



Hay & Pasture Management

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The Crime

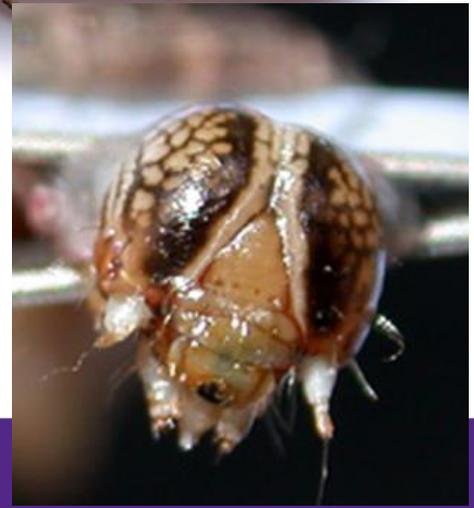


The Criminal!



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The Criminal!



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More than One Worm...



Table 1. Armyworm species that can be found in Kansas.

Common Name	Primary Crops/Hosts	Overwinters in Kansas?
Armyworm (True armyworm)	Broad range	Yes
Beet Armyworm	Mainly alfalfa	Yes
Fall Armyworm	Very wide range	No
Wheathead Armyworm	Wheat only	Yes
Yellowstriped Armyworm	Mainly alfalfa and soybeans	No
Army Cutworm*	Wheat, alfalfa, rangeland	Yes

* Army Cutworm is not a true armyworm, but can appear in large numbers.

Not the Same “Worm”



Green Cloverworm

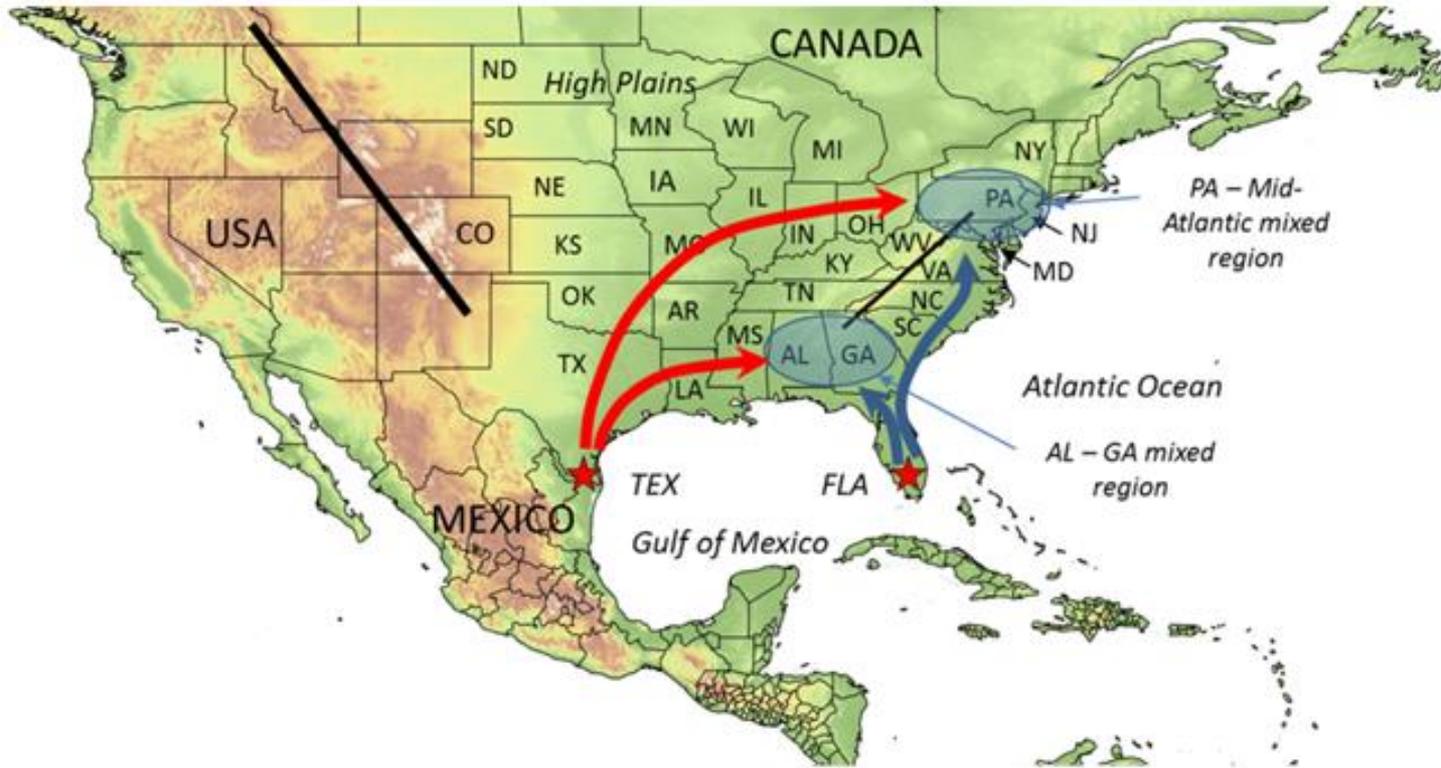


Yellowstriped Armyworms – early and late instars

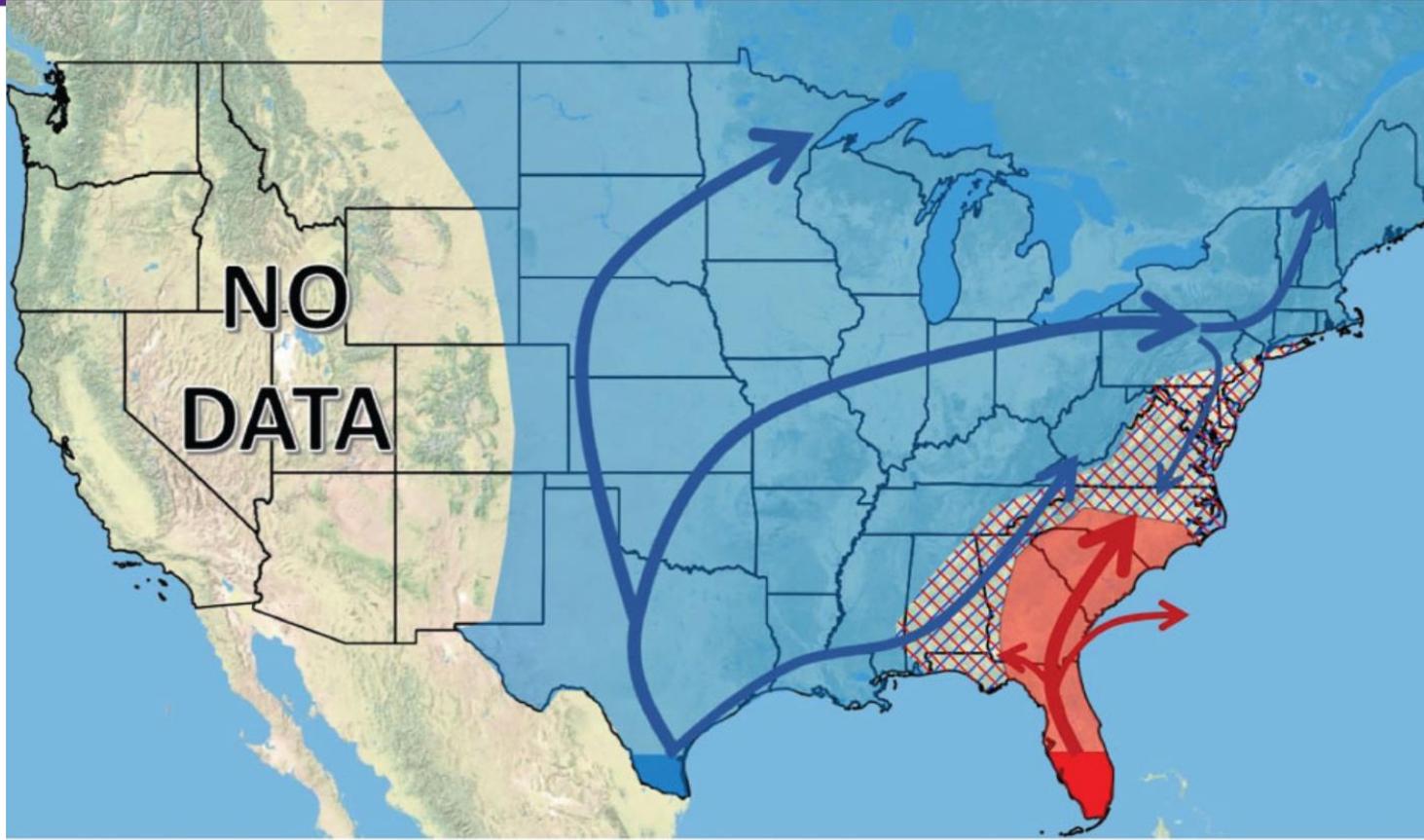


Soybean Podworm

Based on 2006 Study



Based on 2021 Study



Every Year is Different...



- **Weather patterns play a major role:**
 - Optimal development/reproductive: 78-86F
 - Minimum for egg and larval growth: 55F
 - Larval development declines:> 90F
 - Eggs stop hatching stops: 100F

Egg Masses



- Each female lays about 1000 eggs in masses of 50 to several hundred.
- Larvae eat ~14 days
- Larvae dig into soil to pupate for 2 weeks
- Many overlapping generations
- Still coming from south (TX)
- Long falls = numerous generations

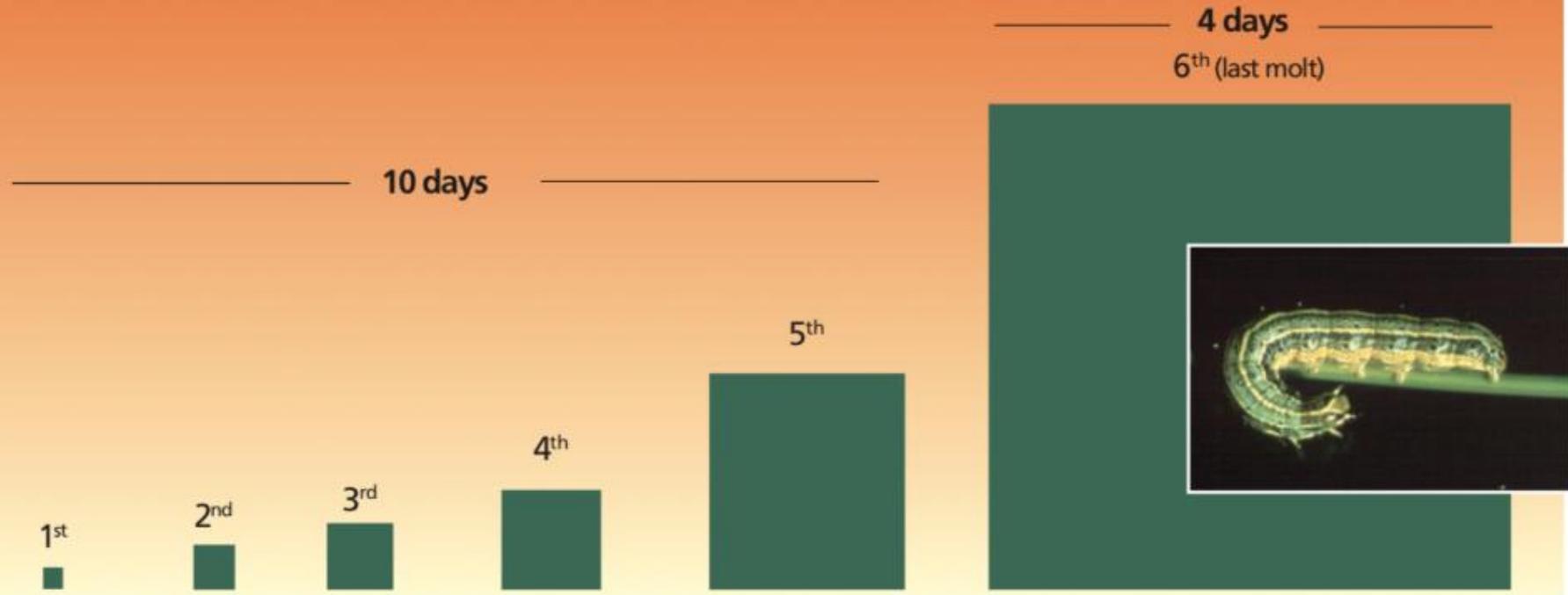


How Many is Too Many?



- Alfalfa:
 - 1-2 caterpillars/ft can destroy seedling alfalfa.
 - 10-15/ft can destroy 12" tall plants.
- Pasture/Brome:
 - Treat 4 to 5 larvae/ft.
- Wheat:
 - If 25-30% of plants show damage, examine the field frequently.
 - Treat at 2-3 active larvae/ft.

FAW feed for 14 days, but mainly in the last 4



Sweep, Count, Size



Damage Signs



Non-Chemical Control Options...

- Several braconid wasps and tachinid flies
- Birds, toads, skunks, and some domestic fowl



What About Soap?



Registered products for the control of fall armyworm in Kansas crops

Chemical Name	Trade Name	Mode of Action Class	Alfalfa	Corn	Sorghum	Wheat	Grass Forage/Hay
<i>alpha-cypermethrin</i>	Fastac CS	3A	yes	yes	yes	yes	yes
<i>beta-cyfluthrin</i>	Baythroid XL	3A	yes	yes	yes	yes	yes
<i>bifenthrin</i>	numerous products	3A		yes			yes
<i>biological insecticide</i>	Fawligen	-			yes		
<i>carbaryl</i>	Sevin	1A	yes				yes
<i>chlorantraniliprole</i>	Vantacore	28		yes	yes	yes	yes
<i>cyfluthrin</i>	Tombstone	3A	yes	yes			yes
<i>deltamethrin</i>	Delta Gold	3A		yes	yes		
<i>gamma-cyhalothrin</i>	Proaxis	3A	yes	yes	yes	yes	
<i>indoxacarb</i>	Steward EC	22A		yes			
<i>lambda-cyhalothrin+chlorantraniliprole</i>	Besiege	3A+28	yes	yes			yes
<i>lambda-cyhalothrin</i>	numerous products	3A	yes	yes	yes	yes	yes
<i>methomyl</i>	Lannate	1A	yes	yes	yes		yes*
<i>methoxyfenozide</i>	Intrepid 2F	18			yes		
<i>permethrin</i>	numerous products	3A	yes				
<i>spinosad</i>	Blackhawk	5		yes	yes	yes	yes
<i>zeta-cypermethrin</i>	Mustang MAXX	3A	yes	yes	yes	yes	
<i>zeta-cypermethrin+bifenthrin</i>	Hero	3A		yes			

Concerns with Treatment



Costs: Insecticide VS Replant

- Generics running \$3-4 per acre
- Application costs \$8-12 per acre
- 50 acre field = \$550 – 800 per treatment
- Seed: \$60 per acre (\$3 lb – 20 lbs per acre)
- Planting costs: \$22 (Ag Manager)
- 50 acre field: \$4,400

Maybe Some Hope... Sept 24 vs April 25



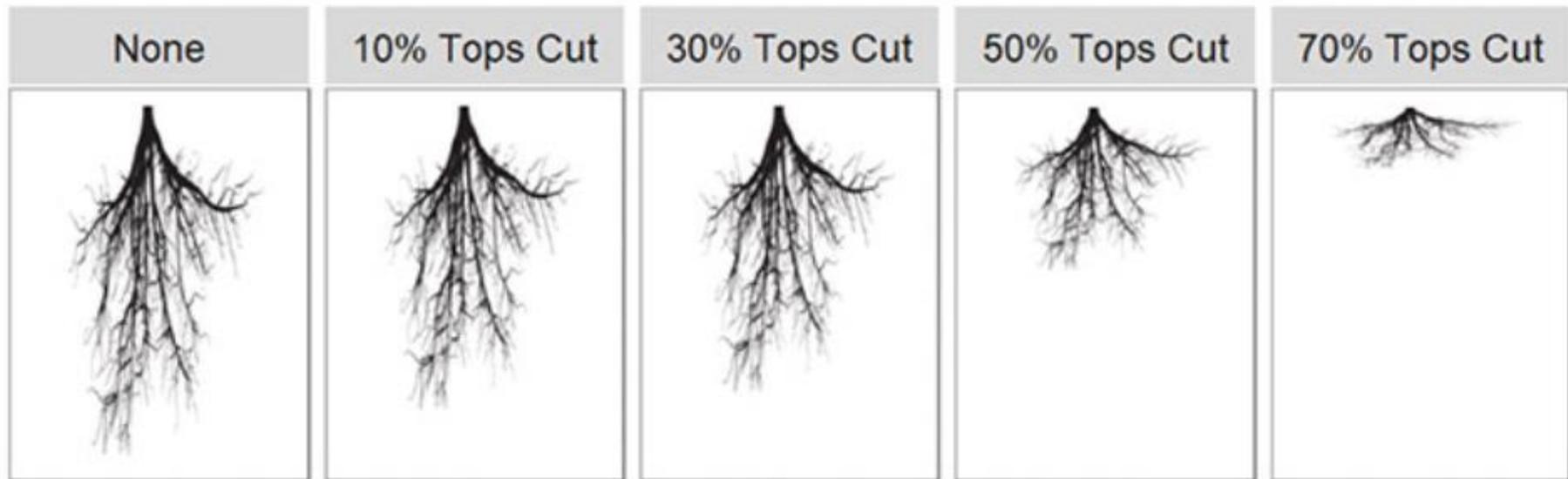
But... March 2026...



What Determines if a Stand Comes Back?

- Bad News: Unclear
- Factors to consider
 - Cutting date
 - Cutting height
 - Fertility management: pH & Nutrients
 - FAW timing, level of pressure, number of feedings
 - Forage: type and age

Relative Root Growth 33 Days After Cutting



*Data adapted from Crider, F. J. 1955. Root-growth stoppage resulting from defoliation of grass.
<https://handle.nal.usda.gov/10113/CAT86201091>*

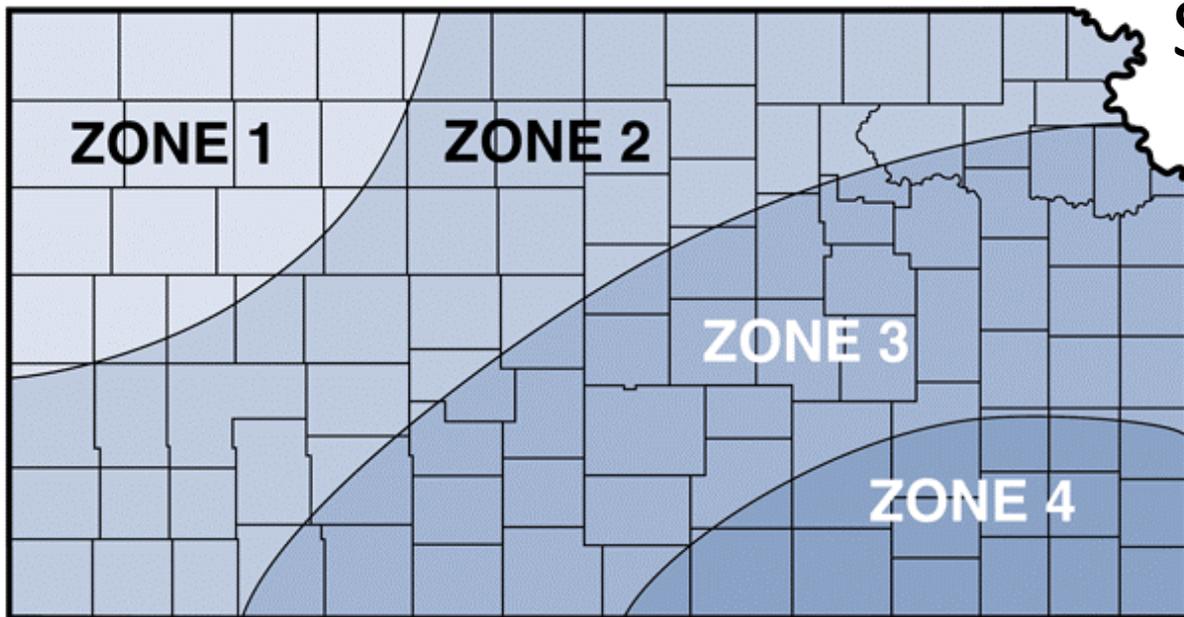


Nutrient Removal



Crop	Unit of yield	Moisture for yield basis	P₂O₅	K₂O
Alfalfa & Clover	Ton	15%	12	60
Bermudagrass	Ton	15%	12	40
Bromegrass	Ton	15%	12	40
Fescue, tall	Ton	15%	12	40

Establishing Cool Season Tames



Smooth Bromegrass

15 – 20 lbs/acre
drilled

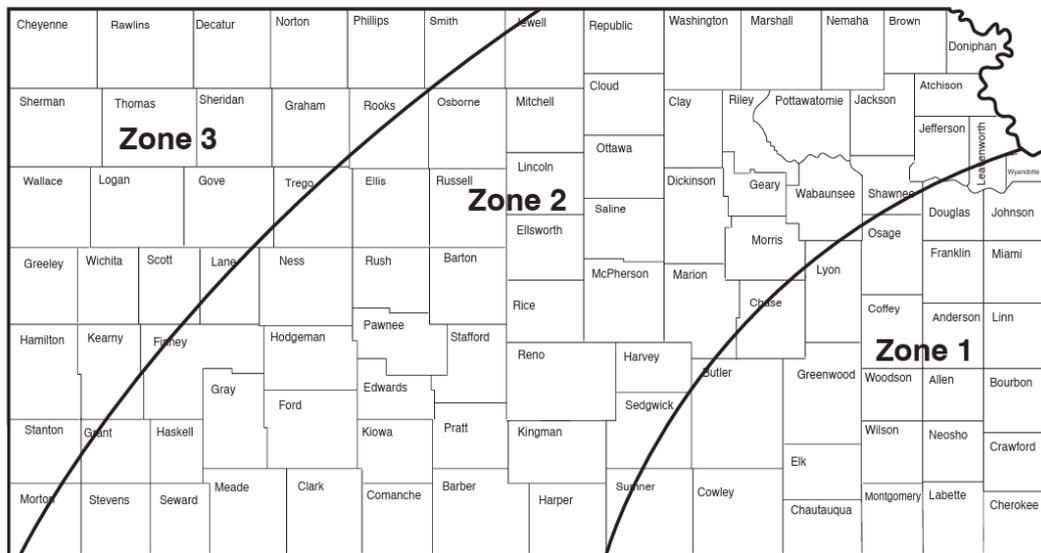
Tall Fescue

20 - 25 lbs/acre
drilled

Optimum Planting Dates for Cool-season Grasses

	Zone 1	Zone 2	Zone 3	Zone 4
Fall	Aug 10–Sept 10	Aug 15–Sept 15	Aug 20–Sept 20	Aug 15–Oct 1
Winter	Not recommended	Not recommended	Not recommended	Not recommended
Spring	Mar 1–Apr 1	Feb 15–Mar 15	Feb 15–Mar 15	Not recommended

Establishing Native Grasses



Zone	Optimum	Acceptable
1	March 25–April 10	Feb. 15–May 1
2	April 1–April 20	March 1–May 15
3	April 10–April 30	March 1–May 15

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Forage/Pasture Survey

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