

BURNDOWN APPLICATIONS AND SOYBEAN PLANTING

Weed control is an integral step toward maximizing soybean yield potential. Soybean yield potential can be reduced because weeds compete with soybean plants for nutrients, water, and light.¹ During early soybean growth, soybean plants and weeds can survive together without much, if any, reduction in yield potential; however, competition can soon develop and become a detriment.

Weed control should not be a one-time event. Weed control activity can begin in the fall after harvest to control emerging winter annuals, in the spring as a preplant burndown or tillage operation, at planting, and during the growing season.

Successful spring burndown herbicide applications can provide control of winter annual, summer annual, and perennial weeds and are important in reduced-till and no-till systems.

The benefits of weed removal prior to planting include:

- A clean seedbed for earlier planting
- Removal of undesired growth that can inhibit uniform seed placement
- Help control weeds that are present prior to planting, as these weeds can become the most competitive with soybean plants as they have a head start on establishment
- Contribute to the management of difficult-to-control weeds
- Remove weeds that are hosts for diseases and insects
- Provide an opportunity to use alternate mode-of-action herbicides for weed resistance management.

Spring burndown applications should be timely regarding weed growth and applied as soon as possible to help optimize weed control. Understandably, wet field conditions can cause delays in burndown applications. However, diligence is important as weeds greater than 4 inches in height can become increasingly difficult to control and as weed heights increase, herbicide rates may need to increase, which can increase overall weed control costs. Additionally, densely populated weeds with overlapping foliage may prevent herbicide penetration into the canopy for adequate control. Regardless of application timing, tank mixtures and residual herbicides should be used to provide different mode-of-action weed control to help reduce the potential for weed resistance development.

Herbicide labels **MUST** be reviewed to determine if state or geographical restrictions apply, planting interval restrictions exist, and/or if there is any potential for crop injury. Please read and follow all label requirements and restrictions.



Figure 1. Seedling lambsquarter in residue.

Herbicides with residual activity are essential for soybean weed management systems. Incorporating residual herbicides in a burndown application can help control early-emerging, competitive, and tough-to-control weeds so post-emergence herbicide applications can be made when weeds are small and weed populations are less dense. University research has demonstrated that weeds emerging with the crop may start to impact soybean yields as early as the V2 or V3 stage of development and can cause a 1%/day yield loss for each day weeds continue to compete.²

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Herbicide applications should be determined by field scouting before and after applications to help:

- Determine the herbicides needed to control the weeds present
- Determine the weed sizes to make a properly timed application and the rate required
- Determine the effectiveness of an application
- Determine the timing, rates, and herbicides needed for in-crop applications.

Depending on geography, Bayer Crop Science burndown herbicide products to consider are:

- Roundup WeatherMAX® herbicide or Roundup PowerMAX® herbicide along with 2,4-D ester or dicamba and a residual herbicide such as Warrant® Herbicide. Please visit <https://www.roundupreadyxtend.com/Pages/Spray-Early.aspx> for burndown information.
- XtendiMax® herbicide with VaporGrip® Technology, a restricted use pesticide, along with Roundup WeatherMAX herbicide or Roundup PowerMAX herbicide and a residual herbicide such as Warrant Herbicide. Please visit <http://www.xtendimaxapplicationrequirements.com/Pages/default.aspx> for important XtendiMax with VaporGrip Technology information.
- If Amaranthus species or PPO-resistant species are present, the addition of a metribuzin herbicide to the tank mix is recommended.

Environmental conditions can affect the rate of weed growth, crop development, crop tolerance to herbicides, and herbicide performance. The efficacy of a burndown herbicide application can be reduced by cold temperatures; therefore, it is recommended to wait on applying herbicides until nighttime temperatures are above 40° F and daytime temperatures are at least into the 50s.³

Additional information for burndown applications can be found at <https://www.roundupreadyxtend.com/Pages/Spray-Early.aspx>.

Sources:

¹ Pedersen, P. 2006. Soybean does not handle early season weed competition. Integrated Crop Management. Iowa State University. <https://crops.extension.iastate.edu/>.

² Hartzler, B. 2003. Is your weed management program reducing your economic return? Weed Science. Iowa State University. <http://extension.agron.iastate.edu/>.

³ Hartzler, B. 2016. Cold temperatures and burndown herbicides. Integrated Crop News. Iowa State University Extension and Outreach. <https://crops.extension.iastate.edu/>.

Web sites verified 3/5/20.

Legal Statements

XtendiMax® herbicide with VaporGrip® Technology is part of the Roundup Ready® Xtend Crop System and is a restricted use pesticide. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. It is a violation of federal and state law to use any pesticide product other than in accordance with its labeling. XtendiMax® herbicide with VaporGrip® Technology may not be approved in all states and may be subject to use restrictions in some states. Check with your local product dealer or representative or U.S. EPA and your state pesticide regulatory agency for the product registration status and additional restrictions in your state. For approved tank-mix products and nozzles visit XtendiMaxApplicationRequirements.com.

Roundup Technology® includes glyphosate-based herbicide technologies.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

Not all products are registered in all states and may be subject to use restrictions. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local dealer or representative for the product registration status in your state. Tank mixtures: The applicable labeling for each product must be in the possession of the user at the time of application. Follow applicable use instructions, including application rates, precautions and restrictions of each product used in the tank mixture. Not all tank mix product formulations have been tested for compatibility or performance other than specifically listed by brand name. Always predetermine the compatibility of tank mixtures by mixing small proportional quantities in advance. Bayer, Bayer Cross, Roundup PowerMAX®, Roundup Technology®, Roundup WeatherMAX®, VaporGrip®, Warrant® and XtendiMax® are registered trademarks of Bayer Group. ©2020 Bayer Group. All rights reserved. 2004_S5