

# Thistle Control in Pastures



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# Thistle Identification

- All thistles in Arkansas are either annuals or biennials.
- The most common types are bull thistle, field thistle, musk thistle and yellow thistle.
- Control measure for all types of Arkansas thistles are the same.
- We do not have Canada Thistle.



musk thistle leaf



bull thistle leaf

# Mature Musk Thistle



more common in  
northwest Arkansas

# Bull Thistle



Found throughout the state.

# Field Thistle



Found throughout Arkansas

# Milk Thistle



Found mostly in southwest Arkansas

## Yellow thistle



more common in southwest Arkansas

# Life Cycle

## Most thistles are biennials

- Germinate and grow into the rosette stage in the first year.
- Over-winter in rosette stage.
- Bloom and produce seeds the next growing season.

# Seed Dispersal

- 80% of seeds are deposited within 55 yards of the original plant.
- Less than 1% blows more than 110 yards from the point of origin.

# Mowing

- Mowing must occur within 2 days of flower opening to prevent seed production.
- Control through mowing is difficult because because there are all ages of thistles in a population.

# Seed Production

- Allowed to mature, a single plant can produce up to 3,500 good quality seeds.
- Seed viability is about 90% two months after they are produced.
- Seeds may retain the ability to germinate for more than one year.

# Biological Control



The larvae of this weevil burrow into the flower head and prevent seed production.

**Thistle Flower Head Weevil**

# Biological Control

- 5-7 years are required for weevil populations to reach a level sufficient to control thistles.
- Avoid mowing or spraying the first 2 years after releasing weevils.
- There is also a rosette weevil that will eat foliage.

# Herbicide Use

- Timely application is the key
- Thistles must be actively growing and in the rosette stage.
- 2,4-D at 1 to 1.5 quarts per acre is very effective.
- Spraying after bloom is not very effective.



**Rosette stage**

# Herbicide Use

## Effective but more expensive than 2,4-D

- Grazon P+D (1-2 pints/acre)
- Weedmaster (1.5 -2.0 pints/acre)
- Remedy (1-2 pints/acre)
- Tordon 22K (1 pint/acre)
- Cimarron Max (1.5 -2.0 pints/acre)
- Telar (1 oz/acre)
- Surmount (1-2 pints per acre)

# Herbicide Use

- Ally/Cimarron has not been as effective as the 2,4-D related products.
- It is better on musk thistle than bull thistle.
- Slow to work.
- Will prevent seed production.
- May take 2 months to kill thistle.
- Telar, a similar herbicide, is reported to be more effective on thistle.

# Herbicide Timing

- Spring and fall are the best times to control thistle.
- March-April, October-November
- Necessary conditions:
  - Good soil moisture.
  - Temperature 50F or above.

# Fall Musk Thistle Control with 2,4-D

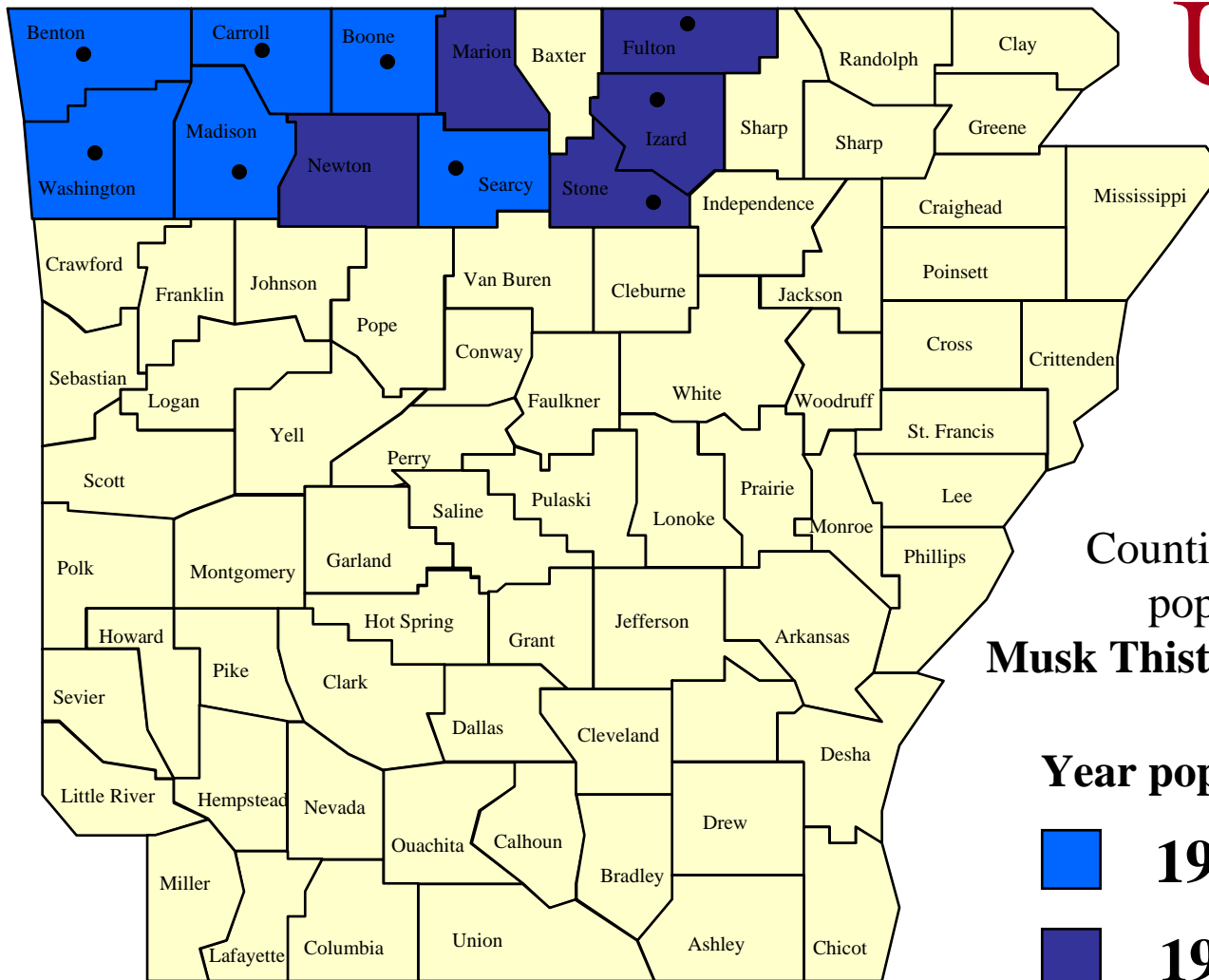
Application Date	Temp. at Application	Days Below 32 °F	% Control	
			1 qt LVE 2,4-D	2 qt LVE 2,4-D
<b>1992</b>				
Oct. 1	70	0	98	100
Oct. 22	75	4	100	98
Nov. 5	30	11	90	95
Nov. 23	<b>35</b>	22	37	50
<b>1993</b>				
Oct. 11	55	2	90	93
Oct. 22	60	4	93	100
Nov. 10	50	15	34	40

# Herbicide Regulations

- 2,4-D, Grazon P+D, Weedmaster and Remedy are restricted use products that require a pesticide applicator's license
- Remedy, Redeem R&P, Telar and Ally are not restricted use herbicides
- Contact your county Extension office or the State Plant Board for license information

# Clover

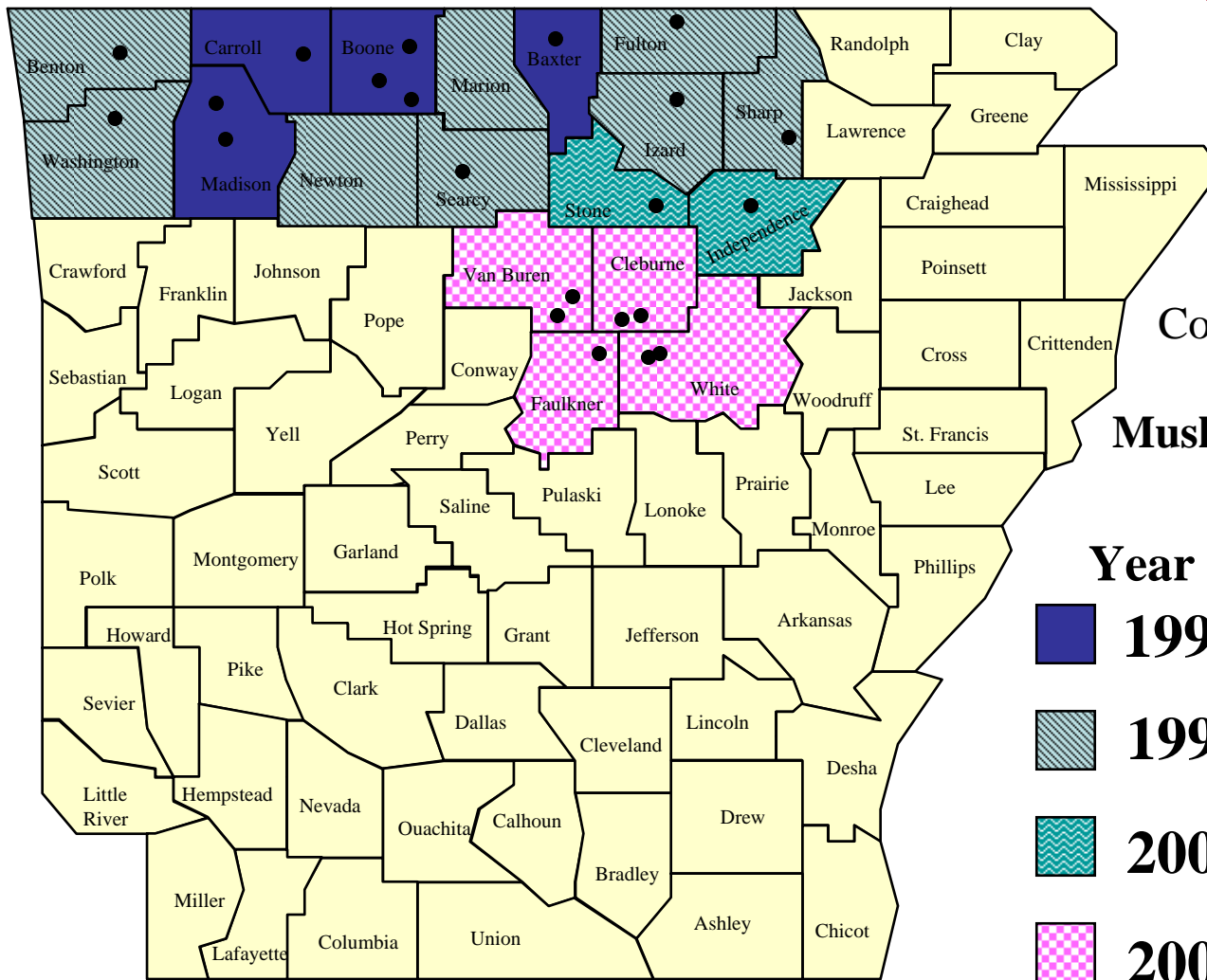
- White clover and lespedeza will tolerate 2,4-D amine at 1-2 pints per acre.
- Red clover and arrowleaf will be damaged.
- Grazon P+D, Ally or Weedmaster will kill clover.



Counties with confirmed populations of the **Musk Thistle Flower Head weevil**

**Year population confirmed**

- 1998**
- 1999**



Counties with confirmed populations of the **Musk Thistle Rosette weevil**

**Year population confirmed**

- 1998**
- 1999**
- 2000**
- 2001**

● indicates approximate site of confirmed population