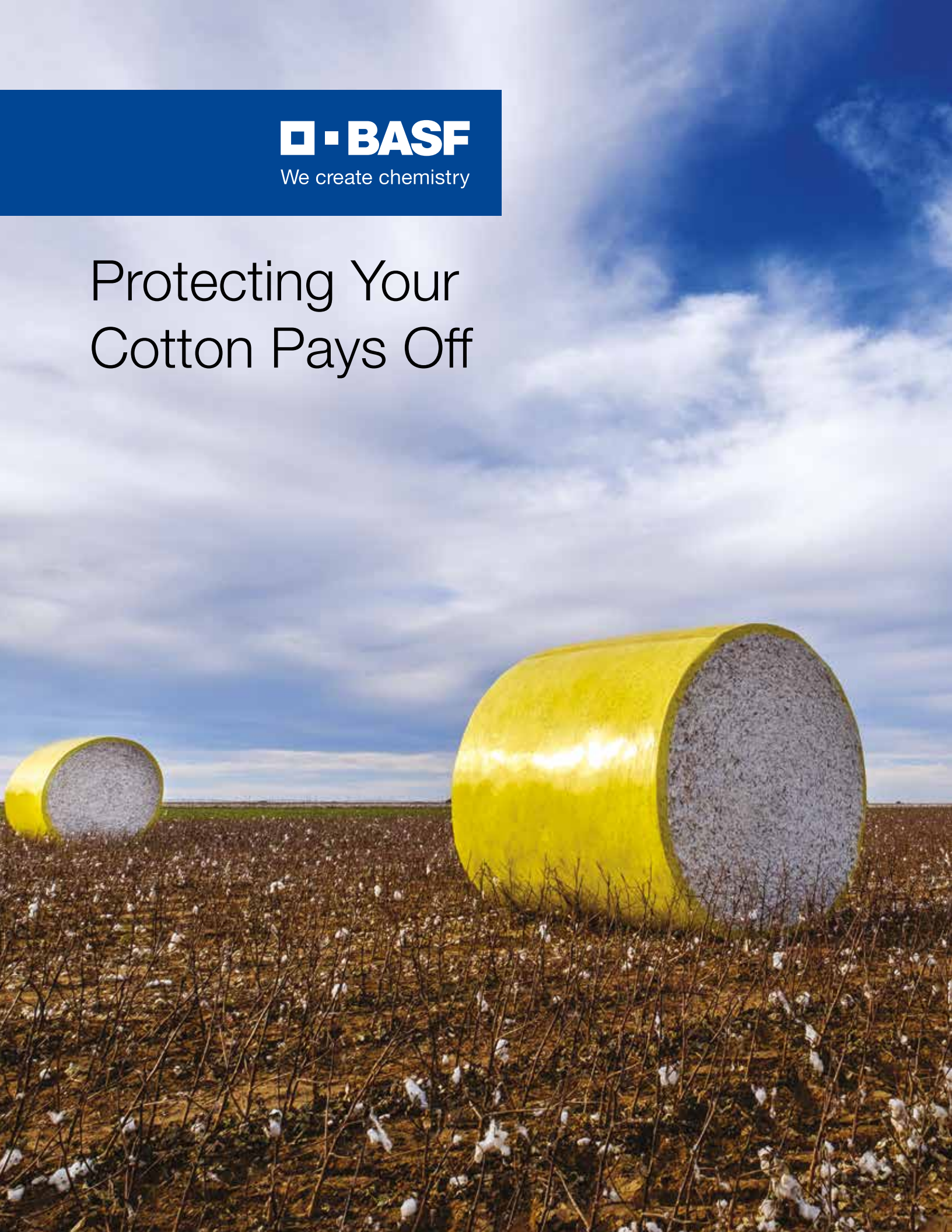
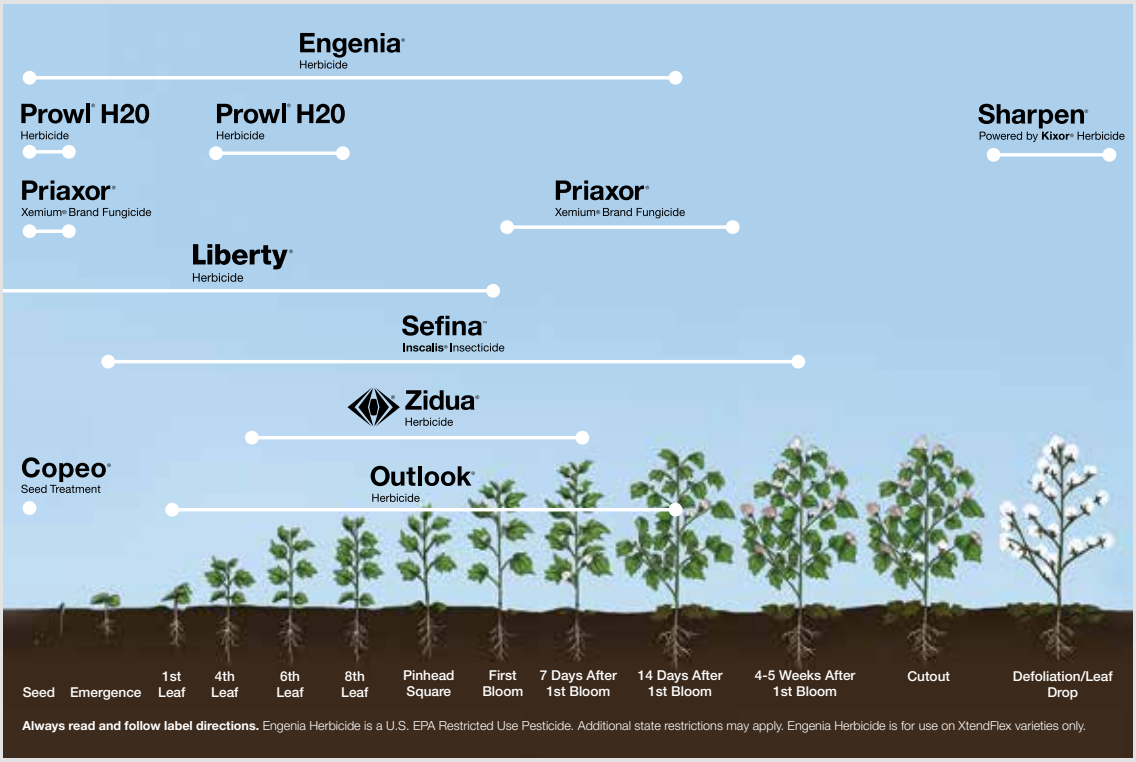
BASF
We create chemistry

Protecting Your Cotton Pays Off



Plan your cotton crop protection.



Always read and follow label directions. Engenia Herbicide is a U.S. EPA Restricted Use Pesticide. Additional state restrictions may apply. Engenia Herbicide is for use on XtendFlex varieties only.

Seed Treatment

Copeo®
Seed Treatment

Protection right out of the chute.

BASF is offering one seed treatment package to ensure growers have a strong start out of the ground and receive the best performance from FiberMax® and Stoneville® cotton seed. The package offers protection against key early-season seed and seedling diseases and damage caused by early-season insects. The package features Stamina® fungicide seed treatment for cotton for increased cold tolerance, more rapid emergence and improved vigor and Copeo seed treatment for proven protection against nematodes.

BASF Sponsored Trial, Belle Mina, AL, 2019.

BASF Sponsored Trial, Leachville, AR, 2017.

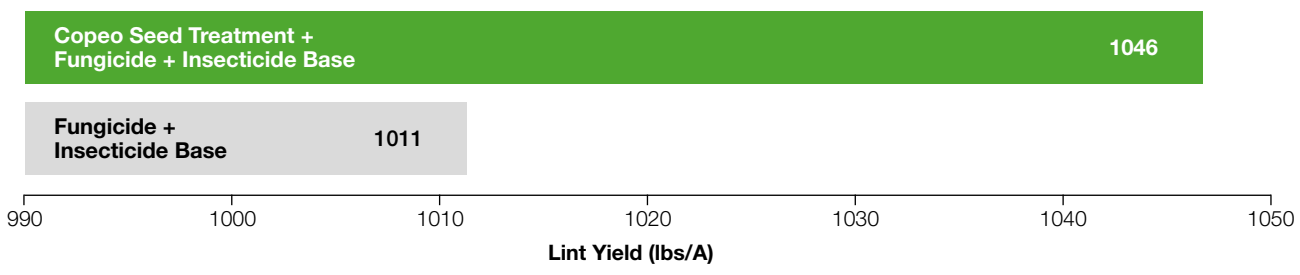
PROTECTS COTTON ROOTS
from economically significant nematodes, including reniform and root-knot nematodes

CONTRIBUTES TO INCREASED GROWTH
and vigor under nematode pressure

SUPPORTS HEALTHIER PLANTS
and roots for higher yield potential

Copeo seed treatment is a premier seed treatment for cotton that contributes to higher yields under nematode pressure, bringing a unique mode of action to the cotton nematicide seed treatment market. It's exclusively available on Stoneville and FiberMax cotton seed.

ACHIEVES HIGHER YIELD BY PROTECTING AGAINST NEMATODES



116 Comparisons Across All Regions

Herbicide

Prowl® H20

Herbicide

The starting point for weed control.

RELIABLE PERFORMANCE AND SCHEDULE FLEXIBILITY
with sunlight stable capsules that activate with as little as 1/4" of rain weeks after application

CONTROLS MORE THAN 70 IMPORTANT GRASS AND BROADLEAF WEEDS

PROVIDES RESIDUAL CONTROL
of both glyphosate and ALS-resistant Palmer amaranth

WATER-BASED ENCAPSULATION
easily washes off residue to control germinating weeds

IMPROVED SOIL SURFACE STABILITY
leads to confidence in dry conditions, and effective weed control in wet conditions

BASF Sponsored Trial, Applied 3 weeks prior to planting. Lubbock, TX, 2015.

Provides residual control of many weeds in cotton:

- Palmer amaranth
- Pigweed spp.
- Lambsquarters
- Carpetweed
- Kochia
- Barnyardgrass
- Crabgrass
- Texas panicum
- Foxtail spp.
- Sandbur, field

Use Methods and Timing

- Preplant surface
  – Apply within 15 days of planting
- Preplant incorporated
  – Apply within 60 days of planting and incorporate
- Preemergence
  – Apply at planting or up to 2 days after planting
- Layby application (at last cultivation)
  – Apply directly to the soil between rows as a directed spray following the last normal cultivation
- Postemergence (4-8 leaf cotton)
  – Apply from 4-8 leaf cotton
  – Tank-mix with a postemergence herbicide for control of emerged weeds

Herbicide

Liberty®
Herbicide

Liberty herbicide delivers superior weed control.

98 PERCENT CONTROL OF KEY WEEDS*
like Palmer amaranth, waterhemp, kochia, ragweed and marestail, including those that have become resistant to other herbicides

NO KNOWN RESISTANCE
in U.S. row crops and effective control of grasses and broadleaf weeds, a combination no other active ingredient can match

FLEXIBILITY AND CONVENIENCE
with easier application requirements and fewer restrictions, so Liberty herbicide is more convenient to use

*Based on company field trials. 2014-2018. Protocol included a pre-emergence herbicide followed by Liberty 280 at 32 oz/A.

Weeds Included: Velvetleaf, Palmer amaranth, redroot pigweed, common waterhemp, common ragweed, lambsquarters, large crabgrass, barnyard grass, annual grass, morning glory, fall panicum, giant foxtail.

BASF Sponsored Trial, Lubbock, TX, July 22, 2018.

Liberty herbicide program for cotton.

Program	Preemergence Residual	First Post Application	Second Post Application (as needed)	Third Post Application (as needed)	Seasonal Maximum Rate
Guidelines	Preplant incorporated at planting	Weeds < 3" Use a residual tank-mix	Min 10 days after first application Use a residual tank-mix	—	—
Recommended	Prowl® H2O herbicide	Liberty herbicide 32-43 fl oz/A + Outlook® herbicide	Liberty herbicide 29 fl oz/A + residual	—	72 fl oz/A**
Alternative	Use preemergence residuals	Liberty herbicide 29 fl oz/A + Outlook herbicide	Liberty herbicide 29 fl oz/A + residual	Liberty herbicide 29 fl oz/A + residual	87 fl oz/A

**If more than 29 fl oz/A used in one application.

Herbicide

Outlook®

Herbicide

The do-it-all postemergence herbicide.

CONSISTENT PERFORMANCE

- Most reliable activation with just 1/4" of rain or irrigation
- Readily washes off crop foliage and soil residue to where weeds germinate

BROAD-SPECTRUM RESIDUAL WEED CONTROL

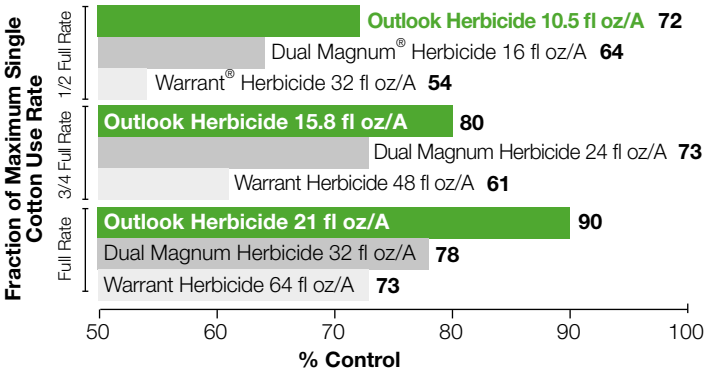
- Annual grasses and small-seed broadleaf weeds — including glyphosate-resistant waterhemp and Palmer amaranth
- Effective resistant weed management

FLEXIBLE USE FOR OPERATIONAL EFFICIENCY

- Postemergence: First true leaf to mid-bloom stage
- Low use rate for easy handling
- Compatible with post tank-mix partners to meet field-specific weed control needs

MULTI-PURPOSE

- Reliable activation: less water for activation means best option for either dryland/non-irrigated or irrigated cotton
- Multi-crop flexibility for use in corn, soybeans, grain sorghum, cotton, peanuts and others



Amaranthus spp. control – 4 to 6 weeks after treatment on bare ground. Average of internal and BASF sponsored research trials (2017). N=5.

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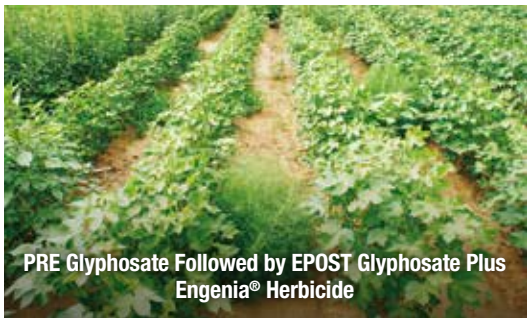

BASF Sponsored Trial, Halfway, TX, 2014.

Herbicide

Zidua® SC
Herbicide

The standard for residual control in cotton.

LONGER LASTING
Up to two weeks longer residual weed control than other herbicides

FLEXIBILITY
Low use rate with as little as 1/20 the use rate of other residual herbicides
Can be applied postemergence-directed (layby) or by a postemergence application via dry bulk fertilizer

BROAD-SPECTRUM GRASS AND BROADLEAF WEED CONTROL
Superior Palmer amaranth and waterhemp control

Cotton weed control – Palmer amaranth

BASF Sponsored Trial, 2016. Texas A&M University, Lubbock, TX. Planting date: 5/24. Early POST: 6/13. Mid-POST: 7/15. Layby: 8/5. Photos taken: 9/16.
[1] Roundup PowerMAX 32 fl oz/A applied 6/13 and 7/15.
[2] A layered residual program with Dual Magnum 21 fl oz/A, Liberty® 32 fl oz/A, COC 1% applied 6/13. Liberty 32 fl oz/A, COC 1% applied 7/15.
[3] A layered residual program with Zidua WG herbicide 2.5 oz/A (Zidua SC herbicide equivalent = 4 fl oz/A), Liberty 32 fl oz/A, 1% COC applied layby, 8/5.

Best Use Recommendations

Cotton Use Rate: 1.25-3.5 fl oz/A

Application Timing for Cotton: Postemergence-directed (layby) spray or postemergence over-the-top via dry bulk fertilizer; both at 5-leaf to beginning bloom stage

PHI: There is no required Pre-harvest interval between a Zidua herbicide post application and cotton harvest

General Information:

Tank-mix order: Always follow mixing instructions on the product label. Include Zidua SC herbicide before adding soluble liquids like glyphosate and Engenia® herbicide.*

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Additional state restrictions may apply. Always read and follow label directions.

Equivalent Use Rates by Formulation

Zidua WG herbicide (fl oz/A)	Zidua SC herbicide (fl oz/A)
1.00	1.75
1.50	2.50
2.00	3.25
2.50	4.00
3.00	5.00
3.50	5.75

Insecticide

Sefina™

Inscalis® Insecticide

Tough on pests. Gentle on beneficials.

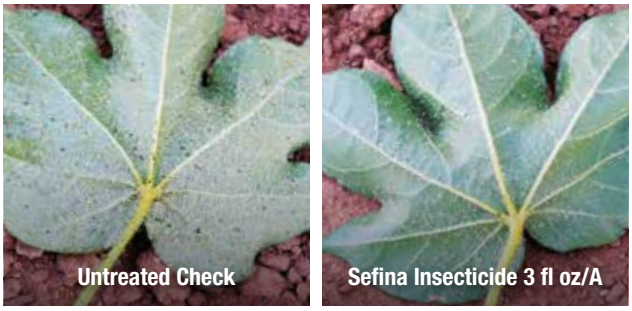
RAPID ONSET OF ACTION
to stop feeding and protect yield potential

UNIQUE MODE OF ACTION
classification (IRAC 9D) in cotton for resistance management

GENTLE ON BENEFICIALS
for complete Integrated Pest Management

Sefina insecticide controls key piercing/sucking insects like aphids and whiteflies. 2ee recommendations are also available for cotton fleahopper control in Alabama, Arizona, Kansas, New Mexico, Oklahoma, Tennesee and Texas.

COMMERCIAL COTTON APHID CONTROL



BASF Sponsored Trial, Lubbock, TX. White flecks on the treated leaf are cast skins the aphid population left behind after being treated with Sefina insecticide. The untreated leaf has a very high aphid infestation that includes both winged and wingless adults.

Sefina insecticide has a favorable environmental profile.

Fungicide

Priaxor®

Xemium® Brand Fungicide

Decrease stress. Increase yield.

BEST-IN-CLASS DISEASE CONTROL
on devastating diseases like target spot

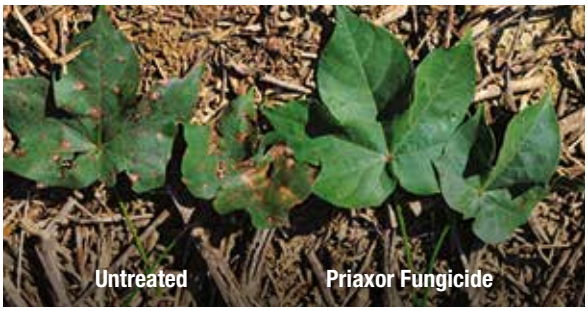
+

REDUCED PLANT STRESS
improves Plant Health from environmental stress conditions typical in cotton growing regions

=

INCREASED GROWTH EFFICIENCY
Priaxor fungicide aids growth by maximizing photosynthesis

TARGET SPOT CONTROL FROM PRIAXOR FUNGICIDE IN COTTON

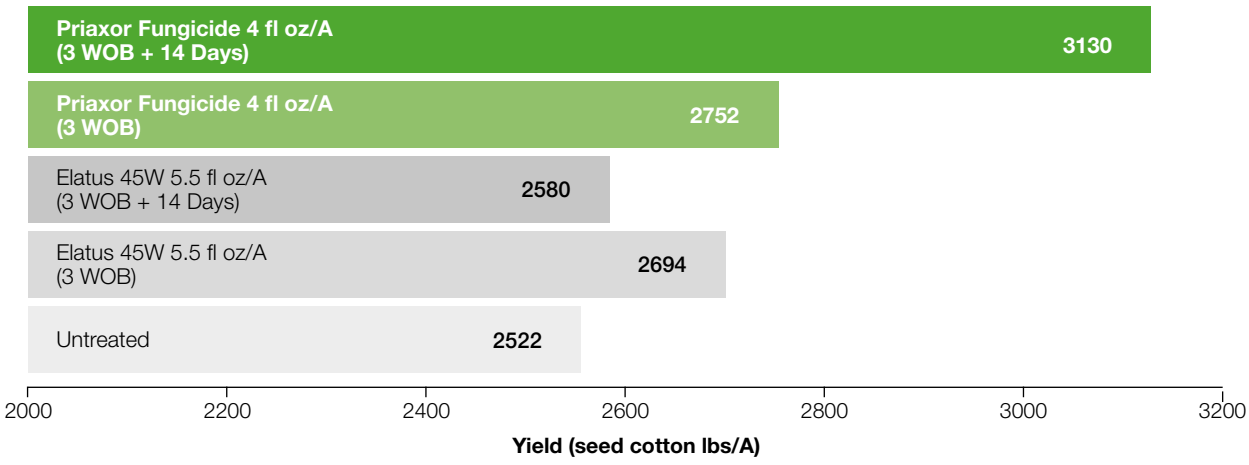


Priaxor fungicide 4 fl oz/A at 2nd week of bloom fb Priaxor fungicide 4 oz/A 4th week of bloom. BASF Sponsored Trial, 2016. Picture 10 weeks after 1st bloom.

Target diseases:

- Target spot
- *Diplodia* boll rot
- *Fusarium* hard lock
- *Phoma* blight
- Rust
- *Stemphylium* leaf spot
- Anthracnose boll rot
- *Alternaria* leaf spot and boll rot
- *Ascochyta* blight and boll rot
- *Cercospora* blight and leaf spot

PRIAXOR FUNGICIDE IS THE INDUSTRY LEADER FOR MAXIMIZING COTTON YIELDS



2016. Auburn University – Fairhope, AL. Planted: 5/9/16. WOB=Week of Bloom.

Harvest Aid

Sharpen®

Powered by **Kixor®** Herbicide

Powerful tool for defoliation and preventing regrowth.

FAST AND COMPLETE HARVEST AID

- Rapid drydown and defoliation
- Reduced incidence of regrowth
- Controls the toughest broadleaf weeds
- Prepares the cotton for a cleaner harvest

FLEXIBILITY FOR YOUR OPERATION

- Use in first or second harvest aid application
- Mixes well with defoliants and boll openers
- Not a restricted use pesticide

BASF Sponsored Trial, Seminole, TX.

Flexible Use Pattern – Tank Mixes with Defoliants or Boll Openers

	Remove Mature Foliage	Desiccates Immature Foliage	Regrowth Suppression	Desiccates Regrowth	Open Bolls	Desiccate Weeds
Sharpen Herbicide	G	E	E	E	F	E
Sharpen Herbicide + thidiazuron	E	E	E	E	G	E
Sharpen Herbicide + ethephon	VG	E	VG	E	E	E
Sharpen Herbicide + tribufos	E	E	E	E	G	E
Sharpen Herbicide + paraquat*	F	E	VG	VG	G	E

2006 BASF Internal Study
E=Excellent VG=Very Good G=Good F=Fair
*Not recommended for 1st application

BASF

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Always read and follow label directions.