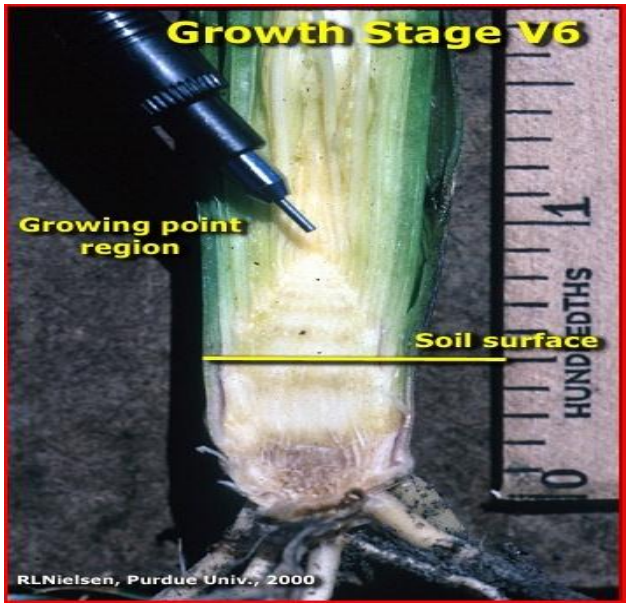
Apply Quadris fungicide early

It appears 2012 will have a large increase in corn acres across the United States, and with high production costs, growers are looking for more ways to protect their investment and increase yields. Over the past few years, many growers have applied fungicides at the R1 stage (50% silks emerged) and most have found this beneficial to their farming operation.

Syngenta has become a leader in looking for new ways to increase yields and improve Plant Performance™. One area we have been working on and learning more about is the early application of Quadris® fungicide around the V4-V8 growth stage of corn.

Why Quadris early?

If we think about when a corn plant starts to develop yield potential, it starts at around V5 when the ear shoots are developed. At around V8, the number of rows is finalized and by around V12 the plant has determined the kernels per row. From this point on yields start reducing due to weather events, insects and diseases.



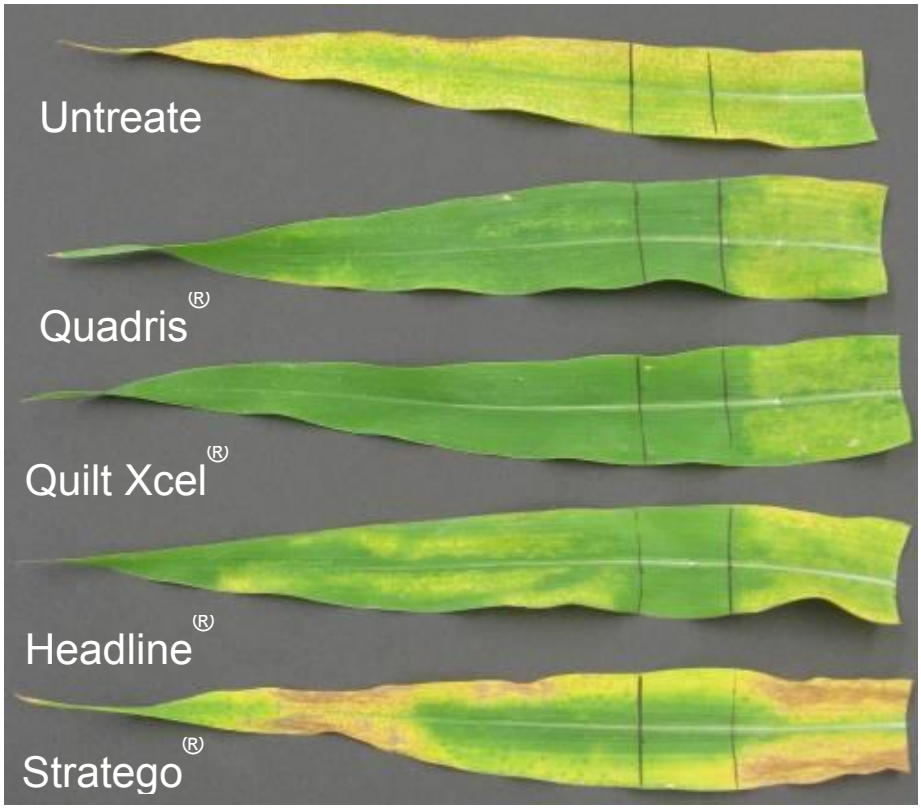
Benefits of early Quadris applications

1. Applying Quadris fungicide between V4 and V8 will protect the corn plant from yield-robbing disease infection during these important developmental stages.
2. Improved stalk and root health can help increase nutrient and water uptake, which help the plant cope with stressful growing conditions. It also improves plant standability for an easier, more efficient harvest.
3. Quadris can be tank mixed with certain Syngenta herbicides. Please check with your local Syngenta representative or local retailer for more details.
4. Growers have experienced an average of 6 bushels per acre yield increase from on-farm and Syngenta Agronomy

Research trials, proving there is opportunity for increased profitability.

Quadris-X Factor™

As you can see in the picture below, not all fungicides work the same. The active ingredient of Quadris is azoxystrobin. Not only does azoxystrobin provide effective and broad-spectrum disease control, it also is the most xylem-mobile foliar fungicide available for corn. Xylem-mobile means Quadris is moved into the same tissue responsible for moving water into the plant. This is especially important for early applications of Quadris because it ensures extended protection into new growth (leaves and stalk tissue), providing increased protection and residual in more parts of the plant than other fungicides.



Although an early application of Quadris has proven to be very beneficial, it should not replace an R1 application of Quilt Xcel®. The goal of the each application is to provide disease control and Plant Performance benefits that affect the plant during the growth stages after application. Over several years, on-farm Syngenta trials have shown both yield and Plant Performance benefits from the individual fungicide treatments. Trials that were treated both with the early Quadris (V4-V8) application and the Quilt Xcel application during early grain fill (R1) also have shown yield increases and improved Plant Performance.

Does the mild winter coupled with glyphosate resistance mean re-thinking pre-plant burndown herbicide use?

The mild conditions this fall and winter have meant emergence and significant growth of winter annual weeds across the country. Where no-till, minimum-till or strip till is adopted, these weeds compete for soil moisture and nutrients and cause significant problems with crop establishment. By the time the conditions are ready for planting these winter annuals will be tough to control.

In 2009, the estimated no-till area in the U.S. was 88 million acres, comprising about 36% of the area planted to the top 8 major crops: barley, corn, cotton, oats, rice, sorghum, soybeans and wheat (Horowitz, et al 2010). This represents a 1.5% annual growth rate of the no-till area in corn, cotton, soybeans and rice.

The benefits of no-till or reduced tillage in reducing soil erosion and in moisture conservation have been well documented (Hoeft et al. 2000). It is important to note that the development of these systems was enabled by the introduction of herbicides, such as glyphosate and paraquat, that controlled the weeds that emerged before planting (Huggins & Reganold, 2007). The effectiveness of the former herbicide against both grass and broadleaf weeds led to its widespread use pre-plant and with the introduction of glyphosate-tolerant crops in 1996, even more intensively in-crop.

However, the unfortunate consequence of such a reliance on glyphosate and the lack of diversity in herbicide use was the evolution of resistance. Resistance to glyphosate in horseweed/marestail (*Conyza canadensis*) was confirmed for the first time in 2001 in Delaware, where glyphosate had been used pre-plant in soil conservation systems for many years (VanGessel, 2001).

Soybean field in DE in 2000: investigating a small patch of glyphosate-resistant horseweed/marestail.

Subsequently, resistance of horseweed to glyphosate has been confirmed in 20 states (Heap, I., 2012). In addition to horseweed, there are many other important winter annual weeds, such as annual bluegrass (*Poa annua*), Italian ryegrass (*Lolium multiflorum*), chickweed (*Stellaria media*), henbit (*Lamium amplexicaule*) and shephardspurse (*Capsella bursa-pastoris*), that can become established before crop planting. There are alternative herbicides to glyphosate that provide excellent control and maintain the diversity of modes of action needed to delay the onset of resistance. In particular, Gramoxone SL is very active against these weeds and others (Anon, 2011) and is the ideal burndown partner for mixture with other herbicides, such as 2,4-D, dicamba or Sharpen, that have alternative modes of action. Where a cover crop such as wheat has been planted, an application of Gramoxone SL will provide rapid burndown in preparation for timely crop planting.

Mississippi County, AR. Annual Bluegrass, Cover Crop Wheat, Henbit Control – 6 DAT

The starting point for herbicide resistance management is a clean seed bed and, where appropriate, the use of residual herbicides to control weeds that germinate with the crop is important to avoid competition (available at HRACglobal.com). Tank mixture of Gramoxone® SL with products such as Boundary® in cotton and soybeans, Prefix® in soybeans and Lumax® or Lexar® in corn will provide both enhanced burndown activity and residual control of germinating weeds, including glyphosate-resistant pigweeds (*Amaranthus spp*) with up to a total of 4 different modes of action applied. Recent research at Mississippi State University also demonstrated the excellent residual control of fall-germinating glyphosate-resistant Italian ryegrass (*Lolium multiflorum*) with a fall application of Boundary followed by Gramoxone SL where needed (Eubank et al., 2012).

As glyphosate-resistance becomes more prevalent and resistance to other herbicides increases, there is more pressure on growers to use tillage and abandon the soil conservation practices that are so crucial to environmental stewardship (CAST, 2012). It is time to consider alternative burndown herbicides, such as Gramoxone SL, to allow these practices to continue.

Sources:

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