Fungicide Behavior in Corn and Soybeans

Grow Smart™ with BASF

Strobilurin (QoI) Fungicides			Triazole (DMI) Fungicides			Carboxamide (SDHI) Fungicides		
Active Ingredient	**Solo Product**	**Premix**	**Active Ingredient**	**Solo Product**	**Premix**	**Active Ingredient**	**Solo Product**	**Premix**
Pyraclostrobin	Headline® fungicide	Headline AMP® fungicide, Priaxor® and Priaxor D fungicides	Metconazole	Caramba® fungicide*	Headline AMP fungicide	Fluxapyroxad (Xemium® fungicide)	Sercadis® fungicide*	Priaxor and Priaxor D fungicides
			Propiconazole	Tilt®	Quilt Xcel, Trivapro B	Benzovindiflupyr (Solatenol®)	Trivapro A	N/A
Azoxystrobin	Quadris®	Quilt Xcel®, Quadris Top®, Trivapro™ B	Prothioconazole	Proline®	Stratego YLD			
			Cyproconazole	Alto®	Aproach Prima			
Trifloxystrobin	Gem®*	Stratego® YLD	Flutriafol	Topguard®	Fortix/Preemptor			
Picoxystrobin	Aproach®	Aproach Prima	Tetraconazole	Domark®	Priaxor D fungicide			
Fluoxastrobin	Evito®	Fortix®/ Preemptor™	Difenoconazole	Inspire®*	Quadris Top			

Strobilurins, Triazoles, and Carboxamides are the most commonly used fungicides in corn and soybeans.

*Not registered for use in corn or soybeans.

Fungicide Mobility in Plants:

Fungicides vary in their mobility/systemicity within plants.

Xylem tissue – moves water and minerals from roots to leaves (outward movement to leaf tips);

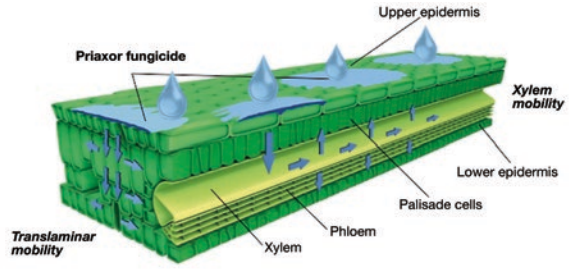
Phloem tissue – moves food substances (sugars) from leaves to the rest of the plant (inward movement throughout plant).

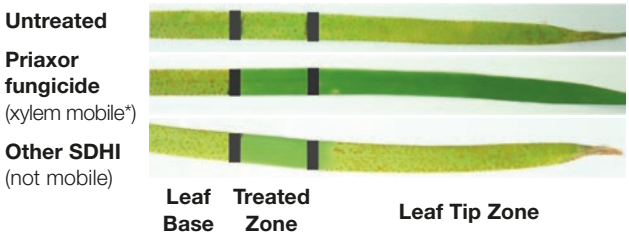
Some fungicides move short distances from the site of application, through a leaf blade from one surface to the other (local systemic or translaminar). Some fungicides are weakly systemic and move further from the application site outward to the leaf tip (**xylem mobile**). Xylem mobility is dependent upon the relationship of hydro- and lipophilicity. Lipophilicity affects the fungicide getting past the leaf cuticle. Water solubility affects the movement in the xylem once the fungicide is there. Higher water solubility increases movement.

No corn or soybean fungicide is phloem mobile.

New growth that emerges after a fungicide application is not protected (any minimal protection that occurs is due to stem contact and movement into newly emerging foliage).

Priaxor Fungicide: Excellent Systemicity





*Leaf Rust – 1 Day Preventative. Source: Dr. Speakman, APR/FM.

Technical Information Bulletin

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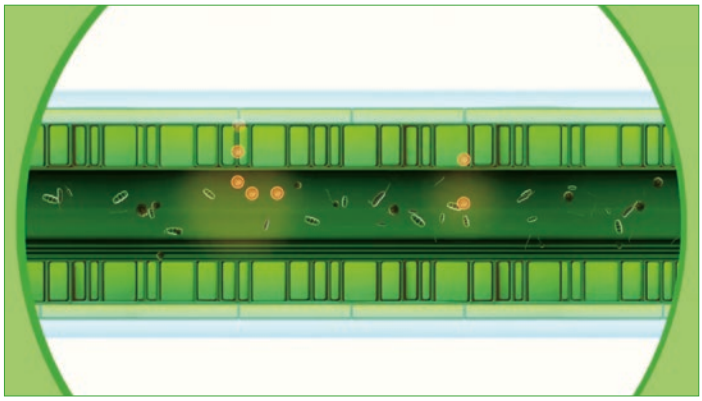
Metconazole Leaf Penetration and Xylem Mobility in Leaf

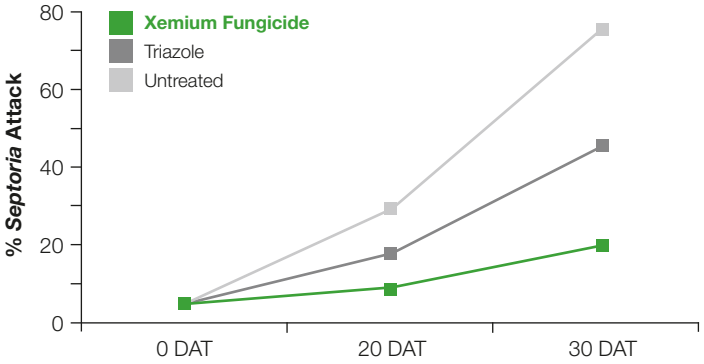


The rapid penetration and integration of metconazole (the triazole component of Headline AMP fungicide) into the leaf is due to its strong affinity for the waxy cuticle (lipophilicity properties) providing the first line of defense against foliar pathogens. Once inside the leaf, metconazole is 5 and 10 times less water soluble than propiconazole and prothioconazole, respectively. Therefore, metconazole fungicide moves more slowly in the xylem, rather than racing or moving to the leaf tips and potentially leaving the center of the leaves unprotected.

Fungicide Residual and Longevity in Plants:

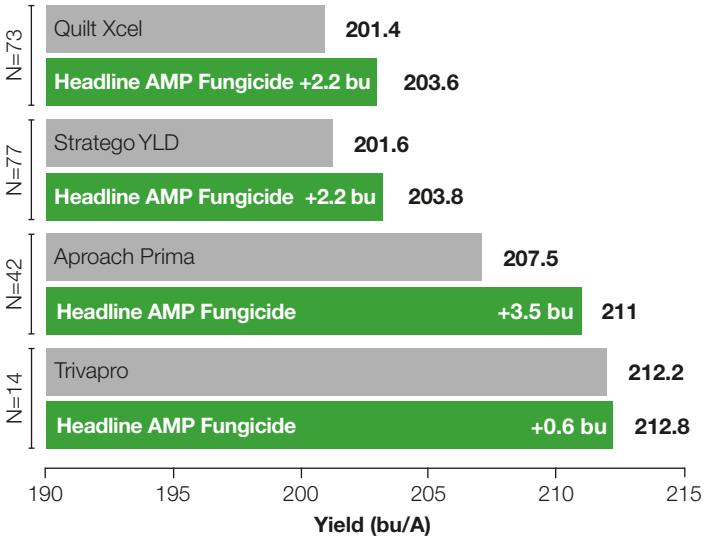
Fungicides also vary in their length of residual, based upon chemical properties. In the BASF portfolio, the triazole metconazole is the shortest lived (~14 days), followed by the strobilurin pyraclostrobin (~21 days), followed by the carboxamide Xemium fungicide (~28 days). See example below.

Priaxor® Fungicide: Continuous Protection Against *Septoria*



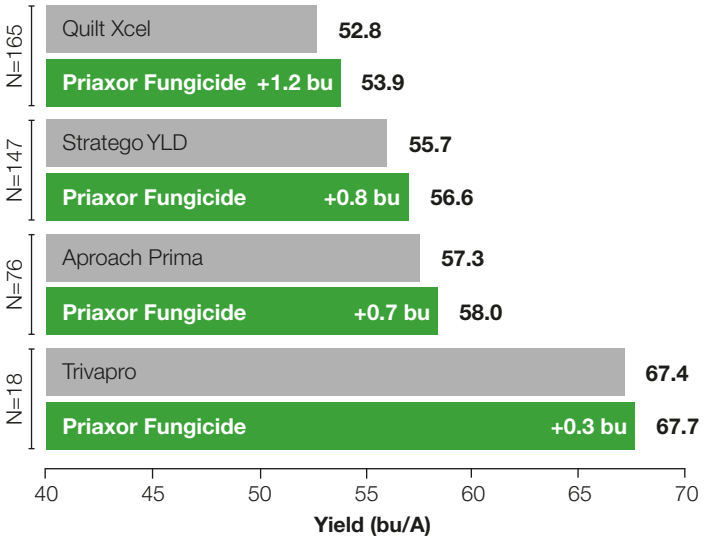
BASF Field trial UK 2008: 5% initial attack; 1 application at GS 59; comparison of full dose rates. DAT = days after treatment.

Headline AMP® Fungicide Outperforms the Competition in Corn



Summary of small-plot replicated trials, pair-wise comparisons by product with Headline AMP fungicide (10 fl oz/A). BASF trials or partially/fully sponsored University or Consultant locations. All applications made after VT. Preemptor applied at 4 fl oz/A (2013-2016); Aproach Prima applied at 6.8-7 fl oz/A (Highest labeled rate is 6.8 fl oz/A) (2013-2016); Stratego YLD applied at 4 fl oz/A (2011-2016); Quilt Xcel applied at 10.5 fl oz/A (2011-2016); Trivapro applied at 4 + 10.5 fl oz/A (2016).

Priaxor Fungicide Outperforms the Competition in Soybeans



Summary of 2010-2016 Small Plot Replicated Trials. Applications R3. Priaxor 4 fl oz/A, Quilt Xcel 10.5 fl oz/A, Stratego YLD 4 fl oz/A, Aproach Prima 7 fl oz/A, Trivapro 14.6 fl oz/A.

To learn more about crop protection products from BASF, visit www.agproducts.basf.us

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