

**SOLUTION
GUIDE**

COTTON



Nufarm

Grow a better tomorrow

SOLUTIONS OVERVIEW

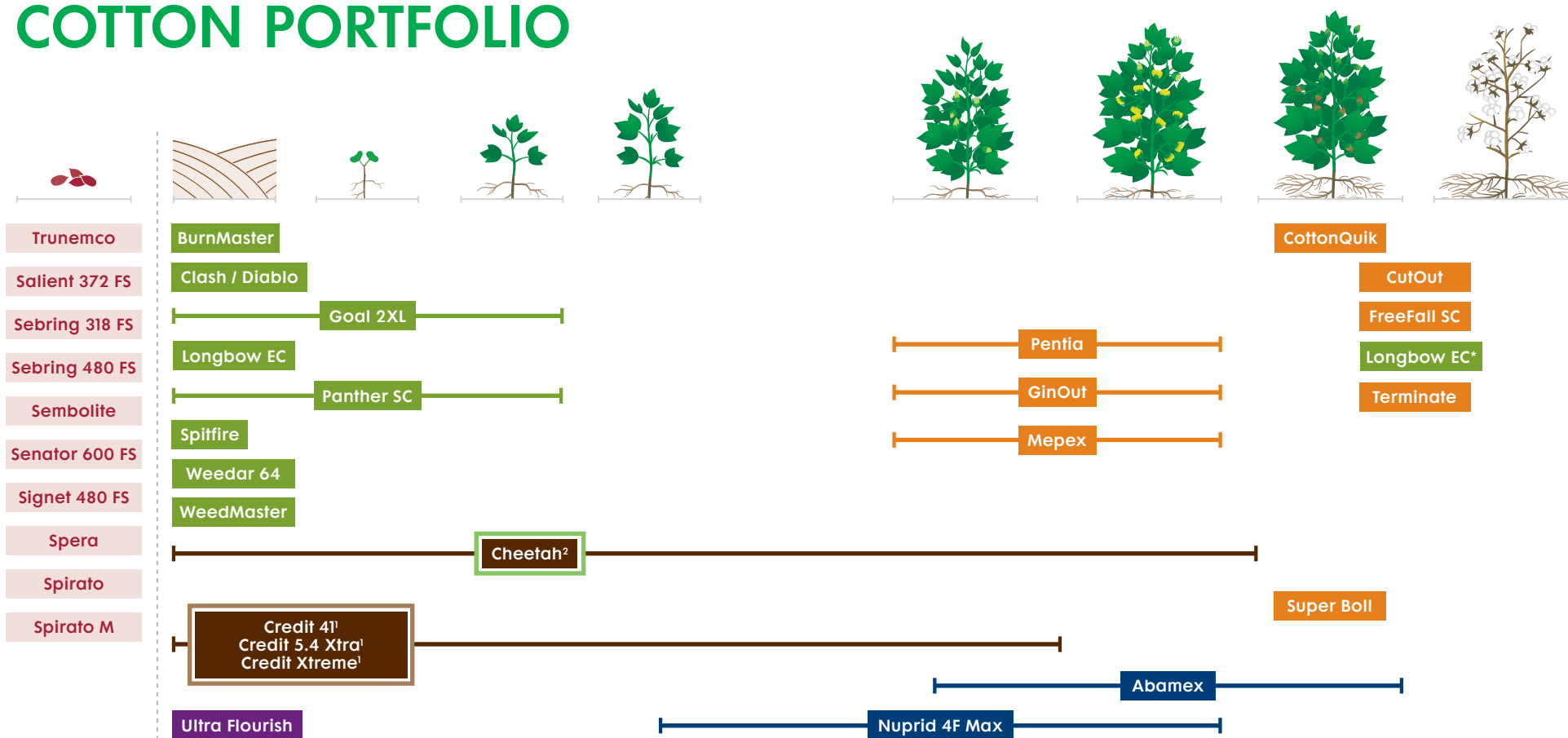
Use this grid for a quick overview of Nufarm solutions for your crop.

	PRODUCT	ACTIVE INGREDIENT	RE-ENTRY INTERVAL	PRE-HARVEST INTERVAL
SELECTIVE HERBICIDES				
Preplant burndown	BurnMaster	Dicamba Acid + 2,4-D ester	48 hours	N/A
Preplant burndown, pre-emerge and post-emerge (post-directed / hooded sprayers)	Panther SC	Flumioxazin	12 hours	85 days
Preplant burndown	Clash	DGA Dicamba Salt	24 hours	N/A
Preplant burndown	Diablo	DMA Dicamba Salt	24 hours	N/A
Preplant and post-directed up to cotton NO SMALLER than 6–8 inches tall	Goal 2XL	Oxyfluorfen	24 hours	N/A
Preplant burndown	Grapple	Rimsulfuron	4 hours	N/A
Preplant burndown	Spitfire	2,4-D ester + Dicamba Acid	48 hours	N/A
Preplant burndown	Weedar 64	2,4-D Amine Salt	48 hours	N/A
Preplant burndown	WeedMaster	DMA Dicamba Salt + 2,4-D Amine Salt	48 hours	N/A
Preplant burndown and harvest aid	Longbow EC	carfentrazone-ethyl	12 hours	7 days
NON-SELECTIVE HERBICIDES				
Preplant burndown, pre-emerge and post-emerge to glyphosate tolerant varieties	Credit 5.4 Extra	I.P.A. Salt Glyphosate	4 hours	7 days
Preplant burndown, pre-emerge and post-emerge to glyphosate tolerant varieties	Credit 41 Extra	I.P.A. Salt Glyphosate	4 hours	7 days
Preplant burndown, pre-emerge and post-emerge to glyphosate tolerant varieties	Credit Xtreme	Dual Salt Glyphosate (I.P.A. + K)	4 hours	7 days
Preplant burndown, pre-emerge and post-emerge to glufosinate tolerant varieties	Cheetah	Glufosinate-ammonium	12 hours	70 days
PLANT GROWTH REGULATOR				
Reduces excessive growth, directs energy to boll development – effects enhanced by Kinetin	Gin Out	Mepiquat Chloride + Kinetin	12 hours	30 days
Reduces excessive growth, directs energy to boll development	Mepex	Mepiquat Chloride	12 hours	30 days
Improves fruit retention and height-to-node ratio compared to mepiquat chloride	Pentia	Mepiquat Pentaborate	12 hours	30 days
Accelerates boll opening, minimizes re-growth, aids defoliation	CottonQuik	Ethephon + Urea Sulfate	48 hours	7 days
Promotes boll opening and leaf drop, advances harvest date	Terminate	Ethephon + Cycilanilide	48 hours	7 days
Accelerates opening of mature bolls, increases recoverable yield	Super Boll	Ethephon	48 hours	7 days
Defoliates and allows for minimal stick harvesting	FreeFall SC	Thidiazuron	24 hours	5 days
Allows for fast defoliation, even at lower temperatures, and reduces new growth	CutOut	Diuron + Thidiazuron	12 hours	5 days
FUNGICIDES				
Seed and root rot (<i>Pythium ultimum</i>), seedling blight (<i>Pythium aphadermatum</i>)	Ultra Flourish	Mefenoxam	48 hours	N/A
INSECTICIDES				
Carmine spider mite, Pacific spider mite, strawberry spider mite, two-spotted spider mite	Abamex	Abamectin	12 hours	20 days
Cotton aphid, plant bugs, thrips, whiteflies, fleahoppers, green stink bugs, bollworm/budworm	Nuprid 4F Max	Imidacloprid	12 hours	14 days

See label for full use site and application details. Always read and follow label directions.

GROWTH STAGES

COTTON PORTFOLIO



PRODUCT TIMING + NOTES

- SEED TREATMENT
- SELECTIVE HERBICIDE
- NON-SELECTIVE HERBICIDE
- FUNGICIDE
- PGR, BOLL OPENER, DEFOLIANT
- INSECTICIDE

¹ CONTAINS GLYPHOSATE

In crop applications on
GLYPHOSATE tolerant varieties only.
READ LABEL FOR VARIETY SPECIFIC
APPLICATION TIMING RESTRICTIONS

² CONTAINS GLUFOSINATE

In crop applications on
GLUFOSINATE tolerant varieties only.
READ LABEL FOR VARIETY SPECIFIC
APPLICATION TIMING RESTRICTIONS

SELECTIVE HERBICIDES

BURNMASTER // WEEDMASTER: 30 days preplant burndown only

SPITFIRE: 21–30 days preplant burndown

PANTHER SC: 14–30 days preplant burndown (interval based on tillage, rate, rainfall)

LAYBY: 16 inch tall cotton

HOODED: 6 inch tall cotton

CLASH // DIABLO: 21 days + 1 inch rainfall (east of Rockies only)

GOAL 2XL: preplant and post-directed up to cotton NO SMALLER than 6–8 inches tall

LONGBOW EC: preplant and post-directed or layby to cotton NO SMALLER than 6 inches tall. Applications at 5 to 6 node stage must be made with hooded sprayer - avoid contact with cotton plant.

*AS HARVEST AID: at maturity up to 7 days PHI

FUNGICIDE

ULTRA FLOURISH: at plant only in furrow applications

INSECTICIDES

NUPRID 4F MAX: at planting up to 14 days PHI

ABAMEX: emergence up to 20 days PHI

NON-SELECTIVE HERBICIDES

CREDIT 41 EXTRA // CREDIT 5.4 EXTRA // CREDIT XTREME: preplant through pre-emerge (all cotton varieties), cracking through 4-node stage (glyphosate tolerant varieties only). Credit brands may be applied throughout the season on Roundup Ready® Flex Cotton. Roundup Ready and other glyphosate tolerant cotton may be treated up to the 4-leaf (node) stage of cotton.

PGR AND BOLL OPENERS

MEPEX // PENTIA // GIN OUT: pinhead square up to 30 days PHI

SUPER BOLL // CUTOUT // COTTONQUICK // FREEFALL SC // TERMINATE: all of these start at some stage of cotton maturity and vary by region. The PHI vary from 5–7 days.



TRUE NEMATODE CONFIDENCE.

NEW patented technology for simplified nematode management. Trunemco™ is a nematode seed treatment solution that helps cotton crops thrive. This patented technology primes plant physiology, activating its defense system for superior broad-spectrum protection against nematode invasion. Trunemco microbial protection supports root health, seedling vigor and uniform plant growth in crucial early stages. This biochemical and microbial solution is proven to provide higher yield profiles and application convenience — the kind that can make a true bottom-line difference.

ACTIVE INGREDIENT

cis-Jasmone, Bacillus (amyloliquefaciens strain MBI 600)

BENEFITS OF TRUNEMCO

- New patented technology for broad-spectrum nematode protection
- Biochemical primes plant physiology, activating its defenses
- Microbial protection supports root health and seedling vigor
- Demonstrates superior damage control and higher yield profile
- Handling ease with caution signal word
- Minimal contribution to slurry volume
- Compatible with most seed treatments

KEY PESTS CONTROLLED See label for complete list

Cotton nematode pests: Columbia lance nematode, reniform nematode, root knot nematode (also provides protection against thrips and aphids); **soybean nematode pests:** reniform nematode, root knot nematode, soybean cyst nematode; **corn nematode pests:** dagger nematode, lance nematode, needle nematode, pin nematode, ring nematode, root knot nematode, root lesion nematode, spiral nematode, sting nematode, stubby root nematode, stunt nematode

APPLICATION GUIDELINES

- Re-entry interval: N/A
- Pre-harvest interval: N/A
- Apply 0.31 oz per 100 lbs of seed

See label for complete directions for use.

WEATHER
TRADE
MARKET PRICES
EQUIPMENT
LABOR
PEST OUTBREAKS

WHEN EVERYTHING IS TOP OF MIND,
DON'T FORGET WHAT'S UNDER FOOT

NEMATODE NUMBERS ARE RISING

In fields across America, nematode numbers are rising. Field trials show that Trunemco™ seed-applied treatment provides a leading level of nematode protection and higher yields than the competition in soybeans, cotton and corn.



SEE THE RESULTS

NUFARM.COM/USCROP/TRUNEMCO



GROUP 4 HERBICIDE



OPTIMIZED FOR MAXIMUM PERFORMANCE.

Count on the burndown masters. BurnMaster™ and WeedMaster® herbicides mix optimized ratios of 2,4-D + dicamba to control a broad spectrum of problem weeds ahead of planting. BurnMaster is designed with cool-weather control in mind and tackles resistant weed species. WeedMaster is a concentrated formula and delivers tough takedown of broadleaves and brush.

ACTIVE INGREDIENT

BURNMASTER: dicamba acid (10.73%), 2,4-D ester (49.64%)

WEEDMASTER: DMA dicamba salt (12.4%), 2,4-D amine salt (35.7%)

BENEFITS OF BURNMASTER

- Excellent cool-weather performer – ideal for early spring burndown
- True systemic control kills weeds above and below ground
- Optimized 2,4-D ester and dicamba acid ratio delivers control of more than 65 weeds including glyphosate- and ALS-resistant species

BENEFITS OF WEEDMASTER

- Concentrated formula delivers excellent broadleaf control
- Controls tough weeds such as horsenettle, thistles, and blackberry
- Pre-emergence control with residual activity

KEY WEEDS CONTROLLED See label for complete list

Broad-spectrum control of many broadleaf weeds including chickweed, henbit, lambsquarters, marestalk, plus glyphosate-, and ALS-resistant species. WeedMaster adds control of tough brush weeds.

APPLICATION GUIDELINES

Apply 2 pt/A

- Preplant burndown only
- 30 day preplant interval after 1 inch of rainfall or irrigation
- Only for geographic areas with >25 inches of average annual rainfall
- Not for use in California

See label for complete directions for use.




GROUP 4 HERBICIDE

DICAMBA SALTS DELIVER PROVEN PREPLANT BURNDOWN.

Clash™ and Diablo® herbicides utilize dicamba salts to hold down tough annual and perennial broadleaf weeds ahead of cotton planting. Clash also controls ALS- and triazine-resistant annual weeds and is formulated to handle unpredictable spring weather. Diablo is a water-soluble amine formulation of dicamba that offers additional brush and vine control options.

ACTIVE INGREDIENT

CLASH: DGA dicamba salt (56.8%)

DIABLO: DMA dicamba salt (49.1%)

BENEFITS OF CLASH

- Controls a broad spectrum of annual and perennial broadleaf weeds
- Ideal solution for ALS-, glyphosate-, and triazine-resistant weeds
- Flexible application timing, formulated for challenging spring weather

BENEFITS OF DIABLO

- Water-soluble amine formulation
- Controls noxious weeds, brush, and vines

KEY WEEDS CONTROLLED See label for complete list

Many annual, perennial weeds such as lambsquarters, pigweed, and thistle. Controls ALS-, glyphosate-, and triazine-resistant weeds.

APPLICATION GUIDELINES

Apply up to 8 fl oz/A

- Re-entry interval: 24 hours
- Preplant interval: 21 days + 1 inch of rainfall
- Pre-harvest interval: N/A
- Maximum rate per acre per season: 8 fl oz/A

See label for complete directions for use.



PANTHER® SC: POUR ON THE POWER.

Panther® SC Herbicide provides excellent residual control of tough broadleaf weeds like marestail, Palmer amaranth, and waterhemp with speed and convenience. Panther SC fits into your production system – apply in the fall for a clean start in the spring, apply preplant for burndown before planting, after emergence with hooded or shielded sprayers for extended residual protection against weeds.

ACTIVE INGREDIENT

flumioxazin (41.4%, 4 lbs/gal)

BENEFITS OF PANTHER SC

- Controls a broad spectrum of annual broadleaf and grass weeds, including most broadleaf weeds resistant to glyphosate
- Convenient liquid formulation makes mixing and loading faster and easier
- Offers long-lasting residual control to keep fields clean
- Flexible rotation options allow you to pick the crop that maximizes your profits
- Enhanced speed of control on a broader weed spectrum in labeled burndown programs

KEY WEEDS CONTROLLED See label for complete list

Carpetweed, chickweed, Florida beggarweed, lambsquarters, marestail/horseweed, nightshades, pigweeds, prickly sida, purslane, waterhemp

APPLICATION GUIDELINES

- Fall applications: 2 to 4 fl oz/A
- Spring applications: 1 to 3 fl oz/A
- Preplant intervals: 14 days for rate < 1.5 fl oz (no-till and strip-till only)
21 days for rate 1.5 to 2 fl oz/A (no-till and strip-till only)
60 days for rate 2 to 3 fl oz/A (conventional till)
- 1 inch of rainfall/irrigation must occur between application and planting of cotton or crop injury may occur.

See label for complete directions for use.

Goal® 2XL

SCORE WITH THE PRE- AND POST-POWER OF GOAL® 2XL

Goal® 2XL gives you pre- and post-control on dozens of key weeds, making it a proven winner in your residual herbicide program. Goal 2XL works by delivering both contact pre- and post-emergence control. It controls actively growing weeds and also forms a soil barrier to block the establishment of emerging weeds for an extended period of time.

ACTIVE INGREDIENT

oxyfluorfen (22.3%, 2 lbs/gal)

BENEFITS OF GOAL 2XL

- User-friendly emulsifiable concentrate herbicide
- As a pre-emergence herbicide, Goal 2XL forms a chemical barrier on the soil surface and affects weed plants through direct contact at emergence
- Excellent tank mix partner

KEY WEEDS CONTROLLED See label for complete list

Filaree, Florida pursley, lambsquarters, morningglory, pigweed, prickly sida, spurge

APPLICATION GUIDELINES

Fallow beds prior to cotton planting: Apply at 1 to 2 pt/A in AL, AR, GA, LA, MS, MO, NC, OK, SC, TN, TX and VA

Post-emergence: 1 to 2 pt/A applied as a post-directed spray. Do not apply to cotton that is less than 6 inches tall. For optimum control, use 2 pt/A on actively growing weed seedlings with no more than 4 true leaves.

- Re-entry interval: 24 hours

See label for complete directions for use.



WHEN YOU WANT CLEAN COTTON, TAKE AIM WITH LONGBOW™ EC.

Longbow™ EC Selective Herbicide provides utility under a variety of weather conditions as both a preplant herbicide and a cotton defoliant and harvest aid. Longbow EC's low-use rate saves input costs and works swiftly to deliver superb cotton defoliation, regrowth removal and unwanted vegetation desiccation in both spindle and stripper harvested cotton.

As an added benefit to the grower, after harvest or prior to planting next year's crop, Longbow EC is also labeled as a herbicide, giving rapid control of broadleaf weeds, such as pigweeds, lambsquarters and waterhemp.

ACTIVE INGREDIENT

carfentrazone-ethyl (22.3%, 2 lb ai/gal)

BENEFITS OF LONGBOW EC

- Fast-acting herbicide and defoliant
- Excellent tank-mix partner
- Low use rates
- Utility as a defoliant in cotton with efficacy in warm and cool conditions
- Wide spectrum broadleaf weed control

KEY WEEDS CONTROLLED See label for complete list

Cocklebur, kochia, lambsquarters, morningglory, nightshade, Palmer amaranth, pigweed, Russian thistle, velvetleaf, waterhemp

APPLICATION GUIDELINES

- Maximum rate per year: 7.9 fl oz (0.124 lb ai) per acre total for preplant, in-season weed control and harvest aid
3.2 fl oz (0.05 lb ai) per acre if only used as a harvest aid
- Pre-harvest interval: 7 days

See label for complete directions for use.
Not registered for use in California.

Credit® 5.4 Extra

START CLEAN + TREAT MORE ACRES.

Delivering the performance you expect from the Credit® brand family, this concentrated formula treats more acres per jug. Credit 5.4 Extra is formulated with 4 pounds acid equivalent of glyphosate per gallon and a full load of quality surfactant – thus no additional surfactant is required.

ACTIVE INGREDIENT

glyphosate, isopropylamine salt (53.8%)

Equivalent to 4 lbs/gal of acid glyphosate

BENEFITS OF CREDIT 5.4 EXTRA

- Superior broad-spectrum control of tough annual and perennial broadleaf weeds and grasses
- Works fast – burndown of annuals in 2 to 3 days and perennials in 7 to 10 days
- Fully loaded – requires no additional surfactant
- Flexible labeling for use across multiple cropping systems and sites, including Roundup Ready® and other glyphosate tolerant crops
- Concentrated formula treats more acres per gallon

KEY USES See label for complete list

Many annual and perennial weeds and woody brush

APPLICATION GUIDELINES

Can be applied as preplant spring burndown, pre-emerge, post-emerge*, as a harvest aid, and for post-harvest fall burndown.

- Re-entry interval: 4 hours
- Pre-harvest interval: 7 days
- Maximum volume per year (depending on weed height, application timing, and cotton trait): 6 qt/A
- Application rate range (depending on weed height, application timing, and cotton trait): 24 to 48 fl oz/A

See label for complete directions for use.

* Glyphosate tolerant cotton only

Credit® Xtreme

GET POWERFUL WEED CONTROL FROM CREDIT® XTREME.

Credit® Xtreme gives you the proven performance of Credit in an exclusive formulation with Dual-Salt Technology™. With fast activity and rainfastness, tough weeds are no match for Credit Xtreme.

ACTIVE INGREDIENT

glyphosate: isopropylamine salt (30.94%), potassium salt (22.99%)

Contains 5.83 lbs/gal (697 g/l) of combined IPA and K salt, and a glyphosate acid equivalent (a.e.) of 4.5 lbs/gal (540 g/l)

BENEFITS OF CREDIT XTREME

- Contains proprietary Dual-Salt Technology; delivers excellent crop safety
- Takes on the toughest weeds with quick burndown and complete control
- Excellent tank-mix compatibility, even in hard water environments
- Fast translocation activity and rainfastness
- Treats more acres per tote than many alternative glyphosate products

KEY WEEDS CONTROLLED See label for complete list

Many tough, non-resistant, weeds like lambsquarters and velvetleaf

APPLICATION GUIDELINES

Can be applied as preplant spring burndown, pre-emerge, post-emerge*, as a harvest aid, and for post-harvest fall burndown.

- Re-entry interval: 4 hours
- Pre-harvest interval: 7 day
- Maximum rate range (depending on weed height, application timing, and cotton trait): 22 to 44 fl oz/A

See label for complete directions for use.

* Glyphosate tolerant cotton only

Cheetah®



SATISFACTION: CLEANER. QUICKER. CHEETAH®.

Cheetah® non-selective, post-emergence herbicide provides fast, effective control of the toughest broadleaf and grass weed challenges, including those resistant to glyphosate and multiple other herbicide classes. Approved for post-emergence* use on **ALL** cotton varieties that have glufosinate tolerant traits.

ACTIVE INGREDIENT

glufosinate (24.5%, 2.34 lbs/gal)

BENEFITS OF CHEETAH

- Fast non-selective control of tough grass, sedge, and broadleaf weeds
- Best glyphosate alternative, offering broad-spectrum weed control
- Directed sprays provide excellent control and crop safety
- Controls glyphosate-resistant weeds

KEY WEEDS CONTROLLED See label for complete list

Chickweed, clover, crabgrass, dandelion, fleabane, foxtail, henbit, junglerice, kochia, lambsquarters, mallow, malva, maretail, morningglory, nutsedge, purslane, ragweed, ryegrass, spurge, vetch, woodsorrel

APPLICATION GUIDELINES

Apply 29 to 43 fl oz/A as determined by weed size.

- Re-entry interval: 12 hours
- Pre-harvest interval: 70 days
- Maximum amount per season: 72 oz/A
- Spray volume: 15 to 20 gpa (medium droplets)
- Can be applied as preplant spring burndown, pre-emerge, post-emerge**, and for post-harvest fall burndown

See label for complete directions for use.

* Do not apply post-emergence to any variety that is not tolerant to glufosinate

** Glufosinate tolerant cotton only

TIMELY PGR APPLICATIONS HELP CROPS, AND YIELDS, GROW BETTER.



PLANT GROWTH REGULATORS ARE USED MID- AND LATE-SEASON AND PLAY A CRUCIAL ROLE IN FINAL YIELD OUTPUT.

In general, PGR applications from the matchhead square to early-bloom growth stages modify plant growth to direct energy toward better boll development. Late-season PGRs focus on priming the plant for a quality harvest through defoliant, boll opener, and/or desiccant activity.

	MID-SEASON GROWTH AID	LATE-SEASON DEFOLIANT	LATE-SEASON BOLL OPENER
ACTION	Inhibits gibberellic acid production	Enhances ethylene production to stimulate formation of abscission layer	Enhances ethylene production to stimulate fruit ripening
TIMING	First application may start at matchhead square, apply at 7–14 day interval or at regrowth	Apply when 40–80% of bolls are mature, 60% mature bolls is rule of thumb	
SOLUTION	Gin Out™ Mepex® Pentia®	CutOut™ FreeFall® SC	Super Boll® Terminate™ CottonQuik®

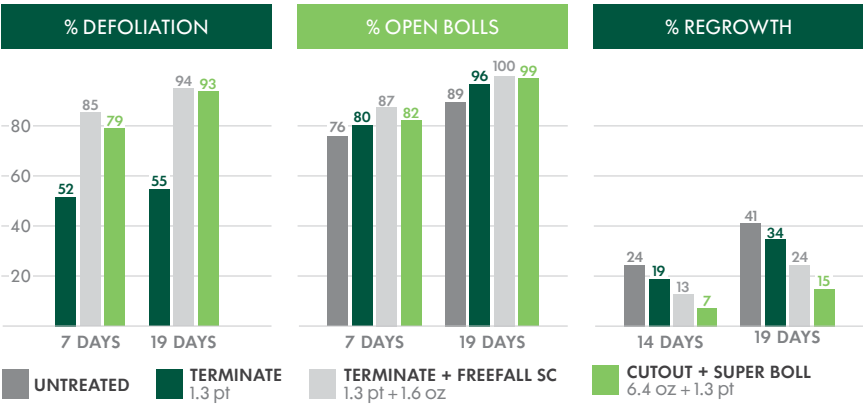
CottonQuik® | CutOut | FreeFall® SC | Gin Out™

Mepex® | Pentia® | Super Boll® | Terminate™

MAXIMIZE QUALITY WITH LATE-SEASON PGRs.

Late-season PGRs prime cotton crops to maximize harvest quality. They synchronize boll maturation, leaf drop and plant desiccation to optimize harvest conditions – all while reducing the days-to-harvest timeline.

GET HARVEST-READY WITH LATE-SEASON PGRs



Trial Credits: Tifton, GA. Applied Sept. 3, 2014.



Gin Out™

IT'S THE KINETIN THAT MAKES GIN OUT™ PLANT GROWTH REGULATOR WORK EVEN BETTER.

Gin Out™ goes beyond proven regulation with its unique mepiquat chloride + kinetin combo. For decades, mepiquat chloride (Mepex®) has rightfully earned its trustworthy merit by delivering dependable control. Mepiquat reduces a plant's production of gibberellic acid – which inhibits cell elongation and redirects resources from vegetative to reproductive growth. In other words, it reduces excessive growth, and it works.

NOW LET'S TALK ABOUT THE "EVEN BETTER" PART.

Kinetin, a cytokinin plant hormone, plays a natural role in plant growth and health, especially during times of temperature or water stress. Kinetin works in several specific ways to strengthen root systems, promote earliness, and aid proper boll set – ultimately increasing lint yield.

KINETIN STIMULATES:

- Synthesis and accumulation of chlorophyll
- Leaf expansion

KINETIN PROMOTES:

- Cell division and lateral bud growth
- Stomata opening and transpiration rate (*improving response to water stress*)

KINETIN DELAYS:

- Leaf senescence (*particularly subtending bracts which drive boll development*)
- Wilting (*by alleviating negative effects of water stress*)

APPLICATION RECOMMENDATIONS

TIME OF APPLICATION		Moderate Vegetative Vigor: Rate/A	High Vegetative Vigor: Rate/A
1 ST	Pinhead to matchhead square**	2 fl oz	4 to 6 fl oz*
2 ND	7 to 14 days later, or when regrowth occurs	2 to 4 fl oz*	4 to 8 fl oz*
3 RD		2 to 6 fl oz*	4 to 12 fl oz*
4 TH		2 to 8 fl oz*	4 to 16 fl oz*
5 TH		4 to 8 fl oz*	4 to 16 fl oz*

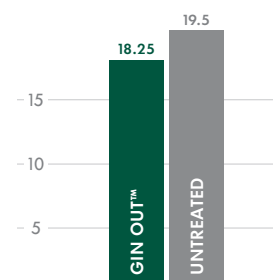
*Use higher rates if previous application was not made or if growing conditions are conducive to vigorous growth.

**The first application should be made when 50% of the plants have one or more squares that are 1/8 to 1/4 inch in diameter.

SEE THE GIN OUT™ DIFFERENCE

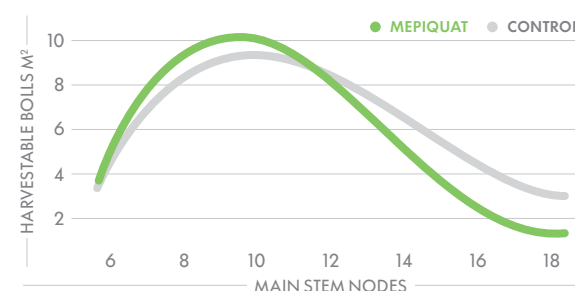
Gin Out™ goes beyond proven regulation with its unique mepiquat chloride + kinetin combo.

REDUCE MAIN STEM NODES



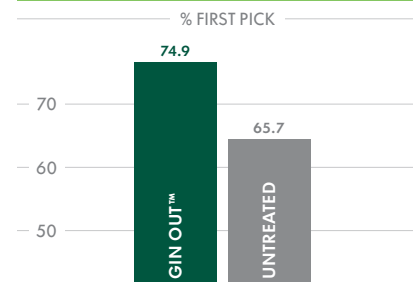
Summary of studies conducted in 19 cotton belt locations over two-year span. Gin Out applied at 8 oz/A to 10 oz/A at 2 WAIT.

SHIFT BOLL LOCATION + INCREASE HARVESTABLE BOLLS



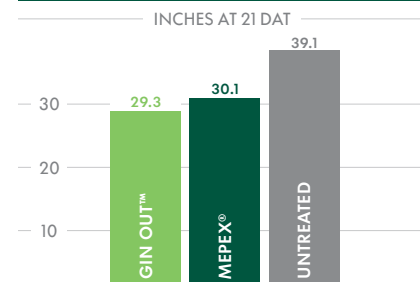
The effect of mepiquat on number of harvestable bolls per square meter on all sympodial branch fruiting positions at each main stem node (Kerby et al, 1986). Mepiquat generally causes a greater percentage of the total bolls to lower nodes on the plant.

PROMOTE EARLINESS



Dr. Owen Gwathmey, University of Tennessee, Jackson, TN

REDUCE PLANT HEIGHT



Texas A&M University

WHEN IT COMES TO PGRS, KEEP THIS IN MIND

- Different products will be more effective in different years, the Nufarm portfolio provides flexibility to match local conditions with best-fit solutions
- Rate and effectiveness will depend heavily on environmental conditions (*Rainfall, soil fertility, temperature, etc.*)
- Crop size, maturity, and spray coverage will also impact effectiveness

Gin Out™

PROTECT YIELDS AND IMPROVE QUALITY WITH GIN OUT™.

Formulated with kinetin, Gin Out™ reduces excessive cotton growth and puts more emphasis on boll development. Mepiquat chloride delivers growth control and boll retention, while kinetin helps to stimulate leaf expansion, bud formation and delays leaf senescence.

ACTIVE INGREDIENT

mepiquat chloride (4.2%, 0.35 lb/gal), kinetin (0.0025%)

BENEFITS OF GIN OUT

- Reduces excessive vegetative growth
- Optimizes boll development for higher yields
- Suitable for early-season applications
- Can reduce risk of yield and quality loss due to delayed or prolonged harvest
- Helps improve defoliation and reduce trash

KEY USES See label for complete list

Cotton

APPLICATION GUIDELINES

Apply 2 to 16 oz (depending on growth, timing, region, and variety)

- Re-entry interval: 12 hours
- Pre-harvest interval: 30 days
- Spray interval: vary per conditions, generally 7 to 21 days
- Maximum amount per season: 48 oz/A (0.132 lb mepiquat chloride)
- Maximum rate per application: 16 fl oz/A for vigorous growth and cotton that is not stressed
- Water carrier spray volume: minimum of 2 gpa

See label for complete directions for use.

Mepex®

GROW MORE YIELD IN SHORT-SEASON PRODUCTION.

Mepex® is a foliar-applied plant growth regulator that allows growers to manage cotton plants for short-season production. Mepex reduces plant height, offers better boll retention and helps improve defoliation – leading to reduced risk of yield and quality loss due to prolonged harvest.

ACTIVE INGREDIENT

mepiquat chloride (4.2%, 0.35 lb/gal)

BENEFITS OF MEPEX

- Reduces excessive vegetative growth
- Optimizes boll development for higher yields
- Suitable for early-season applications
- Can reduce risk of yield and quality loss due to delayed or prolonged harvest
- Helps improve defoliation and reduce trash

KEY USES See label for complete list

Cotton

APPLICATION GUIDELINES

Apply 2 to 24 oz/A (depending on growth, timing, region, and variety)

- Re-entry interval: 12 hours
- Pre-harvest interval: 30 days
- Spray interval: 7 to 21 days
- Maximum amount per season: 48 oz (0.132 lb mepiquat chloride)
- Maximum rate per application: 24 oz/A for late-season vigorous growth (1.5 lbs ai/A)

See label for complete directions for use.

CottonQuik®

HARVEST THE VALUE OF COTTONQUIK®.

CottonQuik® Cotton Harvest Aid/Defoliant accelerates the opening of mature unopened cotton bolls over a wide range of temperatures, minimizing regrowth for a clean harvest. CottonQuik allows you to use a reduced rate of defoliant while improving consistency and speeding leaf drop.

ACTIVE INGREDIENT

ethephon (18.3%, 2.28 lb/gal), urea sulfate (58.6%)

BENEFITS OF COTTONQUIK

- Superior boll opening that begins three to five days sooner than other products
- Delivers consistent results, even in cool weather, to help keep harvest on schedule
- Can help minimize regrowth
- Enhances defoliant activity to improve consistency and hasten leaf drop

KEY USES See label for complete list

Cotton defoliation, cotton boll opening

APPLICATION GUIDELINES

Apply 3 to 3.5 qt/A of CottonQuik® alone or 1.5 to 2 qt/A in combination with another defoliant (see label).

- Re-entry interval: 48 hours (72 hours for areas with <25" annual rainfall)
- Pre-harvest interval: 7 days
- Split application: 4 to 7 days apart
- Maximum amount per year: 3.5 qt/A (2.0 lb ethephon)

See label for complete directions for use.



COTTON DEFOLIANT AND BOLL OPENER IN ONE.

Terminate™ Cotton Harvest Aid increases the natural ethylene synthesis process to quickly and effectively promote leaf drop and open cotton bolls. As a single application premix, crops may be harvested up to 5 days faster – reducing risk from damaging weather.

ACTIVE INGREDIENT

ethephon (51.8%, 6 lb/gal), cyclanilide (3.2%, 0.375 lb/gal)

BENEFITS OF TERMINATE

- Premix formula promotes both leaf drop and boll opening naturally
- Quick results allow harvest up to 5 days sooner
- Clean crops and preserved lint quality maximize profits
- Tank mix compatible with other plant growth regulators to meet the demands of challenging weather conditions

KEY USES See label for complete list

Cotton defoliation, cotton boll opening

APPLICATION GUIDELINES

Apply 1 1/3 to 2 2/3 pt depending on conditions.

- Re-entry interval: 48 to 72 hours (in <25" annual rainfall)
- Pre-harvest interval: 7 day
- Maximum amount per year: 2 lb ethephon, 0.25 lb cyclanilide

See label for complete directions for use.

Super Boll®

PROMOTE BOLL OPENING FOR EARLIER HARVEST.

Super Boll® plant regulator hastens the opening of mature cotton bolls, enabling growers to harvest earlier and increase recoverable yield.

ACTIVE INGREDIENT

ethephon (55.4%, 6 lb/gal)

BENEFITS OF SUPER BOLL

- Promotes the opening of mature cotton bolls
- Enables growers to harvest earlier and increase recoverable yield

KEY USES See label for complete list

Cotton, tobacco (flue-cured)

APPLICATION GUIDELINES

Apply 1 1/3 to 2 2/3 pt alone depending on conditions. Apply 1/3 to 1 1/3 pt when used sequentially or in an approved tank mixture.

Apply a minimum spray volume of 10 gal/A.

- Re-entry interval: 48 hours (72 hours for areas <25" annual rainfall)
- Pre-harvest interval: 7 days
- Maximum amount per season: 2 lb ethephon/A
- Rainfast for 6 hours

See label for complete directions for use.



HARVEST FASTER WITH CUTOUT®.

CutOut® Cotton Defoliant promises fast defoliation even when cold fronts are in the forecast. CutOut removes mature leaves and new growth to reduce trash and preserve lint quality. Plus, it can be tank-mixed with other harvest aids to improve performance for a faster finish.

ACTIVE INGREDIENT

thidiazuron (12%, 1.0 lb/gal), diuron (6%, 0.5 lb/gal)

BENEFITS OF CUTOUT

- Offers consistent, clean defoliation
- Defoliates with less desiccation
- Helps preserve lint quality by removing mature leaves and suppressing new growth
- Performs even in tough weather conditions
- Excellent tank-mix partner with Super Boll®, CottonQuik® or any other boll-opening products

KEY USES See label for complete list

Cotton defoliation

APPLICATION GUIDELINES

Apply 6.4 to 16 fl oz/A

- Re-entry interval: 12 hours
- Pre-harvest interval: 5 days
- Spray interval: 21 days
- Maximum applications per year: 2
- Maximum amount per year: 1 pt

See label for complete directions for use.

FreeFall® SC

FREEFALL® SC FOR AN EASIER HARVEST AND CLEANER BALE.

FreeFall® SC cotton defoliant removes juvenile growth while controlling re-growth, allowing for a no-stick, no-hassle harvest at optimum crop maturity. Thidiazuron, the active ingredient in FreeFall, is recognized as the long-time standard in effective defoliation.

ACTIVE INGREDIENT

thidiazuron (41.4%, 4 lb/gal)

BENEFITS OF FREEFALL SC

- Offers excellent defoliation for less trash in cotton
- Provides excellent re-growth control and removes juvenile growth
- Enables harvest at maximum maturity
- Single active ingredient allows you to customize your defoliation program

KEY USES See label for complete list

Cotton defoliation

APPLICATION GUIDELINES

Apply 1.6 to 6.4 fl oz/A

Tank mix with Super Boll® for enhanced defoliation and speed of boll opening. Mix with low rates of Super Boll for enhanced defoliation in sequential programs.

- Re-entry interval: 24 hours
- Pre-harvest interval: 5 days
- Maximum applications per season: 2
- Maximum amount per year: 9.6 fl oz/A or 0.3 lb ai/A

See label for complete directions for use.



MADE TO MAXIMIZE COTTON YIELD POTENTIAL.

Now available exclusively from Nufarm, Pentia® Plant Regulator is tailor-made to enhance the yield potential of your cotton crop. Cotton growers investing in greater crop potential can turn to Pentia for improved rainfastness, height management, boll retention, earliness and yield potential compared to products containing mepiquat chloride. Pentia supports better fruit retention and height-to-node ratio, too – so put the proven profit-potential of Pentia in your pocket this season.

ACTIVE INGREDIENT

mepiquat pentaborate (9.6%, 0.82 lb/gal)

BENEFITS OF PENTIA

- Improved fruit retention and height-to-node ratio compared to mepiquat chloride
- Rainfast in 2 hours or 1 hour with adjuvant
- Fast absorption, up to 25% faster than mepiquat chloride
- Enhanced boll set and earliness
- Increased harvestable bolls and harvest efficiency

KEY USES See label for complete list

Cotton

APPLICATION GUIDELINES

Apply 8 to 24 fl oz/A in AL, AR, FL, GA, LA, MO, MS, NC, SC, TN, VA

Apply 4 to 24 fl oz/A in AZ, KS, NM, OK, TX

Apply to actively growing cotton that is not under stress. Use the higher rates when/where excessive cotton vegetative growth is expected.

- Maximum rate per acre per application: 24 ounces
- Maximum rate per acre per season: 48 ounces
- Rainfast in 2 hours (alone) or 1 hour (with adjuvant) after application
- Re-entry interval: 12 hours
- Pre-harvest interval: 30 days

See label for complete directions for use.

We're Growing Too.

With new innovations including Trunemco™, Panther® SC, and our newest additions, Goal® 2XL and Pentia®, we are constantly adding more options to help you grow a profitable cotton crop. And, as always, we back all of our products with the knowledge, service and support you've come to know from Nufarm.



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For specific application rates, directions, mixing instructions and precautions, read the product label. Please visit www.nufarm.com/uscrop to download a full label.

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