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Weed Control Recommendations in Wheat

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The recommendations contained herein are based primarily on herbicide labels researched by Texas Cooperative Extension. The use of product names is not intended as an endorsement of the product or of a specific manufacturer, nor is there any implication that other formulations containing the same active ingredient are not equally effective. Product names are included solely to aid readers in locating and identifying the herbicides suggested.

Information given herein is for educational purposes only. References to commercial products or trade names are made with the understanding that no discrimination is intended and no endorsement by Texas Cooperative Extension is implied.

This publication is no substitute for the herbicide product labels! It is intended to serve only as a guide for controlling weeds in wheat. Because labeled rates and restrictions change constantly, consult a current product label before use.

Contents

Weed management considerations

Weeds may be controlled in cropland through cultural, mechanical and chemical means. Judicious use of these methods individually or in combination can effectively manage weeds without causing economic loss or environmental harm. Selecting the proper management strategy(ies) to implement depends largely on the target weed(s) and the infestation level. Also, the crop will play a major role in determining the timing of mechanical measures.

Considerations for **cultural** and **mechanical** weed control include:

- Use weed-free seed to protect against weed infestations and the introduction of new weed species.
- Thoroughly clean harvesting equipment before moving it from one field to the next, or require it of custom harvesters before they enter the field.
- In conventional tillage systems, use mechanical tillage or preplant burndown herbicides to remove initial weed flushes before planting, thereby reducing or eliminating the potential for continued infestation.
- Rotate crops that physically out-compete certain weeds, resulting in their gradual decline. Remove light or spotty infestations of weeds by hand-hoeing or spot cultivation to prevent weed seed production and the spread of rhizomes or roots. When plowing perennial weeds, take care to prevent the transport and spread of plant parts to other areas of the field.

Strategies for managing herbicide-resistant weeds

- Employ integrated weed management strategies. Use herbicides only when necessary, and combine their use with mechanical, cultural or biological methods.
- Rotate or mix herbicides with different modes of action.
- If possible, rotate crops where herbicide rotations are feasible.
- Scout the fields regularly for resistant weed populations, and control the weed escapes (treat them the same as you would a newly established invasive species).
- Plant weed-free wheat seed.
- Clean tillage and harvest equipment to prevent the spread of resistant species.

Preplant herbicides

Herbicide	Product rate/acre	Weeds controlled	Remarks	Labeled in other small grains
Amber DF	0.28–0.47 oz 0.56 oz rate for annual grass suppression	Annual broadleaves: mustards, pennycress, vetch. Annual grass suppression: annual ryegrass, downy brome, cheat, Japanese brome.	Should be used only if disk drill is used for planting, not hoe/sweep drills. Incorporate into top 1 in of soil. Requires rainfall to activate (enough to wet 2–3 in deep).	None
Finesse DF	0.2–0.4 oz	Annual broadleaves: mustards, curly dock. Annual grasses: cheat, downy brome.	Do not apply if wheat has germinated and has started to emerge above the soil line or on wheat planted into dry soil. Wheat should be planted at least 1 in deep. Do not use in soils with a pH above 7.9. Long rotation restrictions.	None

Preemergence herbicides

Herbicide	Product rate/acre	Weeds controlled	Remarks	Labeled in other small grains
Amber DF	0.28–0.47 oz 0.56 oz rate for annual grass suppression	Annual broadleaves: mustards, pennycress, vetch. Annual grass suppression: annual ryegrass, downy brome, cheat, Japanese brome.	Requires rainfall to activate (enough to wet 2 or 3 in deep).	None
Finesse DF	0.2–0.5 oz	Annual broadleaves: mustards, curly dock, henbit. Annual grasses: cheat, downy brome, ryegrass.	Application should occur after planting but before wheat emerges. The 0.5 oz rate is only for suppressing cheat, brome and ryegrass.	None
Glean FC DF	0.5 oz	Annual grasses: ryegrass suppression. Annual broadleaves: mustards, curly dock.	North central Texas and southern Oklahoma only. Wheat seeds should be planted at least 1 in deep. Crop rotations are dependent on soil pH.	Oat
Hoelon (3EC)	2–2.66 pt	Annual grass: Italian ryegrass.	Apply at planting. If no rain occurs within 7 days, expect reduced control. Rate dependent on soil type.	None
Maverick Pro	0.66 oz	Annual grasses: cheat, downy brome. Annual broadleaves: wild mustard.	Preemergence applications are not recommended for no-till systems.	None

Postemergence herbicides

Herbicide	Product rate/acre	Weeds controlled	Weed application timing	Remarks	Tank mix options	Labeled in other small grains
Achieve SC Achieve Liquid	6.9–9.2 oz	Annual grasses: Italian ryegrass, wild oats.	1–4 in, ryegrass 1–6 in, wild oat	Supercharge® adjuvant is required at 0.5%v/v. Crop rotation for cereal grains, 30 days. All other crops, 106 days.	Buctril, Bronate, Curtail M, Stinger	Barley
Affinity Broadspec	0.4–1.0 oz	Annual broadleaves: mustards, henbit, filaree, flixweed.	Up to 4 in tall or across. Refer to label for specific weeds	Apply after 2-leaf stage, but before flagleaf is visible. Must be thoroughly mixed with water before it is added to liquid nitrogen fertilizer.	2,4-D, MCPA, Clarity, Holeon, Buctril. Refer to label for additional tankmixes	Barley
Aim EW Aim EC	0.5–2.0 oz	Annual broadleaves: field pennycress, tansy mustard, henbit, shepherdspurse, flixweed.	Up to 4 in tall or up to 3 in across	Apply up to wheat jointing stage. Add non-ionic surfactant. Coverage is essential for good control. A minimum of 10 GPA carrier volume is required.	2,4-D, MCPA, refer to label for additional tankmixes	Barley, oats, rye, triticale
Ally XP	0.1 oz	Annual broadleaves: annual mustards, kochia, wild buckwheat, curly dock, kochia, henbit.	Up to 4 in tall or across	Dryland wheat: apply at 2-leaf to boot stage. Irrigated wheat: apply after tillering to boot stage and irrigation should be delayed for 3 days after treatment. Do not apply to soils above a pH of 7.9.	Banvel, Bromoxynil, 2,4-D, Express, Harmony Extra, Maverick, MCPA, Starane. Do not tank-mix with Malathion	Barley
Ally Extra (Ally + Harmony Extra)	0.2–0.4 oz	Annual broadleaves: annual mustards, kochia, wild buckwheat, curly dock, kochia.	Less than 4 in tall or wide	Apply at 2-leaf to boot stage. Irrigation should be delayed for 6 hours after treatment and should not exceed 1 in. Long crop rotation interval. Do not apply to soils above a pH of 7.9.	2,4-D, MCPA, Bromoxynil	Barley
Amber 75 DF	0.28–0.47 oz	Annual broadleaves: pennycress, tansy mustard, kochia.	Dependent on weed species, generally 2–6 in tall. Refer to label for specific weeds	Do not apply to stressed wheat. Do not apply the **enhanced** rate to soils above a pH of 7.5, except in the Texas Blacklands.	Clarity, Banvel, Buctril, 2,4-D, Express, Harmony Extra, Maverick, MCPA, Starane	Barley
Axial	8.2 oz	Annual grasses: wild oat, Italian ryegrass.	1- to 5-leaf stage and before 3 tillers develop	Apply at 2-leaf to boot stage. Adigor adjuvant must be used with this product at 9.6 oz/A. Do not apply to stressed wheat.	Ally, Amber, Finesse, Buctril, Harmoney Extra, MCPA	Barley

Postemergence herbicides (continued)

Herbicide	Product rate/acre	Weeds controlled	Weed application timing	Remarks	Tank mix options	Labeled in other small grains
Beyond	4–6 oz	Annual grasses: cheat, jointed goatgrass, wild oat, ryegrass, rescuegrass, feral rye. Annual broadleaves: mustards, henbit, primrose.	Grasses: 1- to 4-leaf stage Broadleaves: 1–3 in tall. Refer to label	Use only with **Clearfield wheat** seed. A surfactant and nitrogen-based fertilizer must be added to spray solution. A maximum of 8 oz/A can be applied each growing season. Seed cannot be saved. Refer to label for rotational restrictions.	Dicamba, 2,4-D, Buctril, Starane, Stinger, MCPA	None
Buctril 4 EC	0.75–1.0 pt	Annual broadleaves: kochia, field pennycress, corn groomwell.	8-leaf, 4 in height or rosette up to 2 in. Refer to label	Apply from crop emergence to boot stage. Good crop tolerance. Do not apply when crop covers weeds or crop is under water stress.	Many broadleaf and grass herbicides	Barley, oats, rye, triticale
Bronate 4 EC Buctril + MCPA	1.0–2.0 pt	Annual broadleaves: pepperweed, wild mustard, Russian thistle.	8-leaf, 4 in height or rosette up to 2 in. Refer to label	Apply when wheat is 3-leaf to boot stage.	Many options	Barley, oats, rye
Clopyralid (Stinger)	0.25–0.33 pt	Annual and perennial broadleaves: dandelion, sow thistle.	Up to 5-leaf stage. Thistles: rosette to bud stage	Apply when wheat is from 3-leaf to early boot stage. Rotation restriction of 10–18 months for sorghum. Avoid drift.	Refer to label	Barley, oats
2, 4-D 2,4-D 4 Amine 2,4-D 4 Low V Ester 2, 4-D 6 Low V Ester	 0.5–1.3 pt 0.5–1.3 pt 0.3–0.66 pt	Annual and perennial broadleaves: mustards, thistles, dock. Also garlic and onion.	Small weeds	Apply in the spring when wheat is full tiller but before boot stage. Crop injury may occur at higher rates.	Commonly tank-mixed with ALS herbicides	Barley, rye
Dicamba Banvel 4L Clarity 4L	 2–4 oz 2–4 oz	Annual and perennial broadleaves: wild buckwheat, kochia, Less effective on winter annual mustards.	Up to 2- to 3-leaf stage and/or rosettes up to 2 in across	Apply before wheat jointing stage. Early crop stages have more tolerance.	Commonly tank-mixed wiht ALS herbicides	Barley, oats
Express 75 XP	0.17–0.33 oz	Annual broadleaf weeds: mustards, pennycress, wild garlic.	Less than 4 in tall or wide	Apply after wheat is 2-leaf, but before flag leaf is visible. Short rotational restriction.	Assert, Banvel, Bromoxynil, 2,4-D, MCPA, Starane	Barley
Finesse DF (Glean + Ally)	0.2–0.4 oz	Annual broadleaves: mustards, curly dock, hentbit. Annual grasses: cheat, downy brome.	Grasses: 1- to 3-leaf stage. Broadleaves: refer to the label	Apply from 1 leaf to boot stage of wheat. Should not be used in soils with a pH above 7.9. Long rotation restrictions.	2,4-D, Dicamba, MCPA, Diuron, Bromoxynil, Metribuzin	Triticale, barley

Postemergence herbicides (continued)

Herbicide	Product rate/acre	Weeds controlled	Weed application timing	Remarks	Tank mix options	Labeled in other small grains
Finesse Grass + Broadleaf (Glean + Everest)	Rate I: 1 unit pack/30 acres Rate II: 1 unit pack/25 acres Rate III: 1 unit pack/20 acres	Annual grass: brome species, (not rescuegrass) wild oat, and ryegrass. Broadleaves: henbit, flixweed, mustards.	Grasses: 2-tiller or less. Broadleaves: varies on weed species; see label	Apply from 2-leaf to jointing. Crop injury may occur if applied at jointing or after. Ryegrass should be < 1 tiller.	2,4-D, Bromoxynil, Aim, Curtail or Stinger, Starane	None
Glean FC DF	0.17–0.33 oz	Annual broadleaves: tansy mustard, henbit. Suppression of annual ryegrass.	Small weeds (2 in across or 2 ft tall). Refer to label for specific species	Apply from 2-leaf stage but before boot stage of wheat. Application interval and rate are dependent on the location in Texas. See label. Do not apply to soil with a pH above 7.9.	Dicamba, Bromoxynil, MCPA, 2,4-D	Barley, oats, triticale
Harmony Extra DF	0.3–0.6 oz	Annual broadleaves: tansy mustard, chickweed.	Less than 4 in tall or wide	Apply from 2-leaf but before boot stage.	2,4-D, MCPA, Dicamba, Ally, Bromoxynil, Express, Hoelon	Triticale
Hoelon 3EC	1.33–2.66 pt	Annual grasses: ryegrass, wild oat.	1- to 4-leaf, depending on rate	Apply to wheat before jointing. Use crop oil concentrate surfactant. Do not apply if temperatures are below 35 degrees 3 days before application.	Amber, Glean, Bromoxynil, Harmony Extra, MCPA	Barley
Maverick Pro	0.66 oz	Annual broadleaves: tansy mustard, shepherdspurse, penny cress. Annual grasses: brome species, suppression of rescuegrass and wild oat.	2- to 3-leaf stage for grasses. Broadleaves weeds less than 2 in diameter	After 2-leaf stage but before jointing. Fertilizer should contain less than 50% liquid N and not exceed 30 lb N/A. Fall applications are typically more effective.	Bronate, Buctril, 2,4-D, MCPA, Sencor	None
MCPA 2 lb/gal - sodium salt 4 lb/gal – amine and ester formulations 6 lb/gal	 1.5–3.0 pt 0.5–1.0 pt 0.17–0.33 pt	Annual, biennial, perennial broadleaves: dandelion, yellow rocket, wild radish.	Annual weeds: small. Perennial weeds: at bud stage, but before wheat boot stage	After 4-leaf stage up to boot stage; high rate after tiller to early boot stage. Late season application for control of perennial weeds must be made before wheat boot stage.	Refer to label	Barley, oats, rye
Olympus 70 WD	0.6–0.9 oz; do not exceed 1.2 oz per crop per crop year	Annual grasses: brome species, wild oat; suppression of rescuegrass at high rates. Broadleaves: henbit, shepherdspurse, pennycress, pigweed, wild mustards. See label.	Best control on grasses between 2-leaf to 2-tiller stage. Best control on broadleaves less than 2 inches in diameter	Apply to winter and spring wheat before jointing to avoid crop injury. Fertilizer solutions should not exceed 50% liquid nitrogen.	Amber, Aim, Ally, Banvel, Bromate, Buctril, Clarity, Curtail, Finesse, Harmony, MCP, Peak, Rave, Sencor, Starane, 2,4-D	None

Postemergence herbicides (continued)

Herbicide	Product rate/Acre	Weeds controlled	Weed application timing	Remarks	Tank mix options	Labeled in other small grains
Olympus Flex (Olympus + Osprey)	3.0–3.5 oz	Annual grasses: brome species (except rescuegrass), wild oat, ryegrass. Broadleaves: mustards, chickweed.	Best control on grasses between 1-leaf to 2-tiller stage. Best on broadleaves less than 2 in diameter	Fall sown wheat only. Fertilizer solutions should not exceed 50% liquid nitrogen and not exceed 30 lb N/A.	Amber, Aim, Ally, Buctril, Finesse, Harmony, MCP, Peak, Sencor, Starane	None
Osprey	4.75 oz	Annual grass: Italian ryegrass, wild oat. Broadleaf weeds: henbit, pigweed, mustards.	Annual grasses: 1-leaf to 2-tiller stage Broadleaves: 1–2 in diameter	Apply to winter wheat before jointing to avoid crop injury. Apply with MSO (methylated seed oil) or other adjuvants mixed with ammonium nitrogen. Crop injury may occur if applied with some insecticides.	Ally, Buctril, Bronate, Curtail, Harmony, MCP, Peak, Starane, Stinger, Finesse	None
Peak WDG	0.38–0.5 oz	Annual broadleaves: prickly lettuce, pennycress, Russian thistle, kochia, tansy mustard, wild mustard.	1- to 2-leaf stage or 1- to 6-leaf stage, depending on weed species. Refer to label	Apply to wheat after emergence to before second node is detectable. Consult the product label for crop rotation restrictions.	Dicamba, Bronate, 2,4-D, MCPA; Refer to label	Barley, oats, rye, triticale
Rave 59 (WDG) (Amber + dicamba)	2.0–4.0 oz	Annual and perennial broadleaves: mustards, kochia, bindweed, curly dock.	1–4 in for most weeds; 1–12 in for mustard species	Apply after wheat emergence up to jointing. Consult label for early developing varieties (TAM 107 and Jagger).	Aim, Ally, Buctril, Bronate, 2,4-D.	Barley
Puma 1 EC	10.6 oz	Wild oat.	2-leaf to 2-tiller stage	Application to wheat from emergence to the 70 days before harvest. Do not exceed 10.6 oz/A annually.	Ally, Harmony Extra, MCP, Peak	Barley
Sencor 4L DF	 1.5–4.5 oz 1–6 oz	Annual broadleaves: henbit, filaree, shepherdspurse, pennycress. Annual grass suppression: cheat, bromegrass.	Grasses: less than 2 in. Broadleaves: less than 1 in	Wheat varietal sensitivity; refer to label. Apply after 2-leaf up to jointing stage. Do not apply when wheat is dormant. Correct timing is necessary to minimize crop injury. Rates vary by wheat stage, soil texture and organic matter. Do not use crop oil adjuvants. Crop injury may occur on high pH and sandy soils.	Ally, Amber, Finesse, Glean, Harmony Extra, 2,4-D, MCPA, Dicamba, Bronate, Buctril	Barley
Starane	0.33–0.66 pt	Annual and perennial broadleaves: chickweed, prickly lettuce, kochia.	Before 8 in tall or vining	Apply from 2-leaf stage up to flag leaf emergence. One application per season.	May be tank-mixed with other registered products. Refer to label	Barley, oats

Postemergence herbicides (continued)

Herbicide	Product rate/Acre	Weeds controlled	Weed application timing	Remarks	Tank mix options	Labeled in other small grains
Tiller EC (Puma+2,4-D+MCPA)	1–1.7 pt	Annual broadleaves: pennycress, mustards. Annual grasses: wild oat, volunteer corn.	Grasses: 2-leaf to 2-tiller. Broadleaves: less than 4 in	Apply after 3-tiller to jointing stage.	Buctril, Stinger, Peak, Starane. Refer to label	None

Harvest aid products labeled in wheat

Harvest aid	Product rate/acre	Weeds controlled	Pre-harvest interval	Crop application timing	Remarks	Tank mix options	Mode of action
Ally	0.1 oz	Annual broadleaf weeds	A waiting interval of 10 days is required before harvest	When wheat is in the dough	Do not use in soils with a pH exceeding 7.9. Weeds growing under limited moisture may not be controlled. Do not use straw for livestock feed.	2,4-D, Roundup	ALS inhibitor
Clarity 4L	0.5 pt/A	Annual and some perennial broadleaf weeds	A waiting interval of 10–14 days is required before harvest	When wheat is in the hard dough stage and the joints of the stem are no longer green	Do not use pre-harvest treated wheat for seed unless a germination test is conducted. Do not allow grazing or use of feed from treated area.	Ally, 2,4-D, Roundup	Growth regulator
Glyphosate Roundup Touchdown	 1.0–2.0 pt 1.0–2.0 pt	Annual and some perennial broadleaf and grass weeds	A waiting interval of 7 days is required before harvest	After hard dough stage of grain (less than 30% moisture)	Do not exceed 1 quart/A. Not recommended for wheat being harvested for seed. Do not feed treated straw or permit dairy or meat animals being finished for slaughter to graze treated grain fields within 7 days after treatment.	2,4-D, Clarity	ALS inhibitor
2,4-D 2,4-D 4 Low V Ester	1.0–2.0 pt	Annual and some perennial broadleaf weeds	Do not allow dairy cattle or slaughter animals to graze for 2 weeks after treatment	After wheat is in the hard dough stage	Do not use treated straw for livestock.	Ally, Clarity, Roundup	Growth regulator

Control of perennial weeds after wheat harvest

Post-harvest herbicides	Rate per acre	Weeds controlled	Application timing	Plant-back restrictions
2,4-D	1–3 qt	Annual and perennial broadleaf weeds, field bindweed	Apply during the bloom to bud stage while weeds are actively growing.	Allow 2 weeks after a 0.5 inch rainfall for 2,4-D to degrade before planting wheat.
Clarity 4L Dicamba 4L	1–2 qt	Perennial broadleaf weeds, field bindweed	Apply to 6- to 10-inch plants in September to October.	Plant back restrictions of 45 days per quart applied.
Paramount DF	5.3–8.0 oz	Annual grass and annual broadleaf weeds, field bindweed	Plants should be actively growing and at least 4 in long; Apply in fall just before first freeze. After tillage, allow 30 days for regrowth before herbicide application.	Restricted for use only in the High Plains of Texas. Refer to label for acceptable counties.
Roundup	4–5 qt	Annual and perennial grass and broadleaf weeds	Apply during the bloom to bud stage while weeds are actively growing.	No plant-back restrictions.
Tordon 22K	0.5–1.0 pt	Annual and perennial broadleaf weeds, bindweed	Apply during the bloom to bud stage while weeds are actively growing.	For use on non-cropland only or land to be planted to a small grain the following year.
Weedmaster (Premix) 2,4-D + Dicamba	1–2 qt	Annual and perennial broadleaf weeds	Apply after wheat harvest and before killing frost.	Allow 40 days between application and planting to prevent wheat injury. Do not exceed 4 qt/A per year.

Wheat herbicide restrictions and mode of action

Herbicide (common name, active ingredient)	Grazing and forage	Crop rotation restrictions	Mode of action[1]
Achieve SC Achieve Liquid (tralkoxydim)	Do not graze or hay for 30 days.	Cereals: 30 days. Other crops: 106 days.	ACCase
Affinity Broadspec (thifensulfuron-methyl + tribenuron-methyl); 1:1 ratio	Do not graze, feed forage, or hay.	Wheat and barley: anytime. Canola and sugarbeets: 60 days. Other crops: 45 days.	ALS inhibitor
Aim EW Aim EC (carfentrazone-ethyl)	Do not graze for 7 days.	Corn, cotton, sorghum, soybean and wheat: any time. Root and leafy vegetables: 30 days. Other crops: 12 months after an application.	Photosynthetic inhibitor
Ally XP (metsulfuron methyl)	No restrictions.	Corn: 12 mo. Cotton: 14–22 mo. Sorghum: 10 mo. Soybeans: 34 mo. Sunflowers: 22 mo.	ALS inhibitor
Ally Extra (Ally+Harmony Extra) (thifensulfuron methyl, tribenuron methyl, metsulfuron methyl)	Do not graze, feed forage, or hay.	Same as Ally XP.	ALS inhibitor
Axial (pinoxaden)	Do not graze or hay for 50 days.	Wheat: immediately. Root and leafy vegetables: 30 days. Other crops: 120 days.	ACCase
Amber 75 DF (triasulfuron)	No restrictions.	**Soil pH 7.9 or lower:** Corn: 22 mo. IR corn: 4 mo. Sorghum: 14 mo. Soybeans: 36 mo. STS soybeans: 11 mo. Other crops: field bioassay.	ALS inhibitor
Beyond (imazamox)	No restrictions for grazing or hay.	Clearfield wheat: anytime. Wheat: 3 mo. Corn: 8.5 mo. Cotton: 9 mo. Sorghum: 9 mo. Sunflowers: 9 mo.	ALS inhibitor
Buctril 4 EC (bromoxynil + MCPA)	Do not graze for 45 days.	Corn, sorghum: immediately. Most others: 1 mo.	Photosynthetic inhibitor
Bronate 4 EC (bromoxynil + MCPA)	Do not graze for 45 days.	Do not plant rotational crops within 30 days.	Photosynthetic inhibitor + Growth regulator
Stinger (clopyralid)	Do not graze for 7 days. Do not harvest hay.	Cereals and corn: immediately. Sorghum, alfalfa, sunflower: 10.5 mo.	Growth regulator
2,4-D 2,4-D 4 Amine 2,4-D 4 Low V Ester 2,4-D 6 Low V Ester	Do not graze for 14 days.	Corn: immediately. Cotton: refer to label. Sorghum, wheat: 0.5 mo. Soybeans: check label.	Growth regulator
Banvel 4L Clarity 4L (dicamba)	Do not graze for 7 days for lactating dairy cattle. No haying for 37 days.	Corn: immediately. Sorghum: 15 days. Others: after harvest.	Growth regulator

Wheat herbicide restrictions and mode of action (continued)

Herbicide (common name, active ingredient)	Grazing and forage	Crop rotation restrictions	Mode of action[1]
Express 75 XP (tribenuron methyl)	Do not graze or feed hay of treated area.	Wheat: anytime. Most other crops: 45 days (see label for exceptions).	ALS inhibitor
Finesse DF (Glean + Ally) (chlorsulfuron + metsulfuron methyl)	No grazing restrictions.	Corn: 11 mo. Sorghum: 14–26 mo. Cotton: 14–26 mo or field bioassay, depending on area, pH, and rainfall. Other crops: perform a field bioassay before planting.	ALS inhibitor
Finesse Broadleaf + Grass (Glean + Everest) (chlorosulfuron + flucarbazone-sodium)	Do not harvest grain for 60 days.	**Soil pH 7.9 or lower:** Wheat: 4 mo. Barley: 10 mo. Soybeans (STS): 9 mo. Soybeans: 14 mo. Other crops: perform a field bioassay before planting.	ALS inhibitor
Glean FC DF (chlorsulfuron)	No grazing restrictions.	Sorghum: 14–25 mo. Cotton: 14–26 mo or field bioassay dependent on area, pH, and rainfall. Other crops: perform a field biassay before planting.	ALS inhibitor
Harmony Extra DF (thifensulfuron-methyl + tribenuron-methyl)	Do not graze, feed forage, or hay.	Wheat: anytime. Most other crops: 45 days after application (see label for exceptions).	ALS inhibitor
Hoelon 3EC (diclofop-methyl)	Do not graze for 28 days. Do not harvest forage or hay before grain harvest.	All crops may be planted after harvest.	ACCase
Maverick Pro (sulfosulfuron)	No grazing restrictions. Do not hay 30 days.	**Soil pH 7.5 or lower:** Wheat: anytime. Corn, sorghum, sunflower: 22 mo. Cotton, soybean: 12 mo.	ALS inhibitor
MCPA (chlorophenoxyacetic acid)	Do not graze for 7 days.	Not stated on label.	Growth regulator
Olympus (propoxycarbazone- sodium)	No grazing restrictions.	Wheat : anytime. Cotton, sorghum, soybean, sunflower: 12 mo. Corn: 18 mo.	ALS inhibitor
Olympus Flex (Olympus + Osprey) (propoxycarbazone-sodium + mesosulfuron-methyl)	No grazing restrictions.	Wheat: anytime. Soybean: 5 mo. Sorghum: 9 mo. Cotton: 10 mo. Corn: 12 mo.	ALS inhibitor
Osprey (mesosulfuron-methyl)	Do not apply 30 days before harvesting for forage. Hay and silage: 60 days.	Wheat: 7 days. Barley, sunflower: 1 mo. Cotton, soybean, peanuts: 3 mo. Corn: 12 mo. Other crops: 10 mo.	ALS inhibitor
Peak WDG (prosulfuron)	Do not graze for 30 days. Silage: 40 days. Grain: 60 days.	**Soil pH below 7.8:** Wheat, IR corn: immediately. Corn, sorghum: 1 mo. STS soybeans, soybeans, cotton: 10 mo. **Refer to label for specifics.**	ALS inhibitor

Wheat herbicide restrictions and mode of action (continued)

Herbicide (common name, active ingredient)	Grazing and forage	Crop rotation restrictions	Mode of action[1]
Puma 1EC (fenoxaprop-p-ethyl + safener)	No grazing restrictions.	Refer to label.	ACCase
Rave 59 WDG (triasulfuron + dicamba)	Do not graze for 7 days for dairy cattle or 30 days before slaughter.	**Soil pH 7.9 or lower:** Corn: 22 mo.; IR corn: 4 mo. Sorghum: 14 mo. Soybeans: 36 mo. STS soybeans: 11 mo. Other crops: refer to label.	ALS + Growth regulator
Sencor 4L and DF (metribuzin)	Do not graze for 14 days.	Soybean, alfalfa: 4 mo. Wheat, cotton, barley: 8 mos. Other crops: 12 mo.	Photosynthetic inhibitor
Starane (fluroxypyr)	Do not graze for 7 days.	If replanting is required, only wheat, barley or oats may be planted within 120 days after application.	Growth regulator
Tiller EC (fenoxaprop-p-ethyl + 2,4-D + chlorophenoxyacetic acid)	Do not graze.	Refer to label.	ACCase + Growth regulator

[1]**Mode of action** is the primary biochemical or biophysical event that a herbicide directly affects and results in the death of the plant.
ACCase herbicides inhibit the enzyme acetyl-CoenzymeA carboxylase in the pathway leading to lipid synthesis in plants.
ALS inhibitor herbicides disrupt the pathways leading to amino acid production in plants. Herbicides include sulfonylurea and imadazolinone herbicides
Growth regulator herbicides disrupt hormone balance and protein synthesis in the plant leading to weak cells walls and rapid cell proliferations
Mitotic disruptor herbicides inhibit cell division and prevent shoot and root elongation.
Photosynthetic inhibitor herbicides inhibit electron transport in the photosynthetic reaction of plants.

Herbicide efficacy for grasses and weeds

	Grasses							Broadleaf weeds																						
Herbicides	**Japanese/Downy brome**	**Cheat**	**Feral rye**	**Italian ryegrass***	**Jointed goatgrass**	**Rescue grass**	**Wild oat**	**Bushy wallflower (W)**	**Carolina geranium (W)**	**Chickweed (W)**	**Corn gromwell (W)**	**Curly dock (S)**	**Cutleaf primrose (W)**	**Field bindweed (S)**	**Field pennycress**	**Flixweed/Tansy mustard (W)**	**Henbit (W)**	**Horseweed (S)**	**Kochia (S)**	**Pepperweed (W)**	**Pigweed (S)**	**Prickly lettuce (W)**	**Red horned poppy (S)**	**Russian thistle (S)**	**Shepherd's purse (W)**	**Smallseed falseflax (S)**	**Sow thistle**	**Sunflower (S)**	**Mustard**	**Blue mustard**
Preplant																														
Amber DF	F	F	P	F	P	P	P	E	E	E		G	E	P		E	E	G	FG	P	E	G		G	E	G		E		E
Finesse DF	P	P	P	G	P	P	P	E	E	E	E	G	E	P		E	E	G	FG	P	E	E	E	F	E	E		E		E
Preemergence																														
Amber DF	F	F		G								G	E	P	E	E	G	G	FG	P	G	G		G	E	G		E		E
Finesse DF	F	F		F								G	E	P	E	E	E	G	FG	P	G	F		F	E	E		E		E
Glean FC				F								G	E	P		E		G	FG	P	G				E	E		E		
Hoelon 3EC				E																										
Maverick Pro	G	GE		F										P	E		F											E		
Postemergence																														
Achieve 40DG				P			P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Aim WDG	P	P	P	P	P	P	P	G		P			F	F	E	GE	G	F	G	G	G	F		G	G			G		GE
Ally DF	P	P	P	P	P	P	P	G						P	E	GE	E	G	F		G	G		F	G			F		E
Amber 75 DF	P	P	P	P	P	P	P	G					G	P	E	GE	F	G	FG		G	E		FG	G	G		E		E
Assert 2.5LC																														
Banvel	P	P	P	P	P	P	P	E						G	FG	E	E	FG	GE		E	G		E	E			E		FG
Beyond	E	E	G	G	E	G	E	G						G		G	P	P	P		P	P			G			P		
Bromoxynil 4 EC	P	P	P	P	P	P	P	G		F	G	G	P	P	GE	G	F	F	GE	G	G	G		G	G			G		G
Bronate 4 EC	P	P	P	P	P	P	P												GE		G			E				G		
Clopyralid (Stinger)																														
2, 4-D	P	P	P	P	P	P	P	E		P	P	G	G	G	E	E	F	P	G		G	G		E	E	G		G		G

Herbicide efficacy for grasses and weeds (continued)

	Grasses							Broadleaf weeds																						
Herbicides	Japanese/Downy brome	Cheat	Feral rye	Italian ryegrass*	Jointed goatgrass	Rescue grass	Wild oat	Bushy wallflower (W)	Carolina geranium (W)	Chickweed (W)	Corn gromwell (W)	Curly dock (S)	Cutleaf primrose (W)	Field bindweed (S)	Field pennycress	Flixweed/Tansy mustard (W)	Henbit (W)	Horseweed (S)	Kochia (S)	Pepperweed (W)	Pigweed (S)	Prickly lettuce (W)	Red horned poppy (S)	Russian thistle (S)	Shepherd's purse (W)	Smallseed falseflax (S)	Sow thistle	Sunflower (S)	Mustard	Blue mustard
Postemergence (cont.)																														
Express 75 DF	P	P	P	P	P	P	P	G						P		GE		F	G		G	G		G	G			F		GE
Finesse DF	P	P	P	F	P	P	P	E	E	E	E	E	E	P	E	GE	E	E	F	P		E	E	F	E	E		F		E
Finesse Broadleaf + Grass	F	G	P	F	P	P	G	E	E	E	E		E	P		E	E			P		E	E		E	E		F		GE
Glean FC (DF)	P	P	P	F	P	P	P	E	E	E	E		E		E	E	E		G	P		E	E	G	E	E		F		
Harmony Extra (DF)**	P	P	P	P	P	P	P	E		G	G	E	F	P	G		G	FG	G	G	G	G		G	G			G		GE
Hoelon 3(EC)	P	P	P	E	P	P	E	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P		P		
Maverick Pro***	F	E	P	F	P	P	F	G							E	G	P	F	P		P	F		P	G			P		F
MCPA	P	P	P	P	P	P	P							F	G		F	P	P		F	F	F	F	G			F		P
Olympus	G	E	P	P	P	P	G	G	P	G	P		P	P	E	E	F		P		F	F		P	E	E		F		G
Osprey	F	F	P	G	P	P	E			F			F		F		F				F				F					
Peak (WDG)	P	P	P	P	P	P	P	G		G			G	P	E	E	P	F	F		G	G		G		G		G		
Puma 1(EC)	P	P	P		P	P		P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P		P		
Rave 59 (WDG)	P	P	P	P	P	P	P	E		G		G	G	FG		E	G	G	E	G	E	E		E	E	G		E		G
Sencor	G	E		E						E		P			F		G	G		E					F					
Starane															G				GE											
Tiller (EC) – Premix																														
Harvest aids																														
Ally																														
Clarity																														
Glyphosate	E	E	E	E	E	E	E																							

Herbicide efficacy for grasses and weeds (continued)

	Grasses							Broadleaf weeds																						
Herbicides	**Japanese/Downy brome**	**Cheat**	**Feral rye**	**Italian ryegrass***	**Jointed goatgrass**	**Rescue grass**	**Wild oat**	**Bushy wallflower (W)**	**Carolina geranium (W)**	**Chickweed (W)**	**Corn gromwell (W)**	**Curly dock (S)**	**Cutleaf primrose (W)**	**Field bindweed (S)**	**Field pennycress**	**Flixweed/Tansy mustard (W)**	**Henbit (W)**	**Horseweed (S)**	**Kochia (S)**	**Pepperweed (W)**	**Pigweed (S)**	**Prickly lettuce (W)**	**Red horned poppy (S)**	**Russian thistle (S)**	**Shepherd's purse (W)**	**Smallseed falseflax (S)**	**Sow thistle**	**Sunflower (S)**	**Mustard**	**Blue mustard**
Post-harvest herbicides																														
2,4-D	P	P	P	P	P	P	P					F		F				F	G		G									
Dicamba																														
Paramount (DF)																														
Roundup	E	E	E	E	E	E	E	E	E	E	E	E	G	G		E	E	F	E	E	E	E			E					
Tordon 22K																														
Weedmaster (Premix)																														

*Ratings are for Italian ryegrass with **no** herbicide resistance; however, herbicide-resistant Italian ryegrass (resistant to ALS herbicides) is present in Texas.
**Harmony GT ratings
***Maverick ratings

P=Poor F=Fair G=Good E=Excellent GE=Good to Excellent S=Summer W=Winter

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