Weed Control in Hay & Pasture Fields
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Why Control Weeds in Hay & Pastures?

- May limit new stand establishment
- Forage quality can be reduced
- Weeds can reduce yield
- Shade out beneficial plants
- Can be poisonous
- Aesthetics
Weed Life Cycles

• Summer annuals
• Plants that germinate from seed in the spring, flower and produce seed in mid to late summer, and die in the fall. Control April – mid July
  -Examples include large crabgrass, barnyardgrass, common cocklebur, spiny amaranth, spurge, and ragweed.
Weed Life Cycles

• Winter annuals
  • Plants that germinate from seed mostly in late summer through winter, flower and produce seed in late winter to spring, and die in late spring to early summer. Control November - March
  - Examples include annual ryegrass, hairy buttercup, chickweed, henbit, purple deadnettle and cressleaf groundsel.
Weed Life Cycles

• Biennials
  Plants that complete their life cycle over two growing seasons. They germinate and produce a vegetative rosette the first year. The second year, the plants bolt, flower, produce seed and die. Best controlled in rosette stage

  - Examples include musk thistle, bull thistle, wild carrot, common burdock and yellow rocket.
Weed Life Cycles

- Perennials
- Plants that produce a vegetative structure (taproot, tuber, bulb, rhizome, etc.), which allows them to live for more than two years. Most perennials also reproduce from seed. Control is growth stage dependent.

  - Examples include johnsongrass, buckhorn plantain, horsenettle, tall ironweed, goldenrod and brambles.
Weed Control in Pastures

- Difficult challenge
- Weeds often grow on rough terrain/hillsides
- Livestock tracking opens the soil allowing weeds to germinate
- Herbicides kill the weeds, but may kill your legumes too
Options Available

• Fertility/Fertilization
• Multispecies grazing
• Mowing/clipping
• Herbicides
  – Always check the label, there may be grazing/hay cutting restrictions etc.

Combine all the above for an integrated approach to weed management
Weed Management Starts With Fertility

• Pastures need managed so forage plants can compete with weeds!
• Soil Test
• Adjust pH
• Adjust Phosphorus (P) & Potassium (K)
• Provide nitrogen
  – Legumes or commercial fertilizer applications
• Proper grazing management
Effects of pH on nutrient availability to plants
• **Purple Deadnettle**
  - A winter annual.
  - Mature plants have square stems and gently lobed triangular shape leaves.
  - Flowers are crowded at the end of the branches and form under the leaves.

• **Henbit**
  - A winter annual.
  - Mature plants have square stems with whorled leaves and showy pink to purple flowers.
  - Flowers are above the upper leaf whorls.
• **Purple Deadnettle Control**
  - Alfalfa Hay
    - Eptam
    - Metribuzin
    - Sinbar
    - Glyphosate (spot treat)
    - Paraquat

• **Henbit Control**
  - Alfalfa Hay
    - Eptam
    - Metribuzin
    - Sinbar
    - Glyphosate (spot treat)
    - Paraquat
• **Ground Ivy**
  - A low growing, creeping perennial.
  - Can reproduce by seeds, but most often reproduction is by stems that root at the nodes.
  - Square stem plant with opposite leaves that are rounded or heart shaped.

• **Common Mallow**
  - Often confused with Ground Ivy.
  - Can grow as a winter annual, summer annual or biennial plant.
  - Will grow erect, but is more often prostrate in its growth habit.
  - Round stem with alternate leaf pattern.
• **Ground Ivy Control**
  - Usually not a problem in pastures
  - 2,4-D
  - dicamba products

• **Common Mallow Control**
  - Usually not a problem in pastures
  - 2,4-D
  - dicamba products
• **Chickweed**
  • A low growing winter annual that can form dense thick patches.
  • Reproduction is by seed.
  • More than one generation can be produced a year in cool, moist areas.
  • Small white flower with 5 petals.

• **Yellow Rocket**
  • Generally a biennial with deep-green glossy foliage. First year rosette shown at bottom right.
  • Reproduces by seed.
  • The flowering stem produces bright yellow flowers in early spring the second year.
• Chickweed control
• dicamba products
• Metsulfuron
• Cimarron Max
• Glyphosate (spot treat)

• Yellow Rocket Control
• Cimarron Max
• Crossbow
• Metsulfuron
• Glyphosate (spot treat)
• **Curly Dock**
  - A herbaceous perennial with tall, erect stems.
  - Reproduces by seeds and a thick fleshy taproot.
  - It is a variable species that hybridizes with other dock species.

• **Wild Mustard**
  - Winter/Summer annual plant
  - 2-7 inch leaves with irregularly lobed lower leaves
  - Seeds can live in the soil for many years.
• Curly Dock Control
  • dicamba products
  • Cimarron Max
  • Forefront
  • Milestone
  • Grazon
  • Glyphosate (spot treat)

• Wild Mustard Control
  • In Alfalfa
    – Butyrac
    – Chateau
    – Metribuzin
    – Sinbar
    – Glyphosate (spot treat)
• **Oxeye Daisy**
  - A herbaceous perennial plant in the aster family
  - The plant produces over 500 seeds that spread by wind or animals
  - Seeds remain viable for 2-3 years
  - It can quickly replace up to 50% of the grass species in pastures

• **Cressleaf Groundsel**
  - Winter Annual plant
  - Can be toxic to livestock
  - Yellow individual flowers in a cluster
  - Leaf alternate, deeply divided with wide round toothed lobes
• Oxeye Daisy Control
  • Forefront
  • Milestone
  • Grazon P&D
  • Glyphopate (spot treat)

• Cressleaf Groundsel Control
  • 2,4-D
  • 2,4-D + dicamba
  • Sencor 75DF
  • Pursuit
  • Glyphosate (spot treat)
• **Broadleaf Plantain**
  - A rosette forming perennial with broad oval leaves.
  - Reproduce by seed.
  - Has a slender, fibrous taproot and can grow in compacted soils.

• **Buckhorn Plantain**
  - A narrow leaved perennial that forms a basal rosette.
  - Reproductions is by seed and new shoots from the base of the plant.
  - Seedhead is a dense cone-like spike on the end of a leafless stem.
- Broadleaf Plantain Control
  - 2,4-D
  - Cimarron Max
  - Crossbow
  - Forefront
  - PastureGard
  - Glyphosate (spot treat)

- Buckhorn Plantain Control
  - 2,4-D
  - Cimarron Max
  - Crossbow
  - Forefront
  - PastureGard
  - Glyphosate (spot treat)
Horse Nettle
- An erect perennial that spreads by spreading rhizomes and seeds.
- Leaves are alternate with older leaves wavy, lobed and prickly on both sides.
- Mature fruit seed are yellow berries (green when immature).

Eastern Black Nightshade
- An erect branching summer annual or short lived perennial.
- Mature foliage is slightly hairy with smooth stems.
- Mature fruit seed are glossy black, spherical berries.
- **Horse Nettle Control**
  - Cimarron Max
  - Metsulfuron
  - Milestone
  - Glyphosate (7) (spot treat)

- **Eastern Black Nightshade Control**
  - Forefront
  - Milestone
  - Glyphosate (spot treat)
• **Smooth Groundcherry**
  - A perennial with deeply rooted thick fleshy rhizomes.
  - Reproduces by seeds & rhizomes.
  - Fruit is covered by a papery bladder-like case and flowers are greenish-yellow with purple center.

• **Yellow Nutsedge**
  - A perennial with triangular stems and long-grass like leaves that are yellowish-green.
  - Can reproduce by seed, but mainly by tubers on the end of the rhizome roots.
  - Dormant tubers remain viable >10 yrs.
- **Smooth Groundcherry Control**
  - Crossbow (7)
  - Glyphosate (7) (spot treat)

- **Yellow Nutsedge Control**
  - Usually not a problem in pastures
  - halosulfuron products
- **Hemp Dogbane**
  - Native perennial weed.
  - Grows 1-4 feet tall and reproduces by root and seeds.
  - Resembles milkweed, shoots emerge late May-June with reddish color stem.
  - Can be toxic to livestock (esp. Horses)

- **Milkweed**
  - A perennial with a thick un-branched stem.
  - Reproduces from seeds or rhizomes.
  - Stem produces milky sap when broken.
  - Opposite leaves (sometimes whorled) are oblong to elliptic with a prominent white midvein.
• Hemp Dogbane Control
• Remedy Ultra
• 2,4-D
• Cimarron Max
• Curtail
• Glyphosate (spot treat)

• Milkweed Control
• Frequent mowing
• Milestone (F)
• Crossbow (F)
• Glyphosate (spot treat)
• **Canada Thistle**
  • A persistent perennial plant that spreads by wind-blown seeds or rhizomes.
  • Leaves are deeply lobed with spiny margins.
  • Flowers are pink to purple in color.

• **Bull Thistle**
  • A biennial with prominent spines.
  • A basal rosette is formed the first year while erect branching stems develop the second year.
  • Spine-tipped bracts support reddish purple flowers.
• **Canada Thistle Control**
  - Forefront
  - Milestone
  - Curtail
  - Stinger
  - Glyphosate (spot treat)

• **Bull Thistle Control**
  - 2,4-D
  - Forefront
  - Milestone
  - Crossbow
  - Curtail
  - Stinger
  - Glyphosate (spot treat)
• **Cocklebur**
  - An erect growing branched summer annual with distinctive prickly burs.
  - Burs are elliptical to egg shaped.
  - Leaves are spirally arranged with deeply toothed margins.

• **Burdock**
  - A biennial producing a large coarse leaved rosette the first year and a much more erect, branched stem shape the second year.
  - The plant produces spiny persistent burs that terminate in Velcro-like hooks.
**Cocklebur Control**
- Cimarron Max
- Crossbow
- Dicamba
- Forerfront
- Milestone
- Stinger
- Glyphosate (spot treat)

**Burdock Control**
- Cimarron Max
- Crossbow
- 2,4-D
- Forerfront
- Milestone
- PastureGard
- Glyphosate (spot treat)
• **Yellow Foxtail**
  • A clump-forming summer annual that reproduces by seed and has a characteristic bottle-brush or “fox tail” seedhead.
  • Green Foxtail & Giant Foxtail are very similar species.

• **Jimsonweed**
  • An annual that grows to five feet tall.
  • The leaves are coarsely serrated along the edge and 3-8 inches long.
  • A hard spiny seed capsule forms before bursting open when ripe.
• Yellow Foxtail Control
• In Alfalfa
  – Balan
  – Eptam
  – Clethodim
  – Post/Post Plus

• Pastures
  – No good herbicides

• Jimsonweed Control
• Cimarron Max
• dicamba products
• Forefront
• Crossbow
• Glyphosate (spot treat)
• **Bur Cucumber**
  - This herbaceous plant is an annual vine growing up to 25' long that develops multiple lanky stems.
  - Can grow in moist meadows in the floodplain, banks of ditches and rivers.

• **Fall Panicum**
  - Is a fibrous-rooted annual grass that reproduces by seeds.
  - Fall panicum flowers from June to October and produces seed in late summer and fall.
  - It has a distinctive pyramid shape and long, wispy flower stalks.
• **Bur Cucumber Control**
  • Multiple mowings
  • dicamba products

• **Pastures**
  – Usually not a problem

• **Fall Panicum Control**
  • In Alfalfa
    – Balan
    – Eptam
    – Clethodim
    – Poast/Poast Plus
    – Glyphosate (spot treat)
• **Common Ragweed**
  - An erect, branching summer annual.
  - Pollen from this plant is most common cause of hay fever.
  - Reproduces from seed.
  - Leaves are deeply cleft on margins forming rounded to pointed lobes.

• **Giant Ragweed**
  - An erect summer annual that can reach six feet tall.
  - Reproduces by seed.
  - Mature plant leaves generally have 3-lobes, but sometimes 5-lobes.
Common Ragweed Control
- 2,4-D
- Crossbow
- Curtail
- dicamba products
- Forrefront
- PastureGard
- & More
- Glyphosate (spot treat)

Giant Ragweed Control
- 2,4-D
- Crossbow
- Curtail
- dicamba products
- Forrefront
- PastureGard
- & More
- Glyphosate (spot treat)
• **Redroot Pigweed**
  - An erect branching summer annual.
  - Reproduction is from seed.
  - Small greenish flowers are produced in dense, stiff spike-like terminal shoots.
  - Fibrous taproot is usually red.

• **Spiny Amaranth**
  - A summer annual that grows erect and freely branches.
  - Roots are fibrous from a well developed taproot.
  - Has a pair of sharp spines at base of most leaves.
- **Redroot Pigweed Control**
  - Cimarron Max
  - dicamba products
  - Metsulfuron
  - PastureGard
  - Glyphosate (spot treat)

- **Spiny Amaranth Control**
  - 2,4-D
  - Cimarron Max
  - dicamba products
  - Crossbow
  - Milestone
  - Glyphosate (spot treat)
• **Smartweed**
  An erect or ascending, often branched summer annual.
  Reproduction is by seed.
  Stems are green or reddish with bright pink to white flowers that form on a spike-like cluster.

• **Smooth Bedstraw**
  An erect to prostrate mat forming perennial.
  Reproduces by rhizomes and stolons.
  Stems are smooth and have a whorled leaf pattern.
  Mature plants have numerous small white flowers.
• Smartweed Control
  • Forefront
  • Milestone
  • Grazon P & D
  • Metsulfuron
  • Glyphosate (spot treat)

• Smooth Bedstraw Control
  • Crossbow
  • Forefront
  • Milestone
  • Glyphosate (spot treat)
• **Spotted Knapweed**
  - A perennial, invasive plant that can produce large amounts of seed from numerous terminal & axillary heads.
  - Grazing capacity can be reduced 65-90% if left untreated.

• **Queen Anne’s Lace**
  - Also known as wild carrot this plant is an erect growing biennial reaching 3-4 feet in height from a tough, fibrous taproot.
  - Reproduces by seed.
  - Flat-topped umbel flower with white petals.
- **Spotted Knapweed Control**
  - Forefront
  - Milestone
  - Curtail
  - dicamba products
  - Stinger
  - Glyphosate (spot treat)

- **Queen Anne’s Lace Control**
  - Cimarron Max
  - Crossbow
  - Metsulfuron
  - Glyphosate (spot treat)
Ironweed
- A warm season perennial.
- Fibrous taproot and rhizomes, but reproduces primarily by seeds.
- Spreading flat-topped flower with 13-30 purple colored florets.

Goldenrod
- A tall erect perennial.
- Reproduces by seed or rhizome growth and can form large patches.
- Flowers are yellow, open in August and remain until frost.
- Ironweed Control
- Crossbow
- Forefront
- Milestone
- Pasture Gard
- Redeem
- Glyphosate (spot treat)

- Goldenrod Control
- dicamba products
- 2,4-D
- Forefront
- Curtail
- Glyphosate (spot treat)
• **Johnsongrass**
  • A course textured perennial grass.
  • Reproduces by seeds and aggressive, thick rhizomes.
  • Seedhead is a large, open, coarse purplish panicle.

• **Broomsedge**
  • A clump forming perennial grass.
  • Most commonly recognized in the dormant stage as copper-tan clumps of dried leaves & stems.
  • Reproduces by seeds and short rhizomes.
• **Johnsongrass Control**
  - Multiple mowings/grazing
  - Glyphosate (spot treat)

• **Broomsedge Control**
  - Add nutrients
    - Lime
    - Phosphorus
• **Ailanthus** (Tree-of-Heaven)
  - Aggressive competitor, produces allelopathic compound suppresses growth of native trees/shrubs
  - Prolific seeder (300,000/tree/yr.)
  - Often mistaken for Black Walnut, Sumac or Butternuts
  - Sap can cause heart problems if in contact with skin

• **Bush Honeysuckles**
  - Multiple species cause problems: Tartarian, Amur, and Morrow
  - Upright deciduous shrubs with long arching branches 6 to 20 feet tall
  - Honeysuckle out competes and shades out desirable native woodland species
• Ailanthus Control
• Foliar
  – Crossbow
  – triclopyr products (Garlon 3A, Garlon 4, Remedy, etc.)
  – Glyphosate
• Cut stump
  – triclopyr products (as above)
  – imazapry products (Stalker, Chopper, Arsenal etc.)

• Bush Honeysuckle Control
• Foliar
  – Crossbow
  – triclopyr products (Garlon 3A, Taho 3A etc.)
  – Glyphosate
• Cut stump
  – Tordon RTU
  – Pathway
- **Multiflora rose**  
  A perennial, prickly-stemmed shrub.  
  Reproduces by seed and runner stems which form adventitious roots.  
  White flowers bloom in June and form clusters of red berries.

- **Autumn Olive**  
  A medium to large invasive, deciduous shrub.  
  Reproduces by seeds dispersed by birds & other animals.  
  Can grow in poor soil & in low pH soil.
• Multiflora rose Control
  • Cimarron Max
  • Metsulfuron
  • Remedy Ultra
  • Crossbow
  • Spike 20P
  • Glyphosate (spot treat)

• Autumn Olive Control
  • Remedy Ultra
  • Crossbow
  • Garlon
  • Arsenal
  • Glyphosate (spot treat)
In Summary

- Weeds can reduce quantity and quality of hay and pasture forages
- Properly Identify the weed(s)
  - Determine the life cycle and best approach to control weeds
- Use herbicides as the last option
  - When using herbicides, be sure to read and follow the label, use appropriate amounts and wear PPE
Questions?