

agKnowledge Newsletter

The lay of the land from a trusted source.

Current News and Updates

We know that 2013 is shaping up to be far from normal, and yet we still like to look at the normal data and averages. We don't know what the weather will be like for the rest of the season and we may not know for weeks the outcome of the early-season decisions made now. However, there are several things, like scouting, that we can control. The past has shown that we are better off scouting early and often to enable good management decision-making through the growing season. Some of the first things we want to scout for are germination, emergence, and any early-season diseases. We tend to focus the most on corn, but let's not forget to scout other crops like soybean, sugar beet, alfalfa, and wheat. In this newsletter we want to emphasize early-season diseases, such as *Phytophthora* and *Pythium* root rots. We should also focus on weed control. In years like this it is easy to skip a few things to get the crop in the ground. However, we have to deal with weeds for the balance of the growing season so let's make sure we do the "right thing" - even when planting is being pushed into a few less days. As you get this newsletter, it will be time to evaluate alfalfa stands for growth and root injury. Alfalfa winter injuries look to be more of a challenge this year across the entire growing area. Finally, we want to remind you about our two main websites: asgrowanddekab.com and aganytime.com. These are great sources for timely and up-to-date agronomic information. Always feel free to call your Dealer or DSM for additional agronomic or product information.

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**Minnesota &
Wisconsin**

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AsgrowandDEKALB.com

Please contact your local agronomist for more information



Early Season Diseases

Cool, wet soil conditions can predispose plants to disease by delaying corn and soybean germination and slowing alfalfa plant growth. Scouting your fields and identifying the diseases present can help determine control measures and plan for the future.

Corn seedling disease symptoms are caused by several fungi and may look similar to other environmental stresses, insect feeding, or herbicide damage. Seedling disease can occur in the form of seed rots, seedling blights, and root rots. If the root system is damaged, slow emergence, stunted or purple plants, and stand loss can occur. Wet soils are particularly favorable for infection by the fungus *Pythium*. *Pythium* can rot the seed prior to germination or rot the mesocotyl tissue of the seedling after emergence (Figure 1). *Pythium* infection of roots often results in the cortex becoming rotted, while initially, the stele remains white. *Fusarium* infected plants can have tan-to-reddish brown lesions and the root or mesocotyl may shrivel.

Soybeans are also susceptible to infection by *Pythium*. Symptoms of *Pythium* infection include lesions on cotyledons and hypocotyls (Figure 2). Severe infection can lead to chlorosis, stunting, and wilting of plants. Infection is often seen in wet, low-lying areas. The fungus *Phytophthora* causes similar symptoms on soybean. Early symptoms include seed rot and pre- and post-emergence damping-off. Infected seedlings turn brown, wilt, and die (Figure 3.)



Figure 1. *Pythium* seedling blight of corn. Photo courtesy of William M. Brown Jr., Colorado State University, Bugwood.org.



Figure 2. *Pythium* seedling blight of soybean.

Weed Management Following a Wet Spring

The wet spring has delayed field work, perhaps causing growers to rethink their burndown and early season weed control. Two key components of weed control for corn and soybean fields include successfully removing existing weeds and providing residual weed control.

Start Clean. Use tillage just before planting or a burndown herbicide a couple of weeks prior to planting to allow for decomposition of the plant material. Planting into existing weeds, or heavy weed residue that has not had time to decay, can interfere with seed placement and reduce emergence due to poor seed-to-soil contact. If the burndown is delayed, planters should be adjusted to compensate for the increased residue. Add ammonium sulfate (AMS) to the spray tank (8.5 to 17 lbs./100 gallons of spray solution) prior to adding a Roundup® brand agricultural herbicide to bind with hard water ions and enhance absorption. Because of the weather this spring, burndown applications may fall closer to planting than usual. Make sure to consider plant back restrictions for common tank mix partners, such as 2,4-D, in both corn and soybeans.

Stay Clean. Using a residual herbicide is an important step in successful weed management. TripleFLEX® Herbicide may be applied early postemergence to corn up to 11 inches tall. Applications can be made prior to weed emergence up to 1- to 2-inch weeds. Warrant® Herbicide should be applied before weed emergence. Weeds that are emerged at the time of application will not be controlled by this product.

Warrant Herbicide can be applied in corn from seedling emergence until corn reaches 30 inches in height. Drop nozzles are recommended for optimum spray coverage when corn is 24 to 30 inches tall.

When used in soybean, the optimum timing and rate of application for Warrant® Herbicide is when soybeans are at V2 to V3 at 1.5 qts/A. Directed applications may be used after soybean growth stage V5. Applications must be made before soybeans reach growth stage R2.

When used in either corn or soybean, TripleFLEX® Herbicide and Warrant® Herbicide may be tank mixed with other herbicides labeled for the specific crop. Reasons for using other herbicides in a tank mix with these products include the presences of large seeded broadleaf weeds, triazine resistant weeds, or emerged weeds.

Herbicide Rate. Selecting the right rate for each situation is important. Application rates of Roundup WeatherMAX® depends on the height of the weeds and on the carrier used (water vs. 28% UAN). The maximum application rate for Roundup WeatherMAX® in corn is 32 fl. oz/A per application. The total of all in-crop applications from emergence through 48-inch corn and from cracking through R2 stage soybean should not exceed 64 fl oz/A.

Always read and follow pesticide label directions.

Table 1. Weed management options in Roundup Ready® Corn 2 or corn with Roundup Ready® 2 Technology and Genuity® Roundup Ready 2 Yield® and Roundup Ready® Soybeans.

Practice	Crop	Products	Comments
Burndown	Corn	Roundup WeatherMAX® + 2,4-D or dicamba	Residual herbicides can be used
	Soybean	Roundup WeatherMAX® + 2,4-D or dicamba	
Preplant or Preemergence	Corn	Roundup WeatherMAX® + Harness® Brands, Degree Xtra® or TripleFLEX® Herbicide	Use full label rates of herbicides Choose PRE herbicides based on technical fit Using a residual herbicide has shown an increase in yield opportunity
	Soybean	Roundup WeatherMAX + Warrant® Herbicide, Valor® Brands, or Authority® Brands	
Postemergence	Corn	Roundup WeatherMAX®	Before weeds exceed 4 inches Tank mix with Status®, Impact® or Resource® for tough broadleaf weeds
	Soybean	Roundup WeatherMAX®	Before weeds exceed 4 inches Tank mix with Warrant® Herbicide for additional weed control

Early Season Diseases (cont. from p 1)

Phytophthora can also infect alfalfa, causing root rot on both seedlings and older plants (Figure 4). *Phytophthora* root rot is most common on heavy or poorly drained soils and under wet conditions. Reports of root rot caused by *Aphanomyces* have become more common in Wisconsin and Minnesota in past years.¹ Infected seedlings may damp-off; older seedlings may become yellow and stunted. When this fungus occurs with *Phytophthora*, root rot symptoms can be more severe. Brown Root rot of alfalfa was reported for the first time in Wisconsin and Minnesota in 2003.¹ This disease progresses slowly and symptoms are more common in 2 to 3 year old stands than younger stands. This disease causes lesions on tap roots. Plants may grow this spring, then die because the tap root is rotted off.



Figure 3. *Phytophthora* root rot of soybean.



Figure 4. *Phytophthora* root rot of alfalfa. Photo courtesy of Dept. of Plant Pathology Archive, North Carolina State University. Bugwood.org.

Sources:

¹ Isleib, J. 2011. Be familiar with root rot diseases of alfalfa. Michigan State University Extension. Online: <http://msue.anr.msu.edu> (verified 4/29/13); Compendium of Corn Diseases. APS Press; Compendium of Soybean Diseases. APS Press.

Monitoring Insect Pests

A late planting season and wet spring has many growers wondering how insect pests may affect corn and alfalfa crops as the growing-season progresses. Several sources are available to help monitor insect pests.

Corn. Fields with delayed weed control measures and delayed planting are more at risk for black cutworm (BCW) injury. The risk increases if dense populations of winter annual weeds were present in the field. While problems with BCW tend to occur more often in no-till than conventional tillage fields, tillage right before planting will not control larvae that are already present. Late planting can also increase the risk of problems with second generation European corn borers.¹ Due to planting delays, corn may reach pollination at a later date than normal, which may mean hotter and/or drier conditions at pollination. Insects such as corn leaf aphids and fall armyworms move into the upper Midwest each year. These insect populations may reach economic densities just

as stressful environmental conditions occur. Knowing the insect protection package you have planted (Table 2) and scouting fields regularly can help make treatment decisions this season.

Alfalfa. May is an active month for alfalfa weevils with egg lay occurring early in the month and peak larval feeding in late May. Problems may occur if alfalfa weevil is causing defoliation and alfalfa fields remain too wet to cut.²

Insect Monitoring Sites. Websites are available that monitor current weather conditions and forecast insect activity. The University of Wisconsin Extension has a website available at <http://www.soils.wisc.edu>, which provides thermal models for several insect pests including alfalfa weevil, European corn borer, and stalk borer. These models predict insect activity based on specific degree-day calculations. The website <http://www.insectforecast.com> monitors weather patterns to predict the migration patterns of corn earworm and western

bean cutworm, and tracks growing degree days to predict corn rootworm activity. You can sign up to receive updates and information via email from this site.

Table 2. Below and above ground insect protection with Genuity® RIB Complete® corn blends.

Primary pests	Genuity® SmartStax RIB Complete®	Genuity® VT Triple PRO® RIB Complete®	Genuity® VT Double PRO® RIB Complete®
European Corn Borer	***	**	**
Southwestern Corn Borer	***	**	**
Northern Corn Rootworm	**	*	
Western Corn Rootworm	**	*	
Corn Earworm	**	**	**
Fall Armyworm	***	**	**
Western Bean Cutworm	*		
Black Cutworm	*		

Trait mode of Action (MOA) = control of pest; * = single mode-activity, ** = dual mode-activity, *** = triple mode-activity.

Sources:

¹ Gray, M. May 13, 2011. Late planting's impact on corn and soybean insects. The Bulletin. University of Illinois. Online: <http://bulletin.ipm.edu> (verified 4/29/13); ² Hammond, R. et al. 2011. Current insect conditions and late planting concerns. C.O.R.N. Newsletter. The Ohio State University. Online: <http://corn.osu.edu> (verified 4/29/13).




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Crop Information Anytime at agAnytime

The agAnytime website provides relevant and timely crop information with agALERTS and agSpotlights for your area. You can also access other tools such as agSeedSelect™, online seed resource guides, and yield information. Links to information on product stewardship and programs such as

Roundup Ready PLUS® Weed management solutions are also available. New Asgrow® and DEKALB® apps for mobile devices, called agTools, are available to download. To discover all of the agronomic information and tools available to you, please go to <http://www.aganytime.com>.

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