

# Sweet Corn Weed Management

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# Sweet corn weed control

- Process of limiting weed infestation and minimizing weed competition
  - **Goal:** minimal effect of weeds on crop growth and yield
- Degree of control is a matter of **economics**, i.e. balance between **cost of control** and **yield loss**
- Methods of weed control
  - Mechanical
  - Chemical
  - Cultural

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# What constitutes an effective weed control program?

- Weed(s) identification
- Proper selection of control measure(s)
- Using an integrated approach (use multiple tools)



# Fall panicum (*Panicum dichotomiflorum*)



# Goosegrass (*Eleusine indica*)





**Goosegrass**



**Fall panicum**



**Goosegrass**

**Fall panicum**

**Goosegrass**



**Fall panicum**





**Goosegrass**

**Fall panicum**

# Crowfootgrass (*Dactyloctenium aegyptium*)



# Southern crabgrass (*Digitaria ciliaris*)



**Crowfootgrass**

**Goosegrass**

# southern crabgrass

**Goosegrass**

**Crowfootgrass**

A close-up photograph of several long, narrow, green leaves of a yellow nutsedge plant. The leaves are arranged in a fan-like pattern, with some overlapping. The background is a blurred, dark brownish-grey color, likely soil or mulch. The lighting is soft, highlighting the texture of the leaves.

**Yellow nutsedge (*Cyperus esculentus*)**



**Purple nutsedge (*Cyperus rotundus*)**



**Yellow nutsedge**

**Purple nutsedge**





**Purple nutsedge**



**Yellow nutsedge**



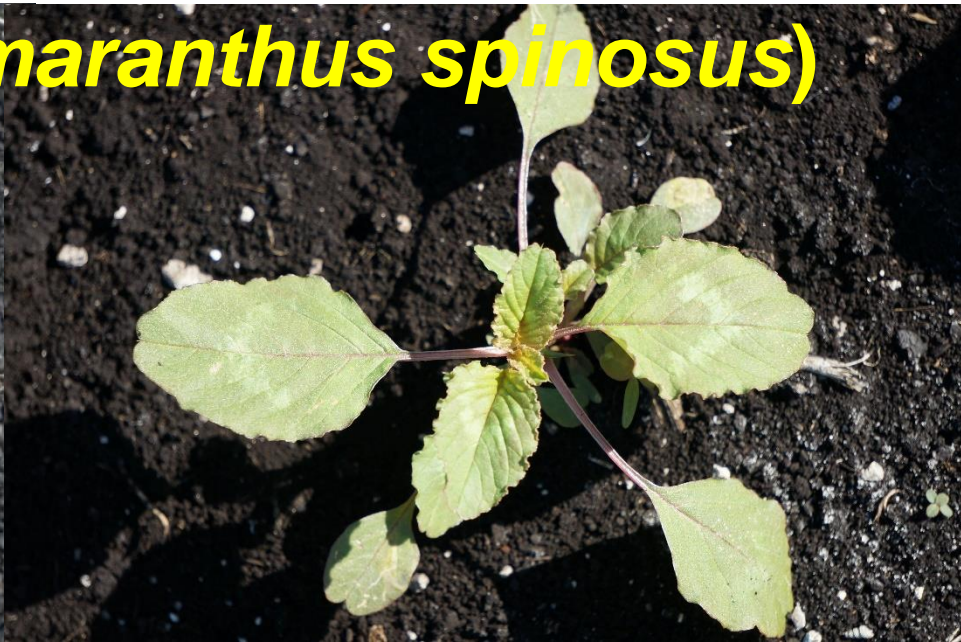
**Yellow nutsedge**

**Purple nutsedge**

# Common lambsquarters (*Chenopodium album*)



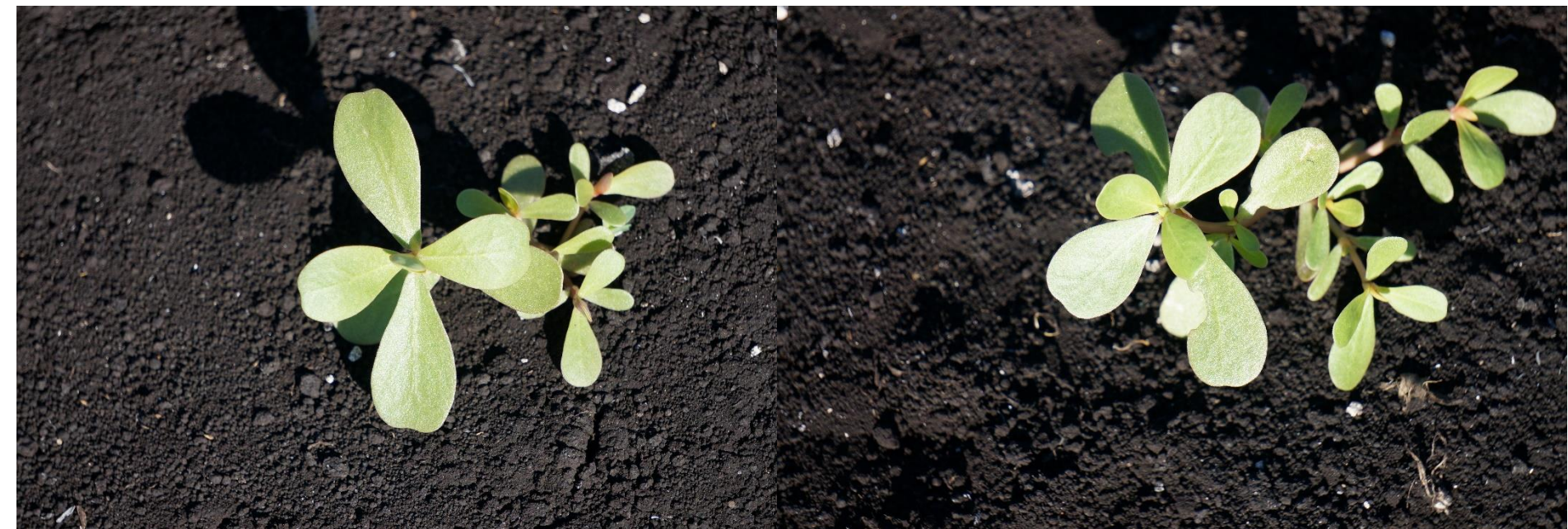
# Spiny amaranth (*Amaranthus spinosus*)



# Livid amaranth (*Amaranthus blitum*)



# Common purslane (*Portulaca oleracea*)





**Spiny amaranth**

**Common  
purslane**

**Livid amaranth**

**Spiny amaranth**



**Livid amaranth**





**Spiny amaranth**

**Common purslane**

**Spiny amaranth**

**Common  
purslane**



**Livid amaranth**

**Spiny amaranth**

**Common lambsquarters**

# American black nightshade (*Solanum americanum*)



# Ragweed parthenium (*Parthenium hysterophorus*)



# Common ragweed (*Ambrosia artemisiifolia*)



**Common ragweed**



**Ragweed parthenium**



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# Mechanical weed control

- Cultivation is an economical means of suppressing weed growth
- Effective when used alone or in combination with herbicides
- Cultivation when weeds are not present is not recommended





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# Cultural weed control

- Crop rotation
  - Allows for breaking of life cycles
  - Allows for rotation of herbicides and other control programs



**Grass weeds**



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# Cultural weed control

- Crop rotation
  - Allows for breaking of life cycles
  - Allows for rotation of herbicides and other control programs
- Fertilizer management
- Competitive cultivars
- Seeding rate

# Preemergence/preplant herbicides

Herbicide	Trade name	Timing	Rate	WSSA MOA
Atrazine	AAtrex	Preemergence	2-6 pt/A	Group 5
Mesotrione	Callisto	Preemergence	6-7.7 fl oz/A	Group 27
S-metolachlor	Dual II Magnum	Preemergence	1-1.67 pt/A	Group 15
Pendimethalin	Prowl H <sub>2</sub> O	Preemergence	2-4 pt/A	Group 3
Flufenacet	Define	Preemergence	13-18 fl oz/A	Group 15
Dimethenamid-P	Outlook	Preemergence	12-18 fl oz/A	Group 15
EPTC	Eradicane	Preemergence	4.75-7.33 pt/A	Group 8
Simazine	Princep	Preemergence	2 qt/A	Group 5
Carfentrazone	Aim	Preplant burndown	0.5-1 fl oz/A	Group 14
Paraquat	Gramoxone	Preplant burndown	2-4 pt/A	Group 22
Pelargonic acid	Scythe	Preplant burndown	3-10% v/v	Group 26
Pyraflufen	ET	Preplant burndown	0.5-2 fl oz/A	Group 14
Glyphosate	Several	Preplant burndown	See label	Group 9

# Postemergence herbicides

Herbicide	Trade name	Timing	Rate	WSSA MOA
Atrazine	AAtrex	<1.5 inch weed <12 inch corn	2-6 pt/A	Group 5
Mesotrione	Callisto	30 inch corn/V8	3 fl oz/A	Group 27
Bentazon	Basagran	Weed size	1.5-2 pt/A	Group 5
Halosulfuron	Sandea	Over-the-top Spike to layby	0.6-1 oz/A	Group 2
Carfentrazone	Aim	≥V14 >V8 - direct spray	0.5-1 fl oz/A	Group 14
Tembotrione	Laudis	Emergence to V7	3 fl oz/A	Group 27
Topramezone	Armezon	Weed size	0.75-1 fl oz/A	Group 27
S-metolachlor	Dual II Magnum	≥40 inch corn	Up to 2 pt/A	Group 15
Pendimethalin	Prowl H <sub>2</sub> O	>4 inch to V8	2-4 pt/A	Group 3

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# Pyroxasulfone

- Inhibitor of VLCFA biosynthesis (Group 15)
  - Isoxazoline chemical family
- Root-and-shoot growth inhibitor
  - Controls susceptible germinating seedlings before or soon after they emerge from the soil
- Low-use-rate herbicide that provides residual weed control
- Safety on a number of sweet corn hybrids
- Acceptable weed control on soils with high OM content

# Pyroxasulfone

- Zidua (4.17 lb ai/gal)
  - 2.5 to 6.5 fl oz/A



- Anthem (2.15 lb ai/gal)
  - Pyroxasulfone + Fluthiacet (WSSA Group 14)
  - 6 to 13 fl oz/A



- Anthem ATZ (4.5 lb ai/gal)
  - Pyroxasulfone + Fluthiacet (WSSA Group 14) + Atrazine (WSSA Group 5)
  - 2 to 4 pt/A





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# Ongoing research

- Preemergence
  - Anthem (10, 13 fl oz/A)
  - Anthem ATZ (2.5, 4.0 pt/A)
  - Zidua (6.5 fl oz/A)
  - Dual II Magnum (1.67 pt/A)
  - Dual II Magnum (1.67 pt/A) + Atrazine (6 pt/A)
  - Atrazine (6 pt/A)
- Postemergence
  - Callisto (3 fl oz/A)
  - Callisto (3 fl oz/A) + Atrazine (1, 4 pt/A)
  - Armezon (1 pt/A)
  - Armezon + Atrazine (1, 4 pt/A)
  - Armezon (1 pt/A) + Basagran (2 pt/A)
  - Laudis (3 fl oz/A)

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# Remember for chemical weed control

- Do it right
  - Proper herbicide(s)
  - Proper herbicide rate(s)
  - Proper placement of material
  - Proper time of application
  - Proper manner of application
- **READ THE HERBICIDE LABEL, IT'S THE LAW**

A turtle with a bright green shell is walking on a grassy bank. The background shows a mix of green grass and brown soil.

**THANK YOU**

An alligator is partially submerged in a body of water, with its back and tail visible. The water is dark and reflects the surrounding environment.

**QUESTIONS**