBA application tips

ACTIVITY ON: *Fusarium* head blight, Leaf Rust, Tan Spot, *Septoria* Leaf Spot.

APPLICATION RATE: 0.4L/ac (40 acres per case, 320 acres per shuttle or 1.0 L/ha)

WATER VOLUME: Ground – use a minimum 9 imp. Gal/ac (100 L/ha).
Air – 5 imp. Gal/ac (50 L/ha).

APPLICATION TIMING: for FHB apply when wheat is at 20% flowering (GS 61 to 63); when 75-100% of the main stem heads have emerged or 50% of the heads are flowering. When targeting leaf diseases apply prior to heading and apply prior to disease development; use higher rate when conditions are conducive for disease development.

NOTES: To maximize yield and reduce DON levels, apply CARAMBA to wheat at 20% flowering (GS 61-63). In wheat apply CARAMBA when 75-100% of the stem heads are fully emerged and when 40-50% of head are flowering.

The risk of *Fusarium* Head Blight (FHB) in cereals is greatest when weather is warm and wet at head emergence and flowering. Preventative application of CARAMBA fungicide will reduce the amount of FHB and *Fusarium* toxin (DON) in harvested grain.

Innovation. Now and in the future.

BASF is committed to advancing Canadian agriculture through innovation. It's a commitment that's demonstrated in products like HEADLINE® fungicide: tested and proven through countless grower trials, delivering unparalleled disease control with unique *AgCelence*™ benefits that improve yield and add more value to your investment. It's also demonstrated in tools like this fungicide staging guide – helping you to make the most of every acre.

For more than 100 years, innovation has driven the way we do business. In the coming years, you'll see more and more new products and services designed specifically for the needs of you – the Canadian grower. That's because we're committed to listening to your input to guide our innovation – every single day. After all, it's not just about crop protection – it's about growing your business. If you have any questions or ideas to share, give us a call at **AgSolutions**® by BASF at 1-877-371-BASF (2273).

Always read and follow label directions.

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**ADVANCING AGRICULTURE
THROUGH INNOVATION.**