

**LIBERTY
LINK** 

**The Most Reliable Solution
to manage glyphosate-resistant weeds**



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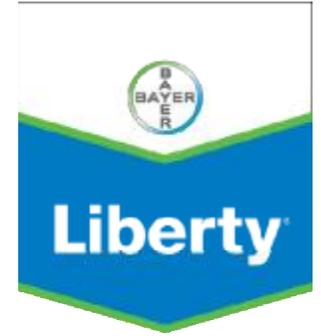
LibertyLink System

Liberty[®]

+

LIBERTY
LINK[®] 

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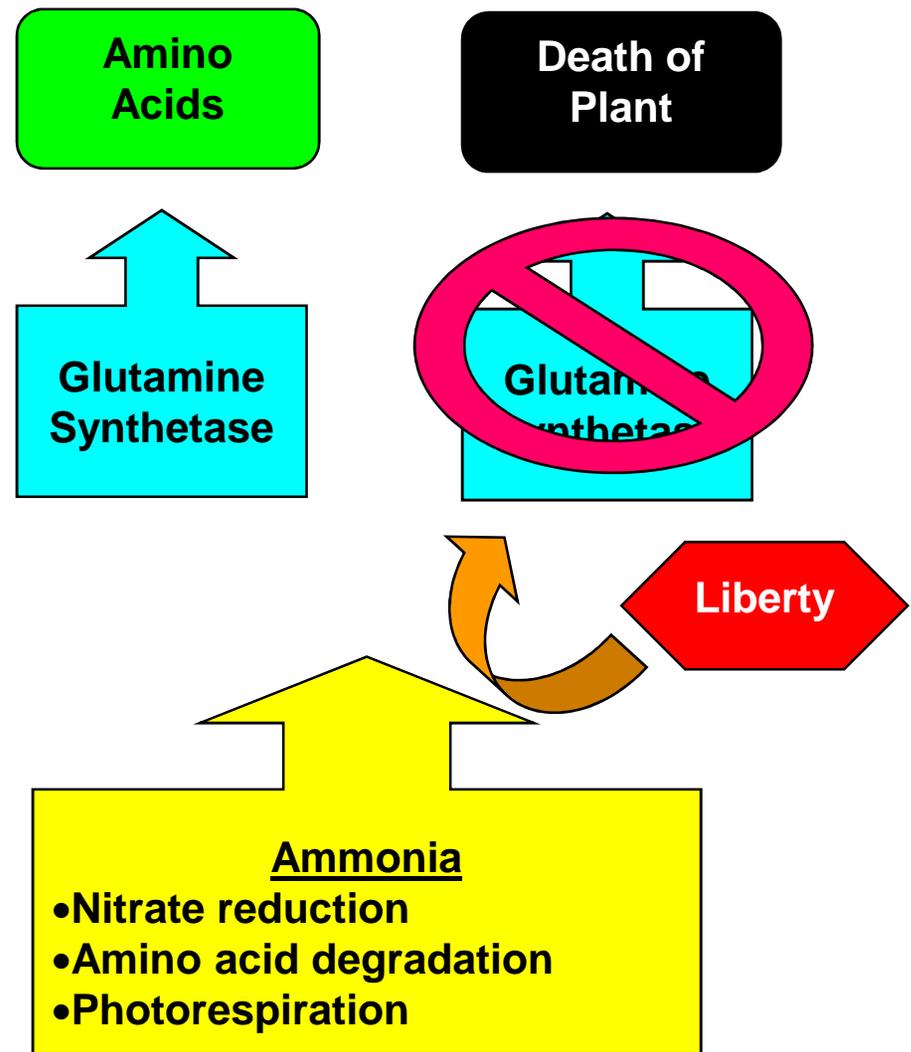
Liberty Formulation

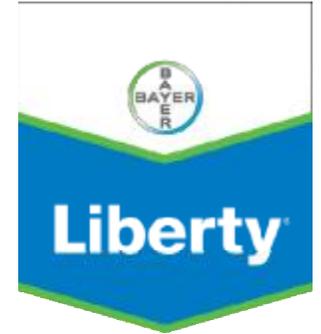
- Active ingredient: glufosinate-ammonium
- Formulation: 2.34 lbs a.i./gal
- Inhibits enzyme glutamine synthetase in plants
- Disrupts photosynthesis
- Highly biodegradable
- Very low toxicity



Glufosinate-Ammonium Mode of Action

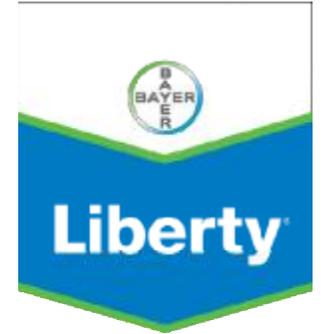
- Nonselective herbicide
- Inhibits glutamine synthetase
- Accumulation of ammonia is toxic to plants





Liberty

- Liberty herbicide is a nonselective, contact herbicide that provides postemergent control of more than 120 broadleaf weeds and grasses, including ALS- and glyphosate-resistant weeds.
- Foliar-active – thorough spray coverage is necessary for maximum performance
- No soil-residual activity
- Apply to actively growing weeds



Application Recommendations

Coverage is key for maximum weed control

Aerial – 10 GPA minimum

Ground – 15 GPA minimum

Flat-fan or Turbo TeeJet nozzles are recommended

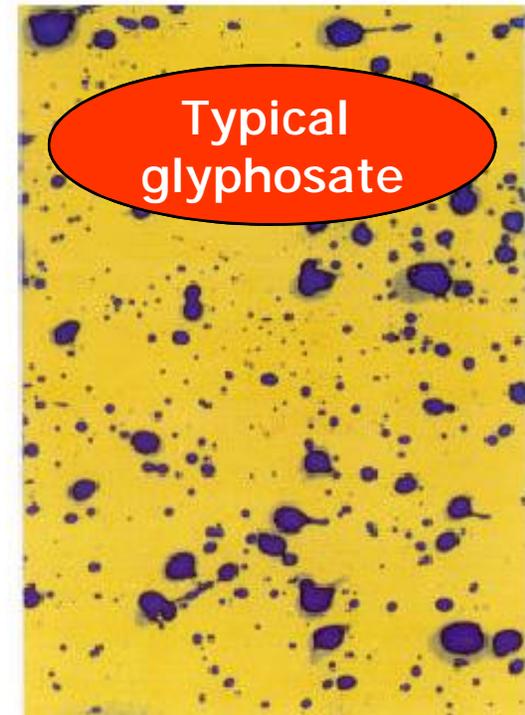
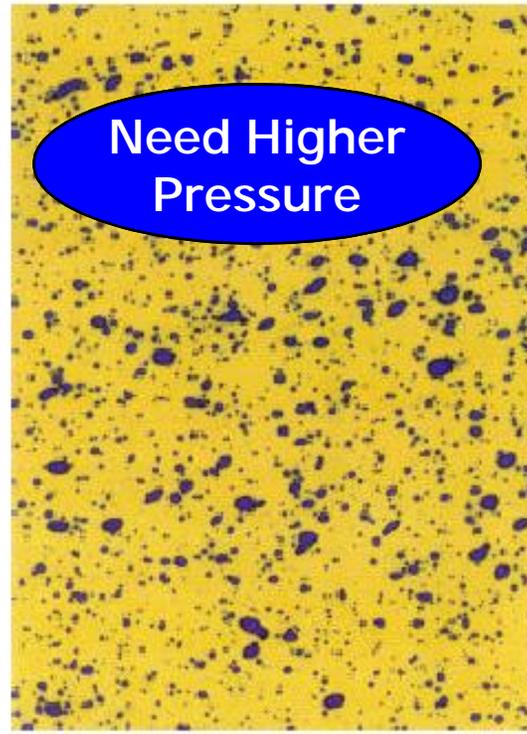
Apply to ***actively growing weeds***

Liberty[®] Spray Coverage is Key

15 GPA by ground, 10 GPA by air

Nozzle Spray Patterns

Get the best coverage



**sprayer set-up that will achieve
medium spray droplets (~300 μ VMD)**



TurboDrop® Asymmetric Dual Fan Nozzle (TADF)

PART NUMBERS

TADF01
TADF015
TADF02
TADF025
TADF03
TADF04
TADF05
TADF06
TADF08
TADF10



Weed Spectrum

Key broadleaf weeds



Pigweed species

Sicklepod

Cocklebur, common

Prickly Sida

Black Nightshade

Cutleaf Evening Primrose

Smartweed

Morningglory species

Sunflower

Hemp Sesbania

Volunteer Roundup

Ready[®] Soybeans

Florida Beggarweed

Carolina Geranium

Weed Spectrum

Key grass weeds

Barnyardgrass

Crabgrass

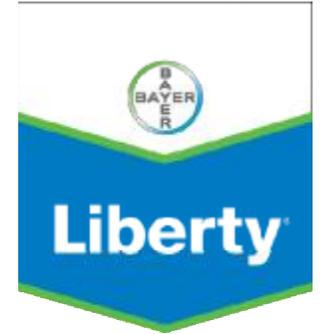
Johnsongrass

Texas Panicum

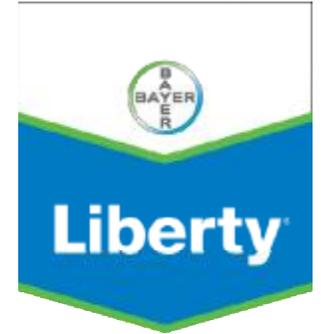
Watergrass

Volunteer Roundup

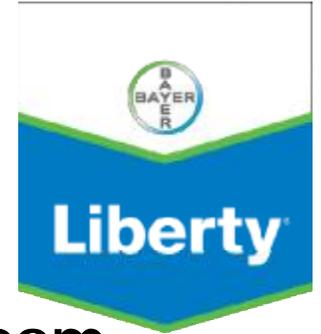
Ready[®] Corn



Adjuvant



The addition of AMS or AMS containing additives at labeled rates may increase herbicide efficacy on some weed species under conditions such as drought stress, low water pH, hard water conditions or arid conditions.



Application Information - Cotton

Apply to cotton from emergence up to the early bloom stage.

Apply 29 oz/ac

Up to three applications may be made at a maximum application rate of 29 oz/ac for a seasonal total of 87 oz/ac.

A single application of up to 43 oz/ac may be made.

If more than 29 oz/ac are used in any single application, the seasonal total may not exceed 72 oz/ac.

Start Clean, Stay Clean

Overlay residual herbicides



LibertyLink Cotton



Ignite 29 OZ/A fb Ignite 29 OZ/A



Cotoran at 1.5 PT/A PRE
Ignite 29 OZ/A fb Ignite 29 OZ/A

- Start clean
- Apply residual herbicide preplant/preemergence
- TIMING is critical!
- Tank-mix Dual Magnum with Ignite
- Utilize residual herbicide at layby timing
- Liberty alone does not cure the problem



Liberty in LibertyLink Cotton

§ General guidelines:

- § Burndown program should include residual herbicides effective against pigweed and other weeds
- § Use preplant or preemergence herbicides such as Reflex[®] (preplant) or Cotoran[®], Caparol[®], or Direx[®] (preemergence)

§ LibertyLink Cotton:

- § First app: Liberty 29 oz/A + Dual[®], 10-14 days after cotton emergence (3-4 lf) (before weeds exceed labeled height)
 - use Liberty at higher rate if weeds in excess of 4"
- § Second app: Liberty 29 oz/A, 10-14 days after first POST treatment (8-10 lf) (before weeds exceed labeled height), add Dual[®] to over-lap residuals, especially if first application is not activated or high weed pressure
- § Liberty 29 oz/A, third application to new weed emergence (if necessary)
- § Layby with Valor[®] or Direx[®] + MSMA (Do not use glyphosate or Liberty)

Environmental Effects on Liberty[®] Activity

- § **Herbicidal activity increases with increasing temperature, relative humidity, sunlight and soil moisture.**
- § **Relative humidity greater than 30% extends drying period and leads to better uptake through cuticle.**
 - Low relative humidity is rarely a problem in the mid-south.**
- § **Temperatures greater than 70° F will improve performance with Liberty.**
 - Low temperatures are rarely a problem for in-season applications in LibertyLink crops.**

Environmental Effects on Liberty[®] Activity (continued)

§ Label notes:

§ Rainfall within 4 hours may necessitate re-treatment or may result in reduced weed control.

§ Weed control may be reduced if application is made when heavy dew, fog and mist/rain are present; or when weeds are under stress due to environmental conditions such as drought, cool temperatures or periods of extended cloudiness.

§ To maximize weed control, do not cultivate from 5 days before an application to 7 days after an application.

GLyTOL[®] LIBERTY LINK[®] COTTON

- Full tolerance to glyphosate and Liberty (glufosinate-ammonium) applied solo or in sequential applications (L/G/L/G or G/L/G/L)
- Multiple application timings evaluated
2-4 lf, 6-8 lf, lay-by (early bloom), pre harvest (0-10% open bolls)
- Tested with a wide range of glyphosate formulations
- Tank-mix application with BCS portfolio and common partners possible



▶ Full tolerance to Glyphosate and Liberty and full flexibility for weed management



What is TwinLink™?

- Stacked *Bt* gene product
 - Cry 1Ab + Cry 2Ae
 - Each Cry event has Bar gene
 - Tolerant to commercial rate of glufosinate ammonium
- Field trials began in 2007 in Coker background
 - Agronomic performance with emphasis on effects to genetic background
 - Pest spectrum & efficacy
 - Seasonal patterns of expression
 - IRM fit
- Initial testing of elite germplasm lines in 2010.
- Performance reported at the Beltwide in 2010 & 2011

2012 NEW LLB2 Variety

BX 1254LLB2 is now ST 5445LLB2 - NEW!!

Agronomic Info:



- Medium Maturity (Between ST 4145LLB2 and FM 1845LLB2)
- Excellent Yield Potential
- Average Fiber Quality
- Preferred Placement- Irrigated Light to Mixed soils



2012 NEW GLB2 Variety

BX 1244GLB2 is now FM 1944GLB2 – NEW!!

Agronomic Info



- Early-Mid Maturity
- Improved yield and fiber quality over FM 1740B2F.
- Equal to improved performance over ST 4145LLB2.
- Complete tolerance to 2 non-selective herbicides.
- Glytol gives freedom of Glyphosate choice.
- Bollgard II offers superior bollworm control to other available dual Bt gene.
- Preferred placement (Irrigated; Light to Mixed soils), Similar to FM 1740B2F.



2012 BCS Cotton Variety Lineup

Stoneville and FiberMax Brands



Bollgard II Flex (B2F)

- ST 5288B2F
- ST 5458B2RF
- ST 4288B2F
- FM 1740B2F

LibertyLink Bollgard II (LLB2)

- ST 4145LLB2
- ST 5445LLB2 – **NEW!!**
- FM 1845LLB2
- FM 1773LLB2

Glytol+LibertyLink Bollgard II (B2F)

- FM 1944GLB2 – **NEW!!**



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