

WEED CONTROL IN FLAX

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Cultural Practices

- F1. Flax does not compete well with weeds, so adequate weed control is essential in obtaining high flax yields. Shallow early spring tillage to stimulate germination of annual weeds, followed by tillage operations to kill these weeds has been a successful method of weed control. However, using this method of weed control results in delayed seeding of flax which usually decreases yield. Therefore, appropriate preplanting and postharvest tillage, together with suitable chemical weed control will usually give the best weed control.

Herbicides

- F2. Flax is a poor competitor with weeds so control is needed before or soon after emergence to reduce field yield losses. Preemergence herbicides control weeds before emergence and eliminate early weed competition. Apply postemergence herbicide treatments as soon as possible.
- F3. **Assure II* (quizalofop)** applied at 0.034 to 0.069 lb ai/A (5 to 10 oz/A) will give good control of annual grasses and suppression of quackgrass. A crop oil concentrate at 1% v/v or a nonionic surfactant at 0.25% v/v must always be added to the spray solution. However, **Do Not** use vegetable oil as an additive, since control will be reduced compared to other additives.
- F4. **Buctril* (bromoxynil)** can be used to control many annual broadleaf weeds. Apply Buctril at 0.25 lb/A (1 pt) when flax is 2 to 8 inches tall. **Do Not** apply bromoxynil in humid weather. Temperatures at the time of treatment, or for three days after treatment, must be below 85°F to avoid flax injury. **Do Not** apply with crop oil, surfactants or liquid nitrogen as crop injury may result. See label for rates.
- F5. **Bronate Advanced* (bromoxynil + MCPA)** Apply Bronate Advanced at 0.50 lbs/A (0.80 pts) when flax is 2 to 8 inches tall. **DO NOT** apply in humid weather. **DO NOT** apply with crop oils, surfactants or liquid nitrogen as crop injury may result.
- F6. **Curtail M (clopyralid + MCPA)** will control most annual weeds including wild buckwheat. Curtail M will also give good season-long control of Canada thistle. Apply when flax is 2 to 6 inches tall but before flax begins to bolt. Flax tolerance is fair to good.
- F7. **MCPA (amines or esters)** will control most annual broadleaf weeds. However, MCPA is weak on wild buckwheat and smartweeds. Apply when flax is 2 to 6 inches tall and prior to bud stage. Flax tolerance is marginal especially at higher rates.
- F8. **Poast (sethoxydim)** at 0.09 to 0.5 lb/A (0.5 to 2.5 pts A) will give good control of annual grasses including wild oat, and will give suppression of perennial grasses. Flax has good tolerance to sethoxydim. An oil concentrate at 1 qt/A must be used for consistently good grass control. Sethoxydim can be tank mixed with bromoxynil (Buctril) or MCPA (amines) for broadleaf weed control. Some reduced grass control may result when tank mixing sethoxydim with bromoxynil or MCPA. Therefore, increase the sethoxydim rate in the above tank mixtures if grass weeds are growing under stress.
- F9. **clethodim* [Select Max/Intensity One]** at 0.068 to 0.09 lb/A (9-12 oz/A) or **Arrow/Intensity** at 0.063 to 0.078 lb/A (4-5 oz/A) will give good control of annual grasses and suppression of perennial grasses. Flax has good tolerance to clethodim. Applications must be made prior to bloom. Check label for adjuvant rates and recommendations.
- F10. **Treflan* (trifluralin)** can be applied preplant incorporated only in the fall. Trifluralin will control annual grasses, except wild oats, and some broadleaf weeds. Flax tolerance is marginal. **Do Not** apply in the spring as crop injury will result.

* or generic equivalent.

Table F1. Crop Stage and Harvest Restrictions for Flax

Herbicide Name	Minimum Crop Stage	Maximum Crop Stage	Grain Harvest Restriction (days)
Arrow (clethodim)	none	Prior to bloom	60
Assure II (quizalofop)	none	none	70
Bison (bromoxynil & MCPA)	2 inches	8 inches but prior to bud	none
Bison Advanced (bromoxynil & MCPA)	2 inches	8 inches but prior to bud	none
Broclean (bromoxynil)	2 inches	8 inches or prior to bud	none
Bromac (bromoxynil & MCPA)	2 inches	8 inches but prior to bud	none
Bromac Advanced (bromoxynil & MCPA)	2 inches	8 inches but prior to bud	none
Bronate Advanced (bromoxynil & MCPA)	2 inches	8 inches but prior to bud	none
Buctril (bromoxynil)	2 inches	8 inches or prior to bud	none
Curtail M (clopyralid & MCPA)	2 inches tall	up to 6 inches, before bolting	72
Intensity (clethodim)	none	Prior to bloom	60
Intensity One (clethodim)	none	Prior to bloom	60
MCPA, generic (MCPA)	2 inches	6 inches but prior to bud	none
Moxy (bromoxynil)	2 inches	8 inches or prior to bud	none
Poast (sethoxydim)	none	none	75
Section (clethodim)	none	Prior to bloom	60 or 75 (label dependent)
Select Max (clethodim)	none	Prior to bloom	60
Sword (MCPA)	2 inches	before bud	none
Targa (quizalofop)	none	none	70
trifluralin, generic (trifluralin)	n.a.	n.a.	none

Table F2. Summary of herbicides for use in Flax

<u>Application Type</u>		Crop	
Herbicide / Formulation	Rate Range	Tolerance	Remarks
<u>Preplant Incorporated</u>			
trifluralin 10 G	5 to 7.5 lb	F	Apply preplant incorporated in fall after September 1. Rate dependent on soil type. Do Not apply in spring.
trifluralin 4 E (trifluralin)	1 to 1.5 pt (0.5 to 0.75 lb ai/A)		
<u>Postemergence</u>			
Arrow 2 EC (clethodim)	4 to 5 fl oz (0.063 to 0.078 lb ai/A)	G	Controls annual grasses and suppresses quackgrass. Apply when grasses are 2-8 inches and actively growing. Always add COC at 1-2 pts/A. AMS at 2.5 lb/A is recommended.
Assure II 0.88 E (quizalofop)	5 to 10 fl oz (0.034 to 0.069 lb ai/A)	G	Controls annual grass and suppresses quackgrass. Apply when annual grasses are 2 to 6 inches tall or 6 to 10 inch quackgrass. Always add a crop oil concentrate or a nonionic surfactant.
Bison 4 E (bromoxynil & MCPA)	0.9 pt (0.45 lb ai/A)	F	Apply to flax 2 to 8 inches tall. Flax injury is possible.
Bison Advanced 5 E (bromoxynil & MCPA)	0.75 pt (0.45 lb ai/A)	F	Apply to flax 2 to 8 inches tall. Flax injury is possible.
Broclean 2 E (bromoxynil)	1 pt (0.25 lb ai/A)	F	Apply to flax 2 to 8 inches tall. Controls most broadleaf weeds. Flax injury possible. See narrative.
Bromac 4 E (bromoxynil & MCPA)	0.9 pt (0.45 lb ai/A)	F	Apply to flax 2 to 8 inches tall. Flax injury is possible.
Bromac Advanced 5 E (bromoxynil & MCPA)	0.75 pt (0.45 lb ai/A)	F	Apply to flax 2 to 8 inches tall. Flax injury is possible.
Bronate Advanced 5 E (bromoxynil & MCPA)	0.7 pt (0.45 lb ai/A)	F	Apply to flax 2 to 8 inches tall. Flax injury is possible.
Buctril 2 E (bromoxynil)	1 pt (0.25 lb ai/A)	F	Apply to flax 2 to 8 inches tall. Controls most broadleaf weeds. Flax injury possible. See narrative.
Curtail M 2.77 E (clopyralid & MCPA)	1.33 to 1.75 pts (0.47 to 0.6 lb ai/A)	F/G	Controls most broadleaf weeds including wild buckwheat and Canada thistle. Apply to flax 2 to 6 inches tall.
Intensity 2 EC (clethodim)	4 to 5 oz (0.063 to 0.078 lb ai/A)	G	Controls annual grasses and suppresses quackgrass. Apply when grasses are 2-8 inches and actively growing. Always add COC at 1-2 pts/A. AMS at 2.5 lb/A is recommended.
Intensity One 0.97 EC (clethodim)	0.56 to 0.75 pts (0.068 to 0.09 lb ai/A)	G	Controls annual grasses and suppresses quackgrass. Apply when grasses are 2-8 inches and actively growing.
MCPA Amine 4 S	0.5 pt	G/F	Controls most broadleaf weeds. Weak on wild buckwheat and smartweeds. Apply when flax is 2 to 6 inches tall. Amine formulations have better crop tolerance.
MCPA Ester 4 E (MCPA)	0.5 pt (0.25 lb ai/A)		

Table F2. Summary of herbicides for use in Flax

<u>ApplicationType</u>			
Herbicide / Formulation	Rate Range	Crop Tolerance	Remarks
<u>Postemergence</u>			
Moxy 2 E (bromoxynil)	1 pt (0.25 lb ai/A)	F	Apply to flax 2 to 8 inches tall. Controls most broadleaf weeds. Flax injury possible. See narrative.
Poast 1.5 E (sethoxydim)	0.5 to 1.5 pts (0.09 to 0.28 lb ai/A)	G	Controls annual grasses and suppresses quackgrass. For best results apply when grasses are 2 to 6 inches tall and actively growing.
Section 2 EC (clethodim)	4 to 5 fl oz (0.63 to 0.78 lb ai/A)	G	Controls annual grasses and suppresses quackgrass. Apply when grasses are 2-8 inches and actively growing. Always add COC at 1-2 pts/A. AMS at 2.5 lb/A is recommended.
Select Max 0.97 EC (clethodim)	9 to 12 fl oz (0.068 to 0.09 lb ai/A)	G	Controls annual grasses and suppresses quackgrass. Apply when grasses are 2-8 inches and actively growing.
Targa 0.88 E (quizalofop)	5 to 10 fl oz (0.034 to 0.069 lb ai/A)	G	Controls annual grass and suppresses quackgrass. Apply when grasses are 2 to 6 inches tall. Always add a crop oil concentrate or a nonionic surfactant.

Table F3. Effectiveness of herbicides on major weeds in Flax

Herbicides	Grasses			Broadleaves					
	Green Foxtail	Yellow Foxtail	Wild Oats	Common Lambsquarters	Common Ragweed	Kochia	Pigweed spp.	Smartweeds (annual)	Wild Mustard
Preplant Incorporated									
trifluralin, generic (trifluralin)	G	G	P	F	N	F	G	F	N
Postemergence									
Arrow (clethodim)	G	G	G	N	N	N	N	N	N
Assure II (quizalofop)	G	G	G	N	N	N	N	N	N
Bison (bromoxynil & MCPA)	N	N	N	G	G	G	G	G	G
Bison Advanced (bromoxynil & MCPA)	N	N	N	G	G	G	G	G	G
Broclean (bromoxynil)	N	N	N	G	G	G	F	G	F
Bromac (bromoxynil & MCPA)	N	N	N	G	G	G	G	G	G
Bromac Advanced (bromoxynil & MCPA)	N	N	N	G	G	G	G	G	G
Bronate Advanced (bromoxynil & MCPA)	N	N	N	G	G	G	G	G	G
Buctril (bromoxynil)	N	N	N	G	G	G	F	G	F
Curtail M (clopypalid & MCPA)	N	N	N	G	G	G	G	G	G
Intensity (clethodim)	G	G	G	N	N	N	N	N	N
Intensity One (clethodim)	G	G	G	N	N	N	N	N	N
MCPA, generic (MCPA)	N	N	N	G	G	G	G	F	G
Moxy (bromoxynil)	N	N	N	G	G	G	F	G	F
Poast (sethoxydim)	G	G	G	N	N	N	N	N	N
Section (clethodim)	G	G	G	N	N	N	N	N	N
Select Max (clethodim)	G	G	G	N	N	N	N	N	N
Targa (quizalofop)	G	G	G	N	N	N	N	N	N

NOTE: G = Good; F= Fair; P = Poor; N = No control. Effectiveness ratings apply if herbicide is used according to label recommendations as to rate, time of application, etc., and favorable temperature and moisture conditions prevail.