Healthy pastures are healthier for horses
* Overgrazed plants may have higher % fructans, sugar and starch and are lower in fiber
* Horse owners fear “lush” pastures
* Overgrazed pastures allow weeds and toxic plants to establish
To maintain healthy pastures with unlimited turnout generally requires _____ acres per horse.

< 1.5 acre per horse = exercise lot
> 1.5 acre per horse = pasture
Grazing “Guidelines”

Under “normal conditions” one horse can be maintained on:

- ½ acre of pasture, if turnout time = < than 3 hr/d
- 1 acre of pasture, if turnout time = 3 to 8 hr/d
- 1 ½ acre of pasture, if turnout time = 8 to 12 hr/d
- > 2 acres = unlimited turnout time

*Mowing, irrigating, fertilizing, over-seeding, and rotating pastures can allow higher animal densities while still maintaining proper vegetative cover. Adverse environmental conditions, poor soil health, and lack of management will reduce recommended grazing time.*
How can we keep horses from overgrazing pastures? What practices can we employ?

Keep them in the barn

Keep them in a barnyard

or???????????
Managing pastures on high density farms

* Select forages that are appropriate for horses and that can better handle grazing pressure
* Utilize rotational grazing
* Manage turnout time using sacrifice areas
Rotational grazing

✓ What is rotational grazing?
✓ How do you know how long to keep horses on a pasture before moving them?
Rotational Grazing Paddock layout

KEY
- Stable
- Water

sacrifice area
Animal Concentration Areas (ACAs)
Sacrifice Area (ACA, Stress Lot)

* Small enclosure - paddock or corral
* Generally has no vegetation
* Small area is sacrificed to benefit the rest of the pastures.

When should horses be confined to a sacrifice area?
Obstacles to using stalls, stress lots, and small rotational paddocks

- Movement is critically important to equine health and well-being.
- Can’t change food rapidly – must gradually introduce to pastures.
- Strong herd hierarchy – alpha animal dominates food and shelters.
- Can’t combine horses of all age groups and sexes.
- Some horses just don’t get along.
Sacrifice Area Size

- Highly variable
- Based on number of horses, ages, and behavior
- Often need separate sacrifice areas for different age groups
- Need larger areas for younger horses
- Need larger areas if horse population is constantly changing due to challenges to herd hierarchy
- 20’ x 20’ for one animal; 20 x 100’ allows several animals to exercise

Washington State University
Sacrifice Area Construction

- Remove top soil.
- Slightly slope the area so that water runs off of the stress lot.
- Cover the area with a layer of stone aggregate topped with a minimum of 2-3 inches of finer stone dust.
Top of the Line-Sacrifice Lot Design

✓ Geotextile can be used to separate layers.
✓ Cover geotextile with 4 to 6 inches of crushed rock (1/4 to 1 ½”) and a minimum of 2 to 3 inches of stone dust.
Surface Options

No concrete
Sand / gravel
✓ Do not feed on sand - ingested sand causes repeated colic
Wood chips / sawdust
✓ Avoid Black Walnut and Cherry, etc.
✓ Higher maintenance - wood chips breaking down and making mud.
Pasture Weed Management
What is a weed?

- A plant out of place
- A plant growing where it is not wanted
- A plant whose virtues have not yet been discovered
- Plants that are competitive, persistent, and interfere negatively with human activity
Weed Benefits

• Stabilize soil - reduce erosion
• Absorb excess nutrients
• Provide habitat and food for wildlife
• Provide nectar for bees
• Serve as a genetic reservoir
• Can serve as a source of nutrition
• Employment opportunities
### Seed Production for Some Common Weeds

<table>
<thead>
<tr>
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<tbody>
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<td>Common ragweed</td>
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<tr>
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<td>Dandelion</td>
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</tr>
<tr>
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<td>6,420</td>
<td>E. black nightshade</td>
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<tr>
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<td>Lambsquarters</td>
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<td>PA smartweed</td>
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<tr>
<td></td>
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<td></td>
<td>Redroot pigweed</td>
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<td></td>
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<td>Shepherdspurse</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Velvetleaf</td>
<td>Annual</td>
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# Weed Seed Longevity in Soil

<table>
<thead>
<tr>
<th>Weed</th>
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<tr>
<td>Shepherdspurse</td>
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<tr>
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<td>Dandelion</td>
<td>6</td>
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<tr>
<td>Redroot pigweed</td>
<td>10</td>
</tr>
<tr>
<td>Green foxtail</td>
<td>39</td>
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</tbody>
</table>
Movement of Weeds into New Areas

- Weed seeds can be in manure and hay.
- Weed seeds can contaminate crop seeds (buy certified seed).
Common Milkweed
The best defense against weeds is maintaining a thick stand of healthy plants that can suppress weeds.
When pastures are overgrazed and forages are eliminated, weeds fill in the bare areas and thrive.
• If weed pressure is high, it is best to develop a management plan to improve the survival and health of pasture grasses before choosing to eliminate weeds.

• Proper soil fertility and grazing management will eliminate, or greatly reduce, the need to control weeds.
• If weed pressure is high and management changes warrant control of existing weeds, weed management techniques should be considered.

• However before determining the best weed control approach, it is important to identify the weeds that you wish to control and understand their life cycle.
Weeds occur as:

- Winter annuals
- Summer annuals
- Biennials
- Perennials
• Summer annual weeds tend to proliferate in horse pastures

• Seedlings are growing in early summer when forage growth is slowing

• Pastures should be rested or rotated to allow grasses to grow so that they can compete with weeds

• Weeds should be mowed to reduce seed production