

TABLE 3A — Chemical Weed Control in Small Grains

Direct-Drilled Small Grains (No-Till)

(fall or spring seedings following soybeans, corn or dry edible beans)

In general, complete control of all plants present at the time of planting is required for successful weed control. With direct drilling (no-till), vegetation control is accomplished before planting with burndown herbicides such as paraquat (*Gramoxone Inteon*) or glyphosate. The required application rate varies, depending on weed species and size. Refer to the product labels for details. *Gramoxone Inteon* provides faster kill. Glyphosate is preferred if perennial weeds are present, but fields with serious perennial weed problems should not be direct drilled with a small grain until the perennial weeds have been controlled.

The need for a burndown herbicide depends on the species of weeds present. If no weeds are present, a burndown herbicide is not needed. For fall-seeded small grains, fields with small seedlings of species that do not overwinter (summer annuals only) and are present at low densities do not need a burndown herbicide. If the weeds are large, however, or capable of overwintering (winter annuals, biennials or perennials) or if identification of the weeds cannot be confirmed, a burndown herbicide should be used. For spring-seeded small grains, a burndown herbicide should be used if any weeds are present at planting time, regardless of species or size.

Herbicides applied after small grain emergence are not affected by the tillage system used. All of the herbicides listed below can be used in all tillage systems including direct drilling. No weed problems are unique to no-till small grain production. Therefore, no-till small grain production does not present any special weed control concerns.

Barley and Wheat Without Legume Seedings — All Tillage Systems

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Annual broadleaves	2,4-D amine	0.5	1 pt 4L	<ul style="list-style-type: none"> • Apply in the spring to actively growing grain following tillering (usually about 6-8 inches high) but prior to jointing (between 3 and 6 on Feeke's scale). DO NOT TREAT GRAIN IN BOOT TO DOUGH STAGE. The boot stage is when the upper sheath is beginning to swell with the enlarging head. • Do not apply in the fall. • Most effective when weeds are small (less than 4 inches). • Not effective on smartweed and wild buckwheat. • If 2,4-D ester is used, an application rate no higher than 0.38 lb ai/A is advised. 2,4-D ester mixes easier with 28% liquid nitrogen.
	bromoxynil (<i>Buctril, Moxxy</i> , others)	0.35	1.5 pt 2L	<ul style="list-style-type: none"> • May be applied from emergence up to boot stage (between 1 and 9 on Feeke's scale). • Good coverage is essential. • Bromoxynil must be applied to small weeds for effective control (see label). • Redroot pigweed and mustard must be controlled when very small (refer to label for details). • Very good crop safety.

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Barley and Wheat Without Legume Seedings (continued)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
<i>(continued)</i>				
Annual broadleaves	dicamba <i>(Banvel, Clarity)</i>	0.125	0.25 pt 4L	<ul style="list-style-type: none"> • Apply in spring to actively growing grain with a well established secondary root system or following tillering but prior to jointing (between 3 and 6 on Feeke's scale). • Some wheat varieties are sensitive to dicamba. • DO NOT APPLY <i>DICAMBA</i> TO WHEAT VARIETIES WAKEFIELD OR MADISON—SEVERE INJURY AND YIELD LOSS WILL LIKELY OCCUR. • Do not apply to spring-seeded barley. • Most effective when weeds are small (less than 4 inches). • See remarks and limitations for dicamba in "Corn—Postemergence" section. • More effective than 2,4-D on smartweed, wild buckwheat, and perennials.
	thifensulfuron methyl + tribenuron methyl <i>(Harmony Extra)</i> + surfactant	0.023	0.5 oz. 75DF + 0.25%	<ul style="list-style-type: none"> • Apply to winter wheat and barley after the crop is in the 2-leaf stage but before the flag leaf is visible (between 1.2 and 7.9 on Feeke's scale). • Most effective if weeds are small (4 inches or less). • Addition of surfactant is essential for adequate results. • <i>Harmony Extra</i> may be tank mixed with 2,4-D amine, MCPA or <i>Buctril</i> for more rapid weed kill and improved control of ragweed. Tank mixes with 2,4-D may improve thistle control but also carry a greater risk of crop injury. To reduce this risk, apply 2,4-D at no more than 0.5 pt/A (0.25 lb ai/A) and reduce surfactant concentration to 0.125%. The lower surfactant concentration may reduce velvetleaf control. Observe the timing restrictions for 2,4-D, MCPA, and <i>Buctril</i> when tank mixing with <i>Harmony Extra</i>. Do not tank mix with dicamba — reduced control (antagonism) may occur. • Tank mixes with <i>Buctril</i> may reduce Canada thistle control. • For severe infestation, increase <i>Harmony Extra</i> rate to 0.6 oz./A. • For mayweed (dogfennel) control, <i>Harmony Extra</i> rate may be reduced to 0.3 oz./A. • Control of common ragweed is inconsistent. • Caution: If liquid nitrogen fertilizer is used as the herbicide carrier, leaf burn, yellowing, and stunting are likely. With favorable growing conditions the symptoms are temporary, but this practice is not recommended.

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Barley and Wheat Without Legume Seedings (continued)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
<i>(continued)</i>				
Annual broadleaves	thifensulfuron methyl (<i>Harmony GT</i>) + surfactant	0.023	0.5 oz. 75DF + 0.25%	<ul style="list-style-type: none"> • Apply to winter wheat and barley after the crop is in the 2-leaf stage but before the flag leaf is visible (between 1.2 and 7.9 on Feeke's scale). • Most effective if weeds are small (4 inches or less). • Addition of surfactant is essential for adequate results. • <i>Harmony GT</i> may be tank mixed with 2,4-D amine, MCPA or <i>Buctril</i> for more rapid weed kill and improved control of ragweed. Tank mixes with 2,4-D may improve thistle control but also carry a greater risk of crop injury. To reduce this risk, apply 2,4-D at no more than 0.5 pt/A (0.25 lb ai/A) and reduce surfactant concentration to 0.125%. The lower surfactant concentration may reduce velvetleaf control. Observe the timing restrictions for 2,4-D, MCPA, and <i>Buctril</i> when tank mixing with <i>Harmony GT</i>. Do not tank mix with dicamba — reduced control (antagonism) may occur. • Tank mixes with <i>Buctril</i> may reduce Canada thistle control. • For severe infestation, increase <i>Harmony GT</i> rate to 0.6 oz./A. • For mayweed (dogfennel) control, <i>Harmony Extra</i> rate may be reduced to 0.3 oz/A. • Control of common ragweed is inconsistent. • Caution: If liquid nitrogen fertilizer is used as the herbicide carrier, leaf burn, yellowing, and stunting are likely. With favorable growing conditions the symptoms are temporary, but this practice is not recommended.
	clopyralid + 2,4-D amine (<i>Curtail</i>)	0.094 + 0.5	2 pt 2.38L	<ul style="list-style-type: none"> • For control of annual broadleaves and suppression of Canada thistle. • Apply to wheat and barley following tillering but prior to jointing (between 3 and 6 on Feeke's scale). DO NOT APPLY AFTER THE BOOT STAGE. The boot stage is when the upper sheath is beginning to swell with the enlarging head. • Do not treat a field with <i>Curtail</i> that has been treated previously with 2,4-D or dicamba. • See Table 12 for crop rotation restrictions. • Rotation interval for soybeans and dry beans is extended to 18 months if soils contain less than 2% organic matter and natural precipitation is less than 15 inches during the 10.5 months following treatment.
ONLY ragweed, cocklebur, jimsonweed, and mayweed	clopyralid (<i>Stinger</i>)	0.094	0.25 pt 3L	<ul style="list-style-type: none"> • Apply to wheat or barley from the 3-leaf stage to boot stage (between 1.3 and 9 on Feeke's scale). See label for details. • Do not apply to small grains underseeded with a legume. • May be tank mixed with 2,4-D, dicamba, <i>Buctril</i>, <i>Harmony Extra</i> or <i>Express</i> for control of additional weeds. See label for details on rates. • See Table 12 for crop rotation restrictions.
Common ragweed, giant ragweed, cocklebur, velvetleaf, hemp dogbane	fluroxypyr (<i>Starane</i>)	0.1238	0.66 pt 1.5L	<ul style="list-style-type: none"> • Apply from 2-leaf stage up to and including flag leaf emergence (between 1.2 and 9 on Feeke's scale). • Apply to actively growing weeds up to 8 inches tall. • Narrow spectrum of weeds controlled. • Do not apply to small grains underseeded with a legume. • No crop rotation restrictions. • Do not allow livestock to graze treated areas or harvest treated forage within 7 days of application. • Do not apply closer than 40 days before harvesting of grain or straw.

Barley and Wheat Without Legume Seedings (continued)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Perennials (bindweed, thistles)	2,4-D ester	0.75	1.5 pt 4L	<ul style="list-style-type: none"> • Apply in the spring to actively growing grain following tillering (usually about 6-8 inches high) but prior to jointing (between 3 and 6 on Feeke's scale). DO NOT TREAT GRAIN IN BOOT TO DOUGH STAGE. The boot stage is when the upper sheath is beginning to swell with the enlarging head. • Will provide suppression only. • Injury may occur. • Some control of wild onion and wild garlic.
	dicamba (<i>Banvel, Clarity</i>)	0.125	0.25 pt 4L	<ul style="list-style-type: none"> • Apply in spring to actively growing grain with a well established secondary root system or following tillering but prior to jointing (between 3 and 6 on Feeke's scale). • Some wheat varieties are sensitive to dicamba. • DO NOT APPLY <i>DICAMBA</i> TO WHEAT VARIETIES WAKE-FIELD OR MADISON — SEVERE INJURY AND YIELD LOSS WILL LIKELY OCCUR. • Do not apply to spring-seeded barley. • Will provide suppression only. • See remarks and limitations for dicamba in "Corn — Postemergence" section. • Some control of wild onion and wild garlic.
Perennials (Canada thistle, sowthistle)	tribenuron methyl (<i>Express</i>) + surfactant	0.016	0.33 oz. 75DF + 0.25%	<ul style="list-style-type: none"> • Apply after the crop has reached the 2-leaf stage but before the flag leaf is visible (between 1.2 and 7.9 on Feeke's scale). • Apply when thistles are actively growing and 4-8 inches tall with 2-6 inches of new growth. • Addition of surfactant is essential for adequate results. • <i>Express</i> may be tank mixed with 2,4-D amine, MCPA or <i>Buctril</i> for more rapid weed kill and improved control of ragweed. Tank mixes with 2,4-D may improve thistle control but also carry a greater risk of crop injury. To reduce this risk, apply 2,4-D at no more than 0.5 pt/A (0.25 lb a.i./A) and reduce surfactant concentration to 0.125%. The lower surfactant concentration may reduce velvetleaf control. Observe the timing restrictions for 2,4-D, MCPA, and <i>Buctril</i> when tank mixing with <i>Express</i>. Do not tank mix with dicamba — reduced control (antagonism) may occur. • Tank mixes with <i>Buctril</i> may reduce Canada thistle control. • Spectrum of annual weeds controlled is narrower than with <i>Harmony Extra</i>. • Do not exceed 0.33 oz. product per acre to any one crop during one growing season. • Do not plant treated area to any crop other than wheat or barley for 60 days after application. • Do not apply to wheat or barley underseeded with another crop. • Injury symptoms will appear on weeds in 1-3 weeks after application. • Very good crop safety. • Special sprayer clean-out procedure required (see <i>Express</i> label). • Caution: If liquid nitrogen fertilizer is used as the herbicide carrier, leaf burn, yellowing, and stunting are likely. With favorable growing conditions the symptoms are temporary, but this practice is not recommended.

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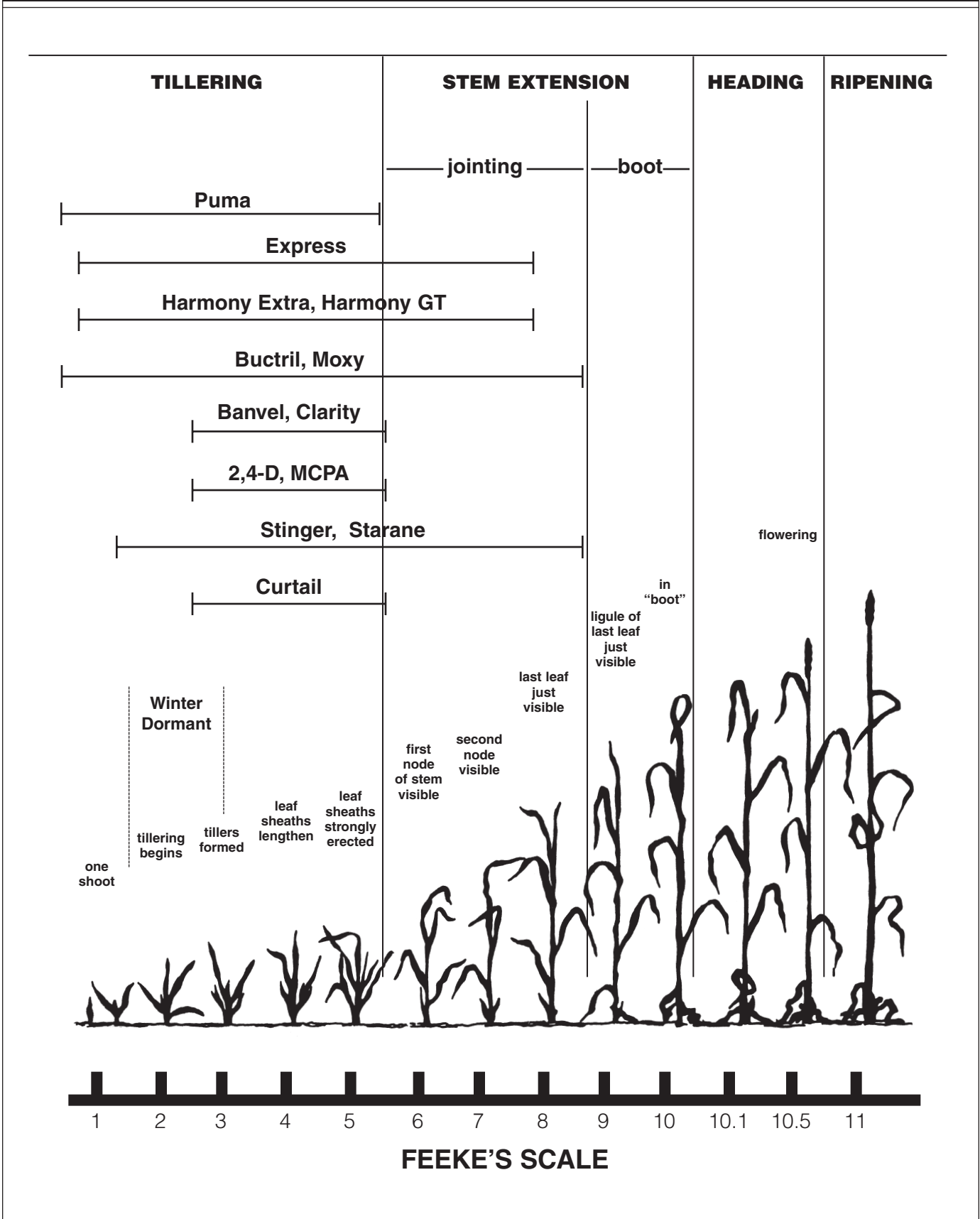
Barley and Wheat Without Legume Seedings (continued)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
<i>(continued)</i>				
Perennials (Canada thistle, sowthistle)	thifensulfuron methyl + tribenuron methyl (<i>Harmony Extra</i>) + surfactant	0.028	0.6 oz 75DF + 0.25%	<ul style="list-style-type: none"> • See remarks and limitations on <i>Harmony Extra</i> for control of annual broadleaves. • Apply when thistles are actively growing and 4-8 inches tall with 2-6 inches of new growth. • <i>Harmony Extra</i> controls a wider spectrum of annual weeds than <i>Express</i>. • <i>Harmony Extra</i> may be tank mixed with 2,4-D amine, MCPA or <i>Buctril</i> for more rapid weed kill and improved control of ragweed. Tank mixes with 2,4-D may improve thistle control but also carry a greater risk of crop injury. To reduce this risk apply 2,4-D at no more than 0.5 pt/A (0.25 lb a.i./A) and reduce surfactant concentration to 0.125%. The lower surfactant concentration may reduce velvetleaf control. Observe the timing restrictions for 2,4-D, MCPA, and <i>Buctril</i> when tank mixing with <i>Harmony Extra</i>. Do not tank mix with dicamba — reduced control (antagonism) may occur. • Tank mixes with <i>Buctril</i> may reduce Canada thistle control. • Do not plant treated area to any crop other than wheat, barley or oats for 60 days after application.
	clopyralid (<i>Stinger</i>)	0.125	0.33 pt 3L	<ul style="list-style-type: none"> • Treat thistle plants between rosette stage and bud stage for suppression. • Apply to wheat and barley from the 3-leaf stage to boot stage (between 1.3 and 9 on Feeke's scale). See label for details. • See remarks and limitations for <i>Stinger</i> for annual broadleaves. • See Table 12 for crop rotation restrictions.
Wild garlic, Wild onion	thifensulfuron methyl + tribenuron methyl (<i>Harmony Extra</i>) surfactant	0.028 +	0.6 oz 75DF + 0.25%	<ul style="list-style-type: none"> • See remarks and limitations of <i>Harmony Extra</i> for control of annual broadleaves. • Apply when wild garlic plants are less than 12 inches tall with 2-4 inches of new growth. • For best results, treat actively growing wild garlic when air temperature is at least 60°F. • Less effective for wild onion control. • Do not plant treated area to any crop other than wheat, barley or oats for 60 days after application.
	dicamba (<i>Banvel, Clarity</i>) + 2,4-D	0.125 + 0.5	0.25 pt 4L + 1 pt 4L	<ul style="list-style-type: none"> • Apply in the spring to actively growing grain following tillering (usually about 6-8 inches high) but prior to jointing. DO NOT TREAT GRAIN IN BOOT TO DOUGH STAGE. The boot stage is when the upper sheath is beginning to swell with the enlarging head. • Some wheat varieties are sensitive to dicamba. • DO NOT APPLY DICAMBA TO WHEAT VARIETIES WAKEFIELD OR MADISON — SEVERE INJURY AND YIELD LOSS WILL LIKELY OCCUR. • Do not apply to spring-seeded barley. • May use either ester or amine 2,4-D. • Provides suppression only. • See remarks and limitations for dicamba in "Corn — Postemergence" section.

Barley and Wheat Without Legume Seedings (continued)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Windgrass	fenoxaprop-p-ethyl (<i>Puma</i>)	0.082	0.66 pt 1EC	<ul style="list-style-type: none"> • <i>Puma</i> will only control emerged grass weeds. Rate of application varies based on weed species present to be controlled. • Do not apply <i>Puma</i> within 57 and 70 days of harvesting barley and wheat, respectively. • <i>Puma</i> can be applied on wheat and barley from crop emergence up to the 5-leaf stage, but not after jointing begins (between 1 and 6 on Feeke's scale). • <i>Puma</i> will control susceptible grass weeds in the 1-leaf to 2-tiller stage of growth. • May be tank mixed with other herbicides to improve broadleaf weed control. See label for tank mix partners and details on rates. • May be tank mixed with either <i>Furadan</i>, <i>Sevin</i>, or <i>Warrior</i> insecticides. Do not tank mix with malathion. • May be tank mixed with mancozeb, <i>Tilt</i> and <i>Stratego</i> (without additional adjuvant), or <i>Topsin M</i> fungicides. • No rotation restrictions.

FIGURE 1 — Wheat growth stages according to Zadoks' decimal code and Feeke's scale. Management inputs are indicated.



Oats Without Legume Seedings — All Tillage Systems

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Annual broadleaves	2,4-D amine	0.38	0.75 pt 4L	<ul style="list-style-type: none"> • Apply in the spring to actively growing grain following tillering (usually about 6-8 inches high) but prior to jointing. DO NOT TREAT GRAIN IN BOOT TO DOUGH STAGE. The boot stage is when the upper sheath is beginning to swell with the enlarging head. • Most effective when weeds are small (less than 4 inches). • Some yield reduction may occur but generally less than that caused by weeds.
	MCPA	0.38	0.75 pt 4L	<ul style="list-style-type: none"> • Less injurious and less effective than 2,4-D. • Most effective when weeds are small (less than 4 inches). • Apply at or after full tillering but before the boot stage (the first node is detectable and the grain is usually 6-8 inches tall at full tillering; the boot stage is when the upper sheath is beginning to swell with the enlarging head).
	bromoxynil (<i>Buctril, Moxy</i>)	0.38	1.5 pt 2L	<ul style="list-style-type: none"> • May be applied from emergence up to boot stage. • Good coverage essential. • Bromoxynil must be applied to small weeds for effective control (see label). • Redroot pigweed and mustard must be controlled when very small (refer to label for details). • Very good crop safety.
	thifensulfuron methyl + tribenuron methyl (<i>Harmony Extra</i>) + surfactant	0.018	0.4 oz.75DF + 0.25%	<ul style="list-style-type: none"> • Apply to oats in the 3- to 5-leaf stage but before jointing. • Do not exceed 0.4 oz. product per acre to any one crop during one growing season. • Do not apply to Ogle, Porter, or Premier varieties. • Most effective if weeds are small (4 inches or less). • Addition of surfactant is essential for adequate results. • Control of common ragweed is inconsistent. • Do not graze or feed forage or hay from treated areas to livestock. (Dry-harvested straw may be used for bedding and/or feed.) • Do not plant treated area to any crop other than wheat, barley, or oats for 60 days after application. • Do not apply to oats underseeded with another crop. • Injury symptoms will appear on weeds in 1-3 weeks after application. • Special sprayer clean-out procedure required (see <i>Harmony Extra</i> label).
	thifensulfuron methyl (<i>Harmony GT</i>) + surfactant	0.018	0.4 oz.75DF + 0.25%	<ul style="list-style-type: none"> • Apply to oats in the 3- to 5-leaf stage but before jointing. • Do not exceed 0.4 oz. product per acre to any one crop during one growing season. • Do not apply to Ogle, Porter, or Premier varieties. • Most effective if weeds are small (4 inches or less). • Addition of surfactant is essential for adequate results. • Control of common ragweed is inconsistent.

Oats Without Legume Seedings —All Tillage Systems (continued)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
ONLY ragweed, cocklebur and jimsonweed	clopyralid (<i>Stinger</i>)	0.094	0.25 pt 3L	<ul style="list-style-type: none"> Apply to oats from the 3-leaf stage to boot stage. See label for details. Do not apply to oats underseeded with a legume. May be tank mixed with <i>Buctril</i> for control of additional weeds. See Table 12 for crop rotation restrictions.
Common ragweed, giant ragweed, cocklebur, velvetleaf, hemp dogbane	fluroxypyr (<i>Starane</i>)	0.1238	0.66 pt 1.5L	<ul style="list-style-type: none"> Apply from 2-leaf stage up to and including flag leaf emergence (between 1.2 and 9 on Feeke's scale). Apply to actively growing weeds up to 8 inches tall. Narrow spectrum of weeds controlled. Do not apply to small grains underseeded with a legume. No crop rotation restrictions. Do not allow livestock to graze treated areas or harvest treated forage within 7 days of application. Do not apply closer than 40 days before harvesting of grain or straw.

Small Grains Seeded to Legumes — All Tillage Systems

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Annual broadleaves	MCPA	0.19	0.38 pt 4L	<ul style="list-style-type: none"> Apply in the spring to actively growing grain following tillering (usually about 6-8 inches high) but prior to jointing. DO NOT TREAT GRAIN IN BOOT TO DOUGH STAGE. The boot stage is when the upper sheath is beginning to swell with the enlarging head. A canopy of grain and weeds over the seeding will reduce the possibility of injury to the legume. Apply in 5-6 gal of water/A to minimize crop injury. Sweet clover is very sensitive to MCPA.
	bromoxynil (<i>Buctril, Moxy</i>)	0.38	1.5 pt 2L	<ul style="list-style-type: none"> SMALL GRAINS SEEDED WITH ALFALFA ONLY. Apply after alfalfa has reached at least the 4 trifoliolate stage and between emergence and boot stage of wheat or barley. Do not treat when air temperatures exceed 70°F at and for 3 days following application or unacceptable alfalfa injury may occur. Do not use any spray additives or increased injury may occur. Alfalfa leaf burn following application is likely, but plants recover rapidly in favorable growing conditions. Warm, humid conditions enhance leaf burn. Less injurious than MCPA. Do not treat when plants are under stress. Rate may be reduced to 1 pt/A for greater crop safety (see label for weed sizes). With ground application, use a minimum of 20 gal of water/A and 30 psi. For best results, weeds must be small (see label for details). Redroot pigweed and wild mustard must be controlled when very small (refer to label for details). Weak on common chickweed. Do not graze or cut for feed for 30 days after application.

**TABLE 3B — Harvest Restrictions for Small Grain Herbicides
(as indicated on the product labels)**

Herbicide	Restrictions
Banvel/Clarity	A waiting interval of 7 days is required before harvest. Do not use preharvest-treated wheat for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better. If small grains are used for pasture or hay, consult the label for harvesting restrictions.
Buctril	Do not graze treated fields for 45 days following application.
Curtail/Stinger	Do not cut treated grass for hay within 30 days after application. Remove meat animals from freshly treated areas 7 days before slaughter. Withdrawal is not needed if 2 weeks have elapsed since application. Do not graze dairy animals in treated areas for 14 days after application. Do not use hay or straw from treated areas or manure from animals grazed in treated areas for composting or mulching on susceptible broadleaf crops. Do not transfer livestock from treated grazing areas onto sensitive broadleaf crop areas without first allowing 7 days of grazing on an untreated pasture. Otherwise, urine may contain enough clopyralid to cause injury to sensitive broadleaf plants. Do not permit dairy animals or meat animals being finished for slaughter to forage or graze treated grain fields within 1 week after treatment. Do not harvest hay from treated fields.
Express/ Harmony Extra	Do not graze livestock in treated areas. In addition, do not feed forage or hay from treated areas to livestock (harvested straw may be used for bedding and/or feed).
Harmony GT	Do not graze or feed forage or hay from treated areas to livestock (harvested straw may be used for bedding and/or feed).
MCPA	Do not allow livestock to forage or graze treated areas within 7 days of slaughter.
Puma	Do not apply within 57 and 70 days of harvesting barley and wheat, respectively.
2,4-D	Do not permit dairy animals or meat animals being finished for slaughter to forage treated grain fields within 2 weeks after treatment. Do not feed treated straw to livestock if a preharvest or emergency treatment is used. See label.
Starane	Do not allow livestock to graze treated areas or harvest treated forage within 7 days of application. Do not apply closer than 40 days before harvesting of grain or straw.

TABLE 3C — Weed Response to Herbicides in Small Grains*

	SITE OF ACTION	CROP TOLERANCE**	ANNUAL BROADLEAVES												ANNUAL GRASSES	PERENNIALS							
			COCKLEBUR	JIMSONWEED	LAMBSQUARTERS	NIGHTSHADE (E. BLACK)	PIGWEEED (REDROOT)	RAGWEEED (COMMON)	SMARTWEED	VELVETLEAF	WILD MUSTARD	HOARY ALYSSUM	YELLOW ROCKET	CHICKWEED (COMMON)		MAYWEED (DOGFENNEL)	BINDWEED (FIELD)	CANADA THISTLE	SOWTHISTLE	QUACKGRASS	YELLOW NUTSEDGE	WILD GARLIC	WILD ONION
BANVEL/CLARITY	O	3	G	G	G	G	G	G	G	F	G	F	G	G	F	F	F	F	P	N	F	F	
BUCTRIL/MOXY	O	1	G	G	E	G	F	G	G	G	F	F	F	P	F	N	P	P	N	N	N	N	
CURTAIL	O	3	F	G	G	G	G	F	F	G	G	G	P	G	N	P	F	P	N	N	P	P	
EXPRESS	B	1	F	-	E	P	F	P	F	P	E	-	G	G	E	N	P	F	F	N	N	F	P
HARMONY EXTRA	B	1	G	-	E	P	E	F	E	G	E	-	G	G	E	N	P	F	F	N	N	G	F
HARMONY GT	B	1	F	-	G	P	E	F	E	G	E	-	G	G	E	N	P	P	P	N	N	G	F
MCPA	O	2	F	F	G	G	G	G	P	F	G	G	G	P	P	N	P	P	P	N	N	P	P
PUMA	A	2	N	N	N	N	N	N	N	N	N	N	N	N	N	G	N	N	N	N	N	N	N
STARANE	O	2	G	F	P	F	P	E	F	G	F	-	-	-	N	F	P	P	N	N	-	-	
STINGER	O	2	E	G	P	P	P	G	F	P	P	P	P	P	G	N	P	G	F	N	N	N	
2,4-D AMINE	O	3	F	F	G	G	G	G	P	F	G	G	G	P	P	N	P	P	P	N	N	P	P
2,4-D ESTER	O	3	F	F	G	G	G	G	P	G	G	G	G	P	P	N	F	F	P	N	N	F	F

Herbicide Site of Action: A = ACCase Inhibitor; B = ALS Inhibitor; C = Photosynthesis Inhibitor; O = Other

Herbicide Effectiveness: P = Poor; F = Fair; G = Good; E = Excellent; N = None; - = Not enough information to rank

*The above ratings are a relative comparison of herbicide effectiveness. Weather conditions greatly influence the herbicide's effectiveness, and weed control may be better under favorable conditions or poorer under unfavorable conditions.

**Crop Tolerance: 1=Minimal risk of crop injury; 2=Crop injury can occur under certain conditions (soil applied—cold, wet; foliar applied—hot, humid); 3=Severe crop injury can occur. Follow precautions under Remarks and Limitations and on the label; 4=Risk of severe crop injury is high. Recommended only in rescue situations.