

SMALL ACREAGE PASTURE MANAGEMENT



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Why manage your pasture?

- Keep your forage plants healthy and productive
- Increase forage production and grazing capacity
- Improve forage use
- To provide a green pasture for your animals

Why manage your pasture?

- Weed control
- Erosion control
- Preserve water quality
- Enhance wildlife habitat

What are you managing?

- Animals
- Plants (Grasses)



Animals

- Understand how your animals graze
 - What behaviors affect pastures
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Ruminants



Behaviors that damage grass

- Laying down while chewing cud
- Water tanks
- Ripping motion when grazing
- Grazing when wet
- Not continuous grazers

Horses




Behaviors that damage grass

- Sharp hooves and shoes
- Quick turns
- Sliding
- Running
- Continuous grazers
- Grazing when wet
- Defecating




Plants

- Understand how grass grows
 - How grazing affects grasses
 - Grazing to benefit grass growth
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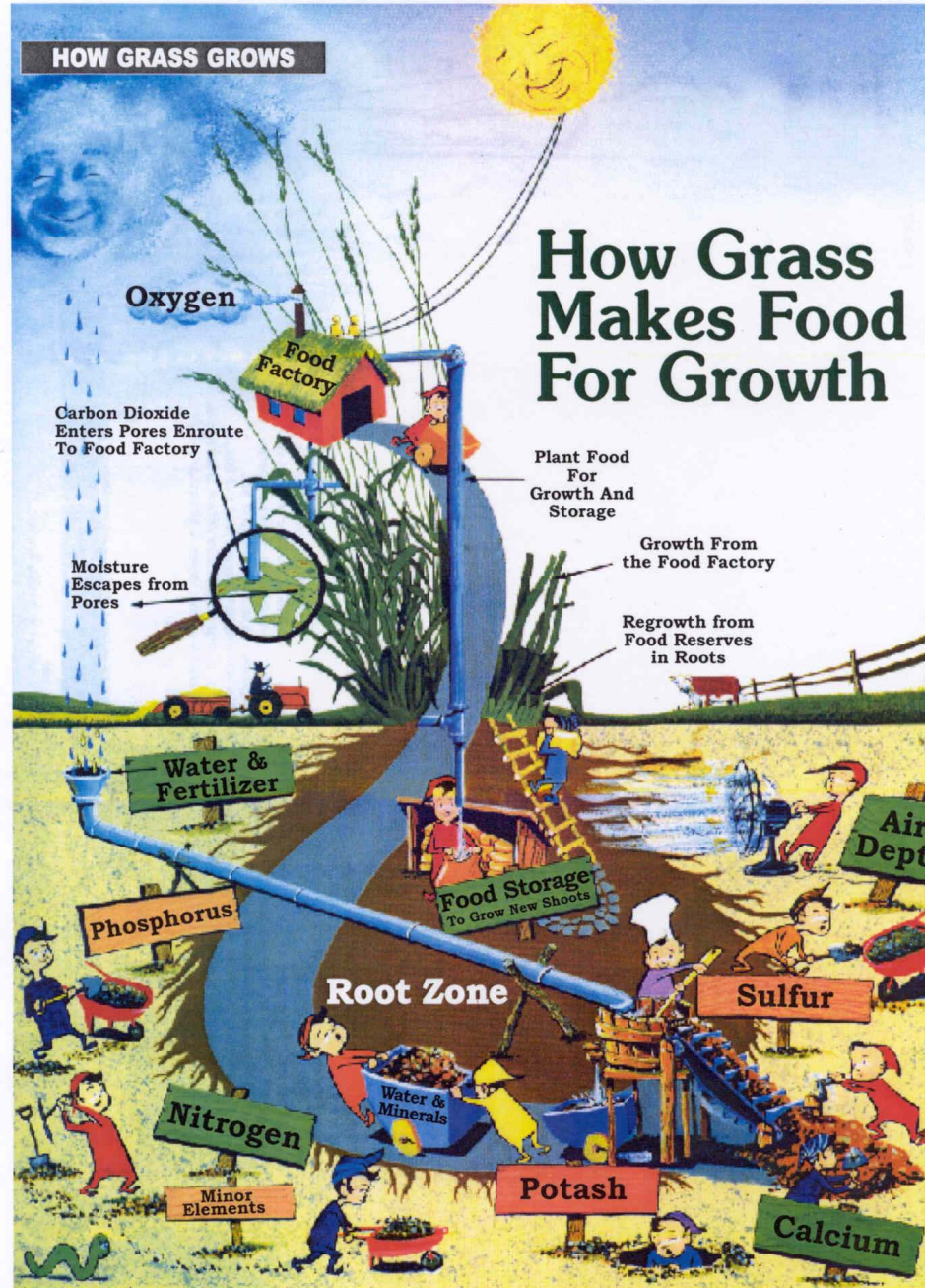


Key points to know about pasture plants

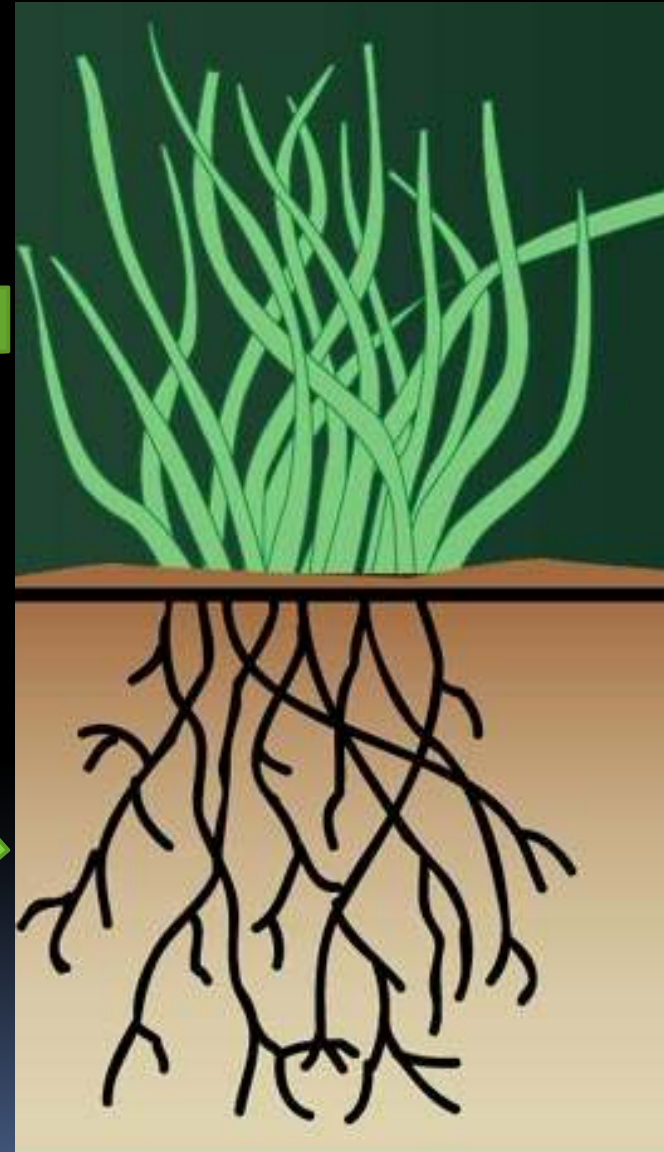
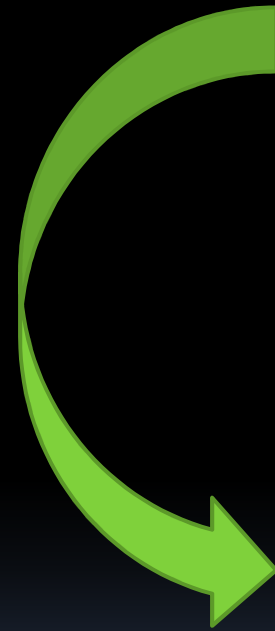
- Leaves manufacture carbohydrates for the plants. Preservation of leaf surface is critical for carbohydrate production
 - To ensure regrowth, you must preserve the growing points on your plants
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HOW GRASS GROWS

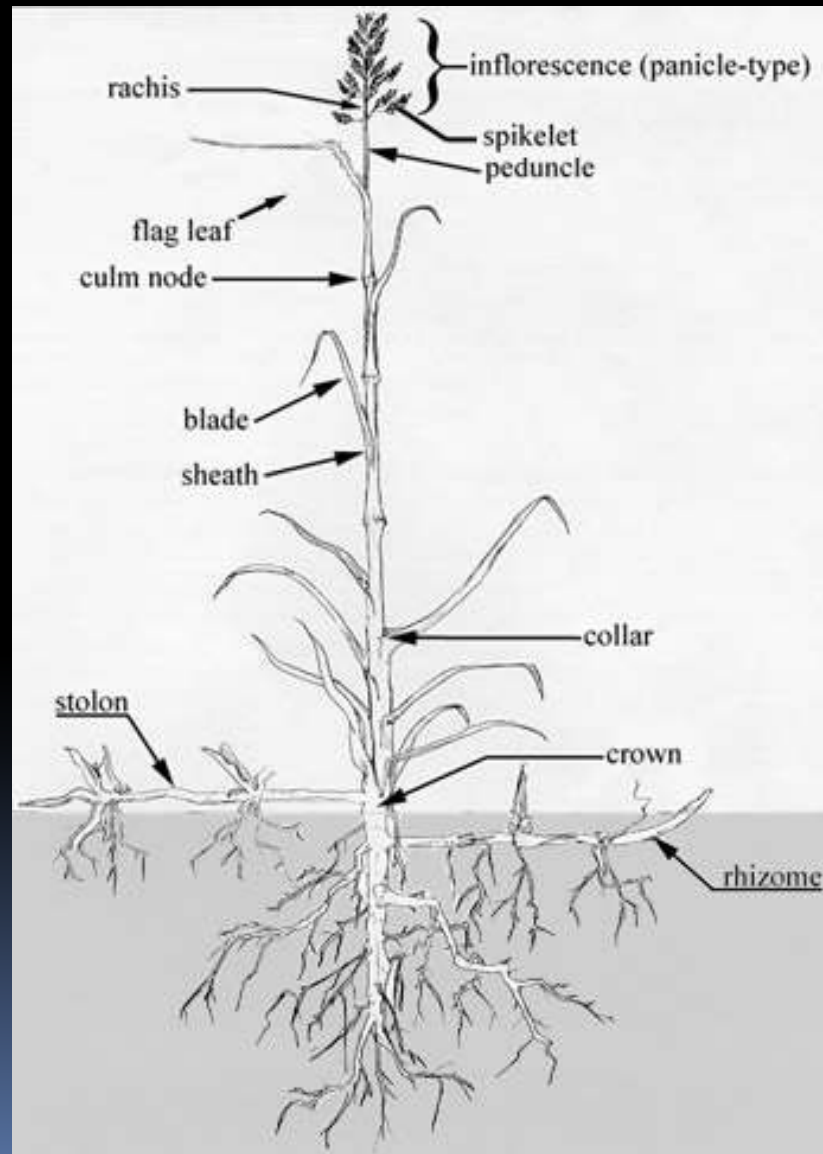
How Grass Makes Food For Growth



Leaves produce
carbohydrates
that are stored
in the roots

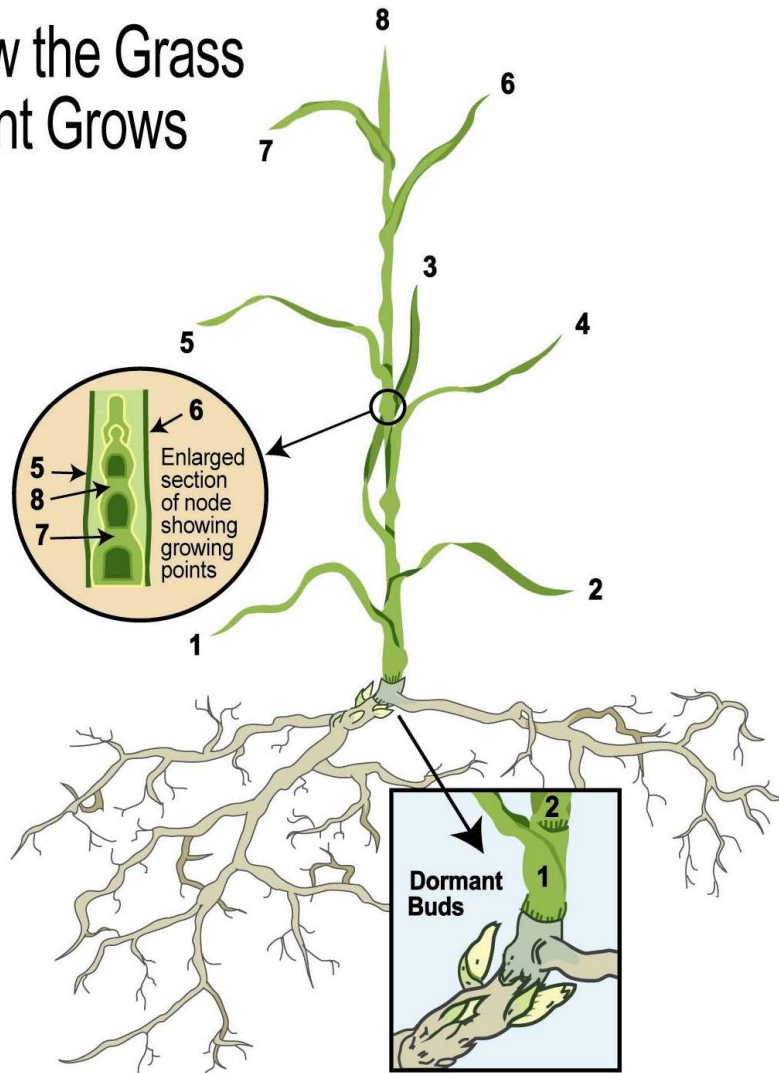


How grass grows



How grass grows

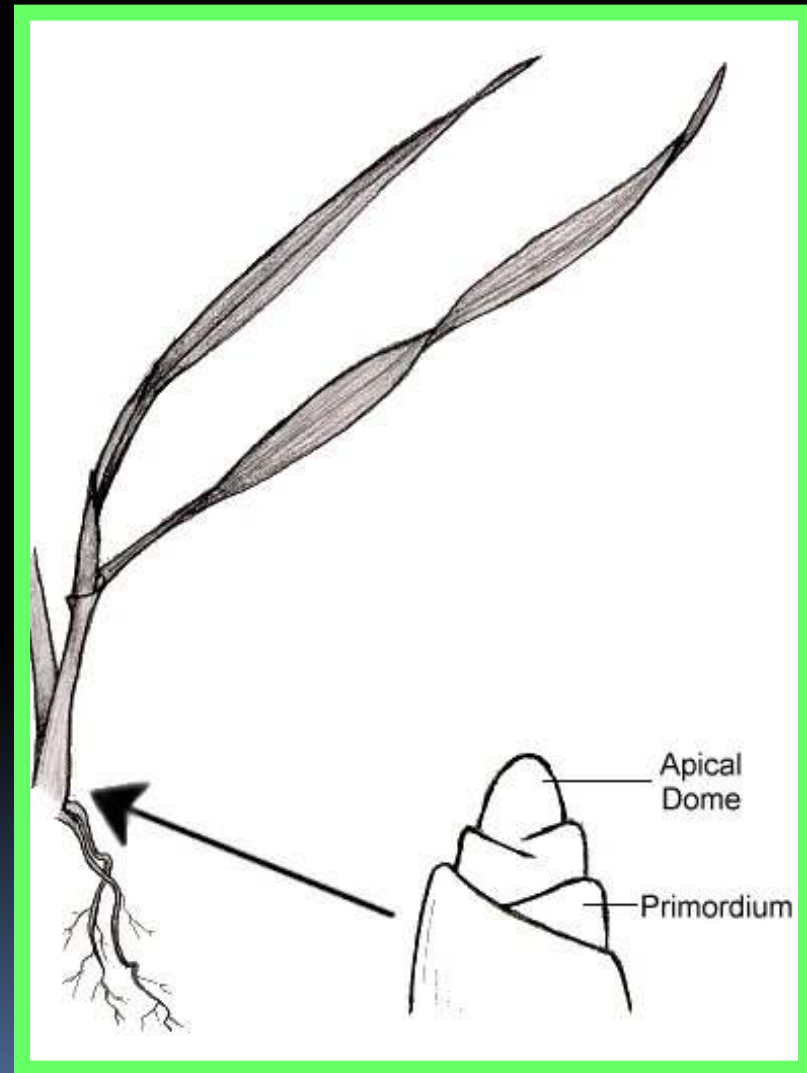
How the Grass Plant Grows



As the stalk elongates, the growing point moves up the stem.

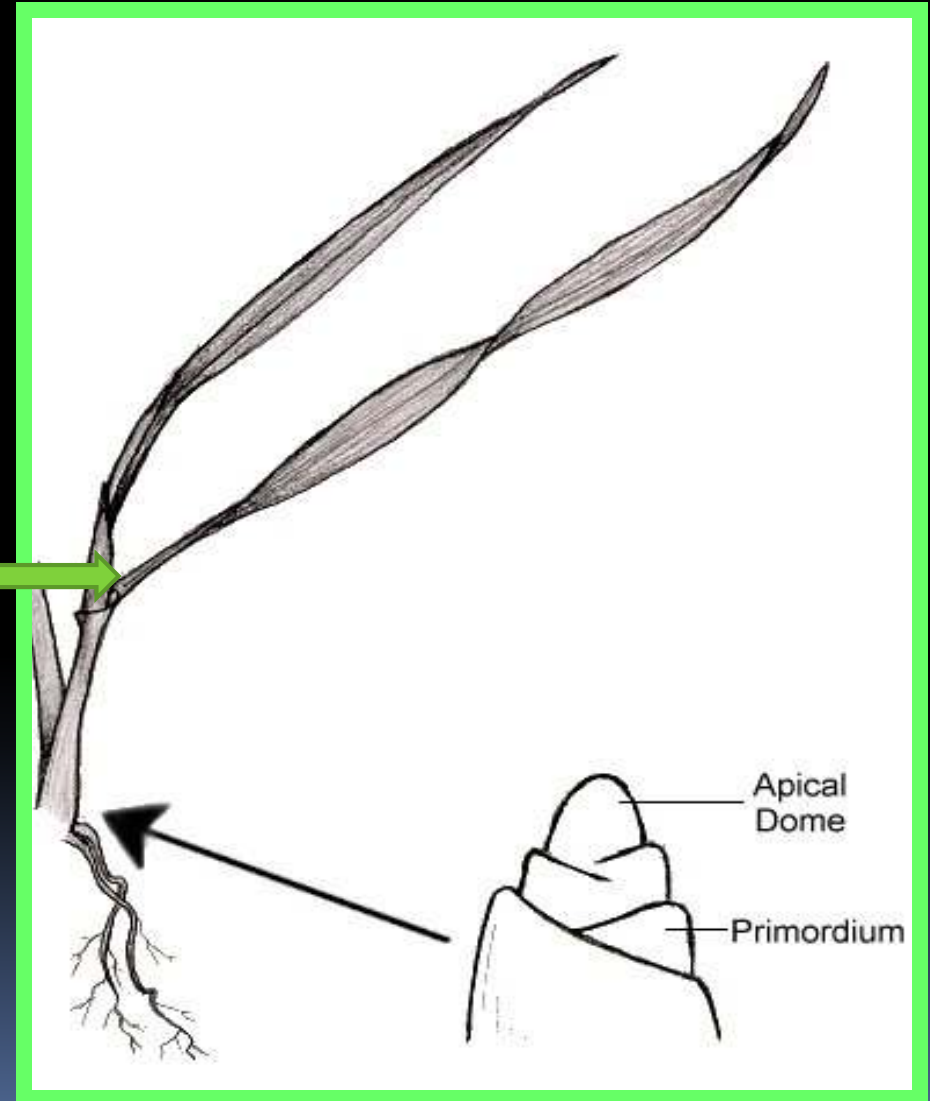
How grass grows

- In the spring and after over grazing, the growing point (aka meristem) is located at the base of the plant

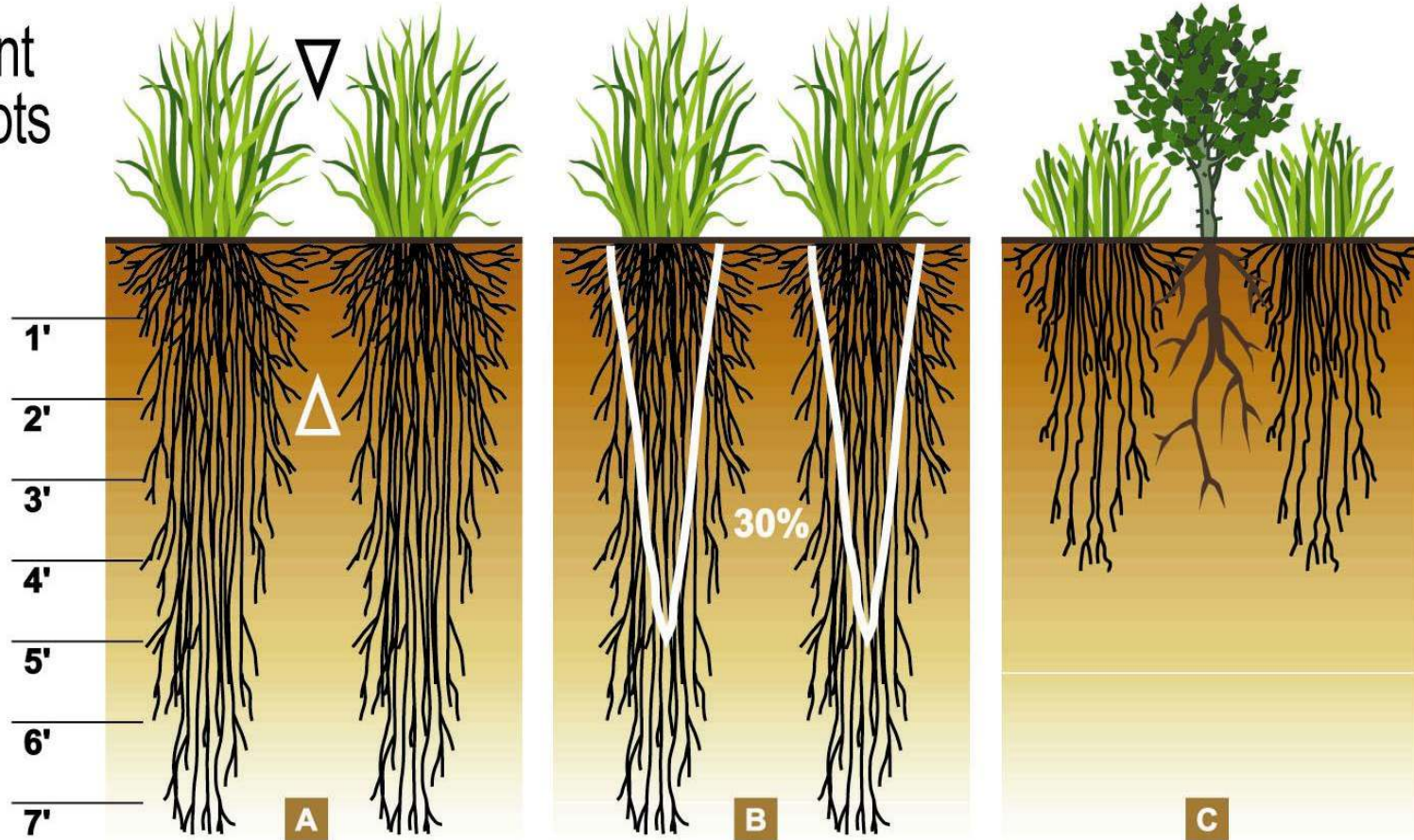


How grass grows

- As the plant grows, growing points (Intercalary meristems) develop at the leaf base. Preserving these points is critical to regrowth.



Plant Roots



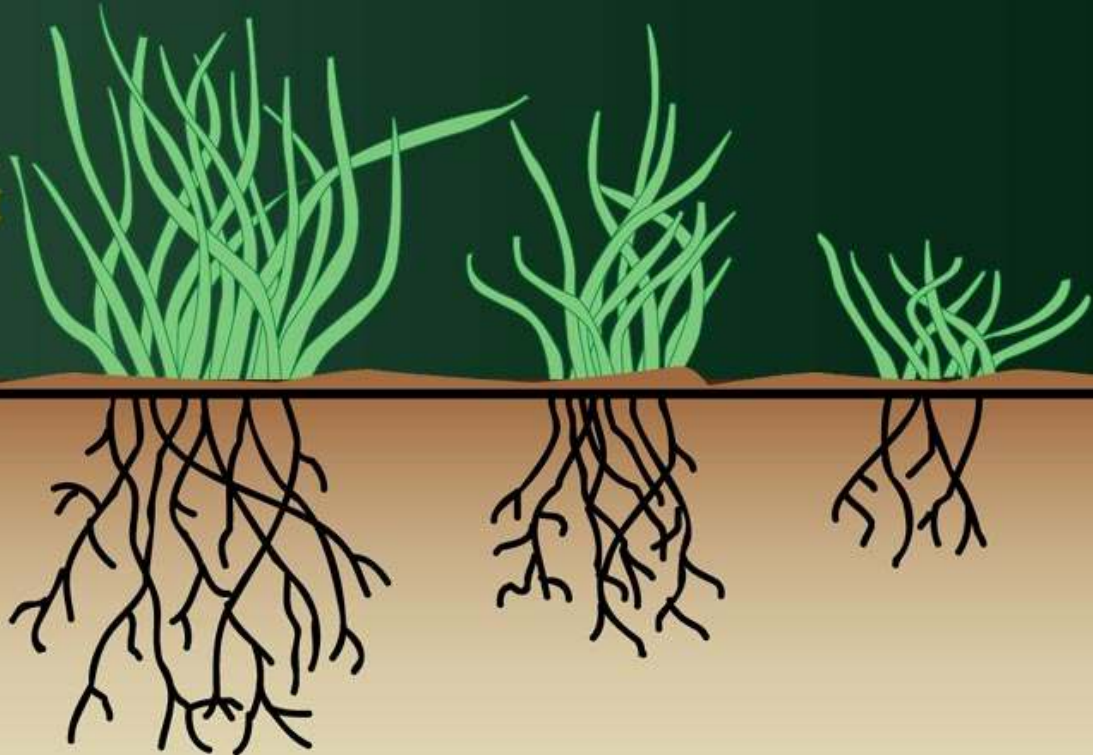


**Post-Grazing
Stubble**

**Root
Response**

**Grazing
Period**

**Recovery
Allowed**



Short

Long

Continuous

Long

Short

None

Forage health



How grazing affects root health

**Percent Leaf
Removed**

**Root Growth
Decline**

10%

0%

20%

0%

30%

0%

40%

0%

50%

2-4%

60%

50%

70%

78%

80%

100%

90%

100%

How grazing affects root health

**Percent Leaf
Removed**

**Root Growth
Decline**

10%

0%

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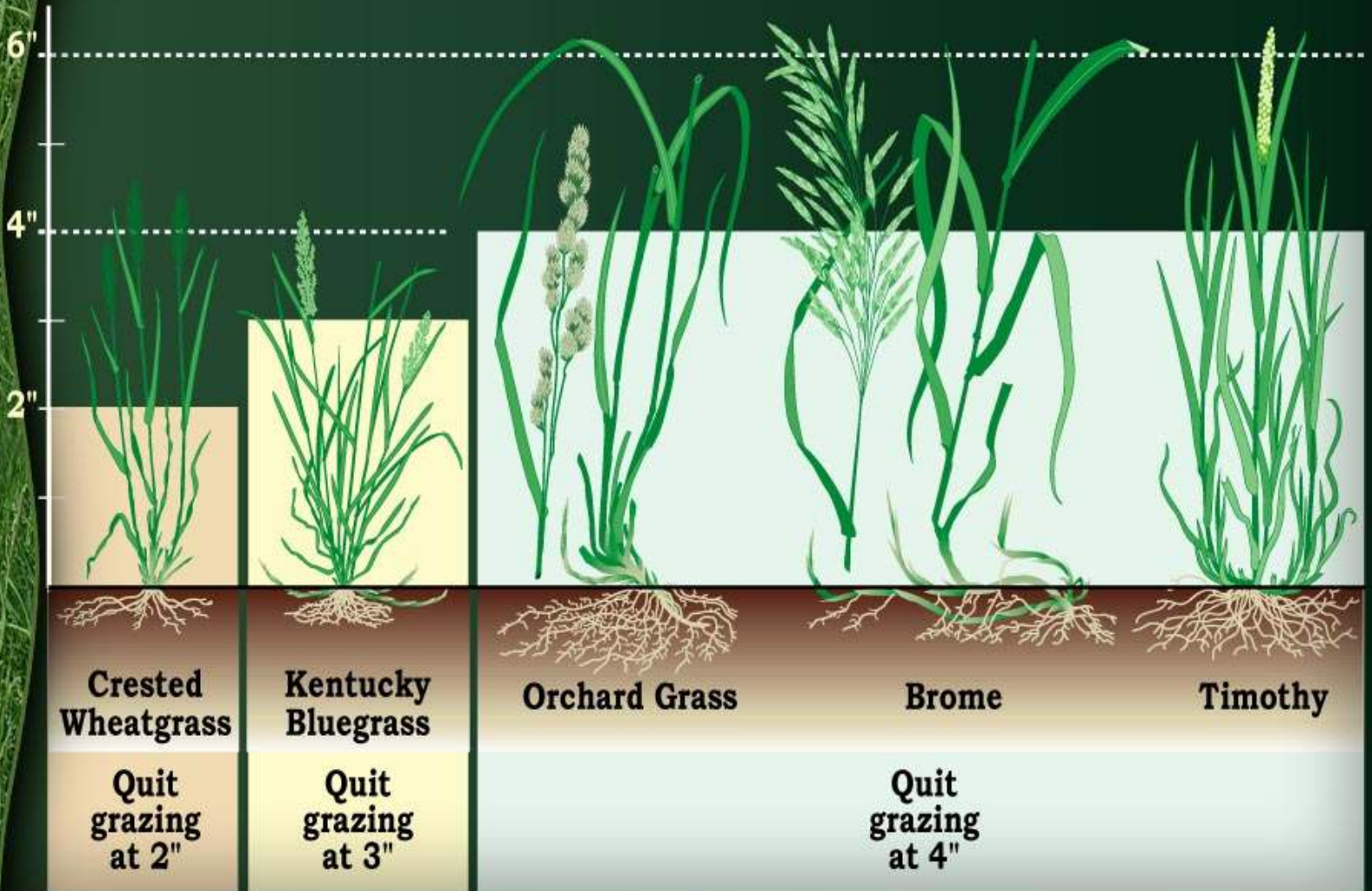
90%

100%

Take half
leave half

Take half, Leave half rule

Minimum Height Before Grazing



**Crested
Wheatgrass**

**Quit
grazing
at 2"**

**Kentucky
Bluegrass**

**Quit
grazing
at 3"**

Orchard Grass

Brome

Timothy

**Quit
grazing
at 4"**

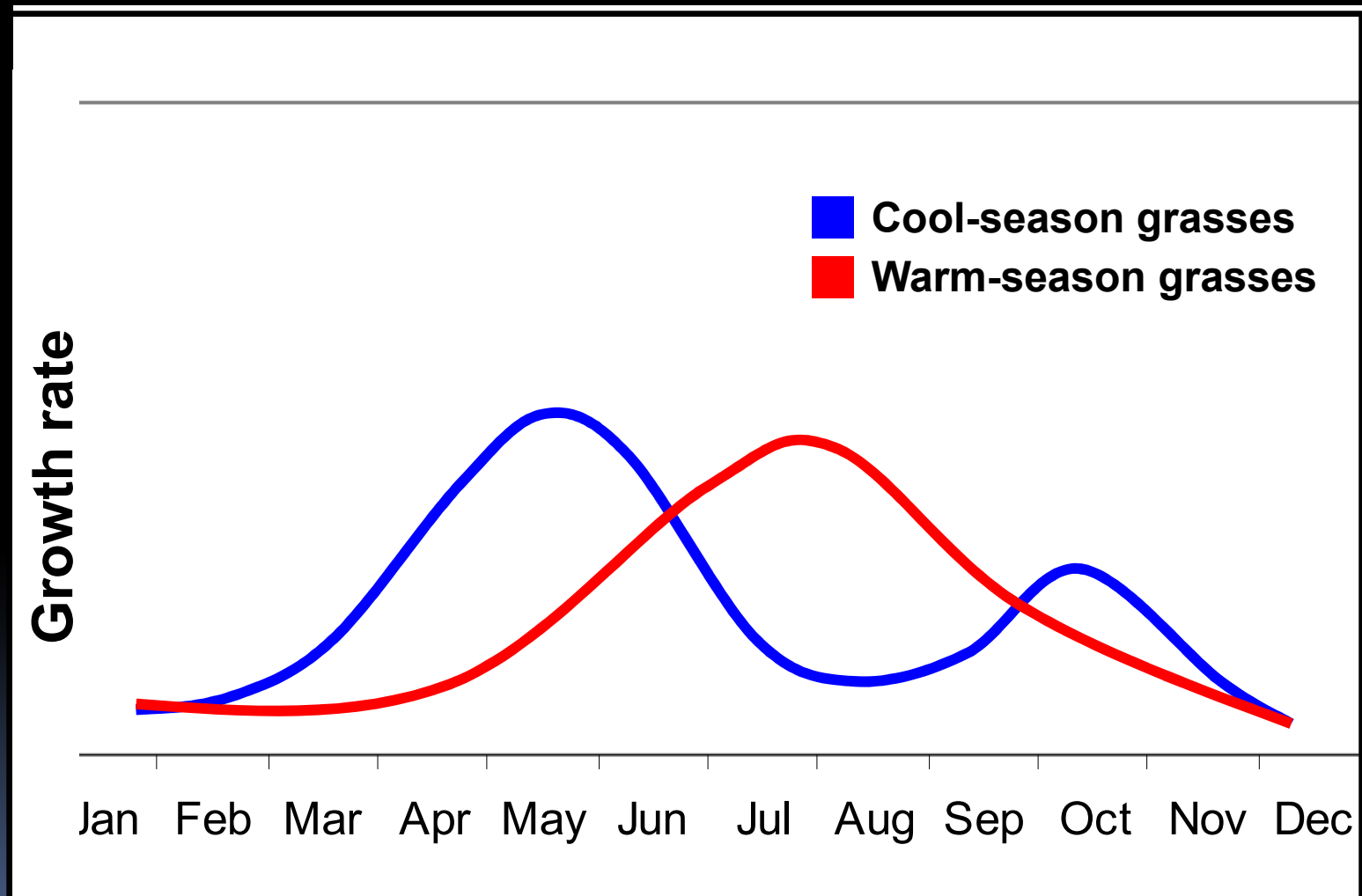
Cool vs. Warm season grasses

- Cool season grasses
 - Start growth late winter, early spring
 - Dormant during summer months
 - Have 2 growth peaks
 - Most growth in May/June
 - Second minor growth in September/October

Cool vs. Warm season grasses

- Warm season grasses
 - Start growth in late spring, early summer
 - Main growth during summer
 - Only one growth period in summer

Cool vs. Warm season grasses



Bunch vs. Sod forming grasses


- Bunch grasses
 - Grow in bunches or clumps
 - Open spaces between bunches
 - Normally allow for more diversity
 - Periodic seeding helps maintain pasture health
 - Most native grasses


Bunch vs. Sod forming grasses

- Sod forming grasses
 - Spread by stolons or rhizomes to form “sod”
 - Aggressive sod formers may crowd out other species
 - Mostly introduced grasses



Grazing Management

- According to the “Forage Information System” Grazing Management is defined as
 - “The manipulation of animal grazing in pursuit of a defined objective”
- 



So what is your defined objective?

- Allow your animals 24/7 access to pasture?
- Maintain or improve your pasture forage?
- Produce enough forage for your animals?
- Manage to maximize forage production and grazing time allowed

What do you have right now?

- Evaluate your pasture as it is
 - Grass coverage/forage production
 - Weed issues
 - Fencing
 - Number of animals
- What will it take to get it where you want it?
 - Reseeding
 - Weed control
 - Grazing management
 - Fencing

Forage production

- Dryland
 - 0.5 to 2 ton/year/acre
- Irrigated
 - 2 to 6 ton/year/acre

A 1000 pound horse can eat approximately 20 pounds of hay a day or over 3.5 tons per year

Pasture utilization

- 1000 pounds produced on one acre
 - Minus
 - Take half leave half or 50%
 - Damage 15%


Actual forage available for grazing on the one acre is
350 pounds

Example

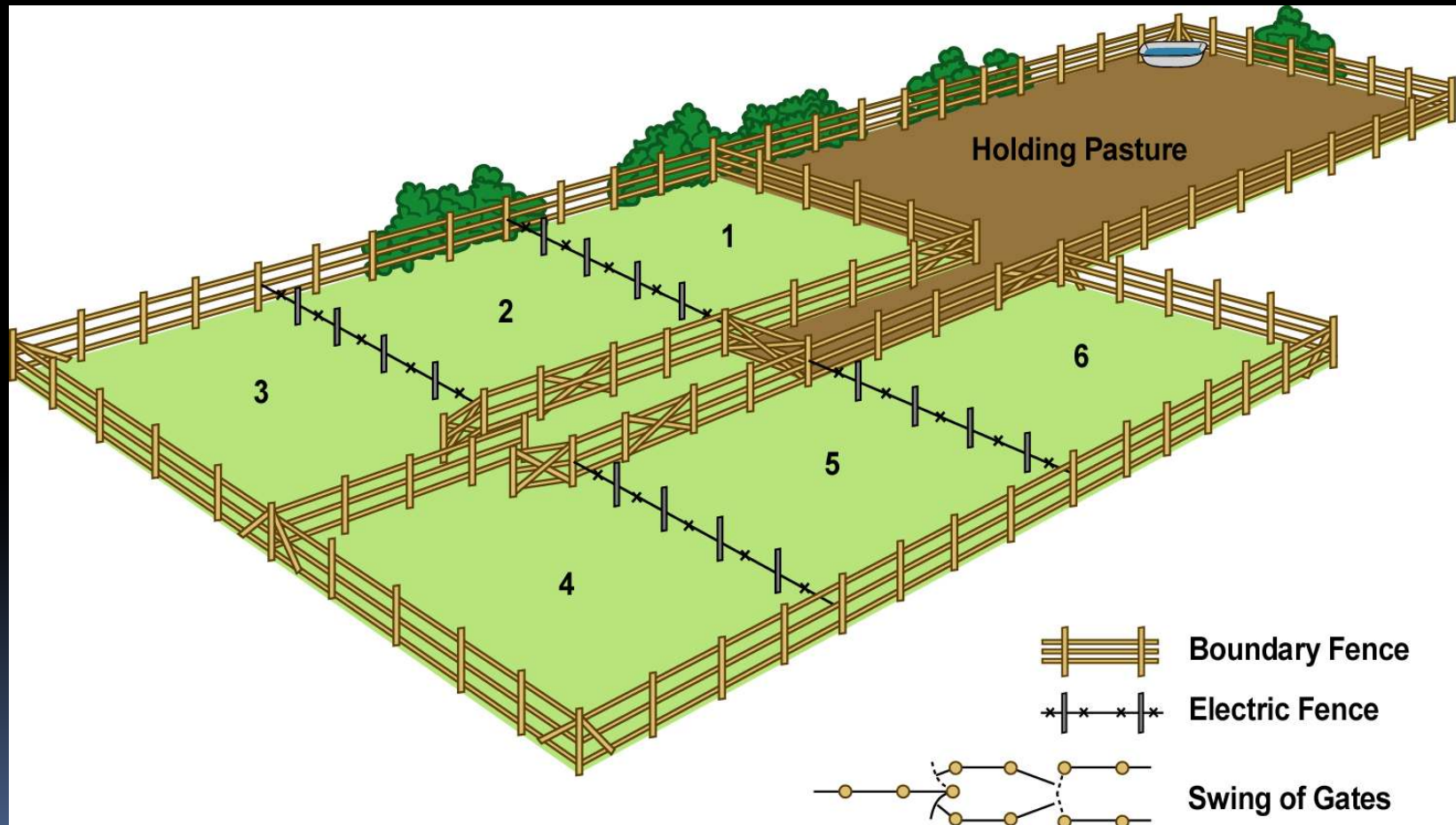
- One horse consumes 3.5 tons per year
- One acre produces 350 pounds per year
- It will take 20 acres to support one horse for one year

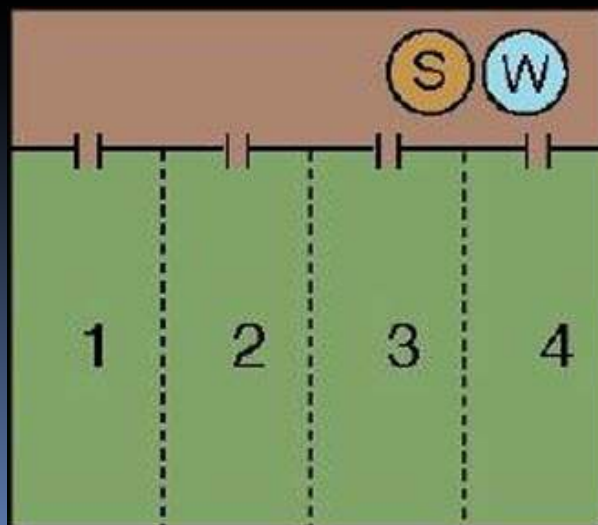
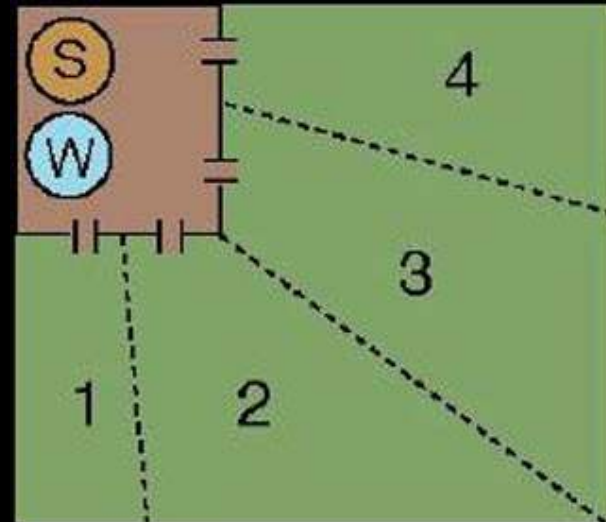
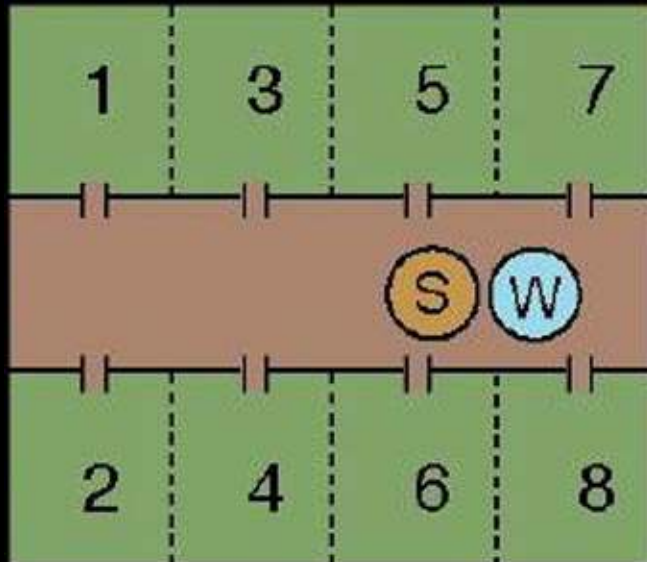


Grazing systems

- None
 - Intensive
 - Rotational
- 

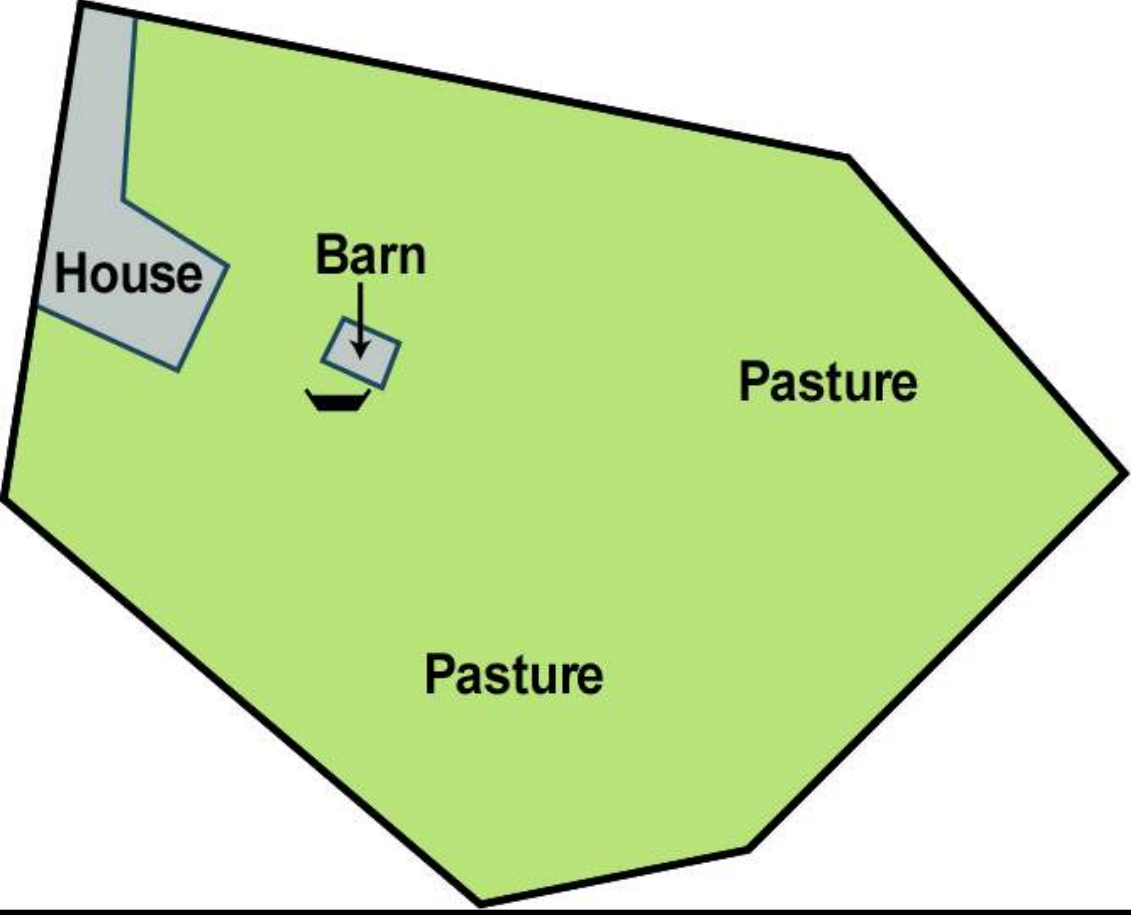
Rotational grazing system





LEGEND

- *** Permanent Fence
- || Gate
- Water
- Lane



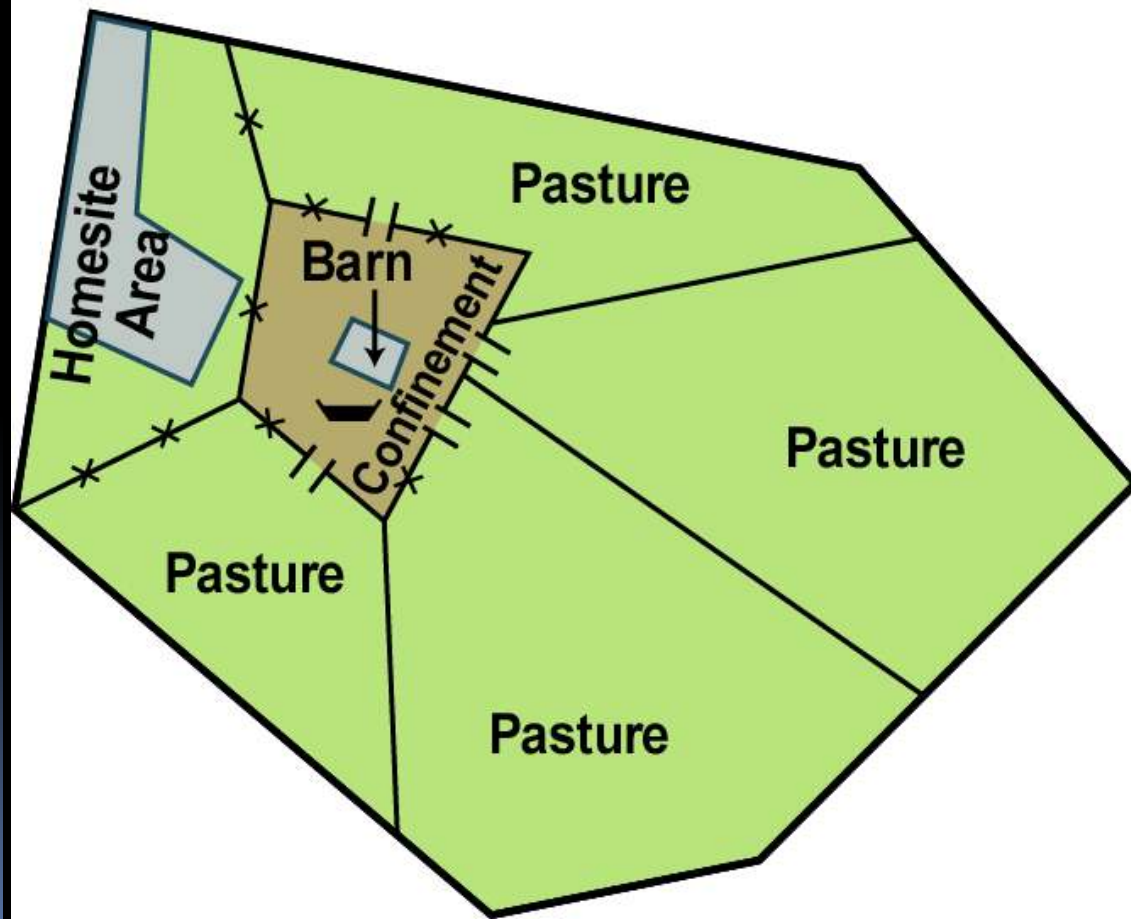
LEGEND

--* Permanent Fence

|| Gate

Water

Lane







How grazing time affects grass

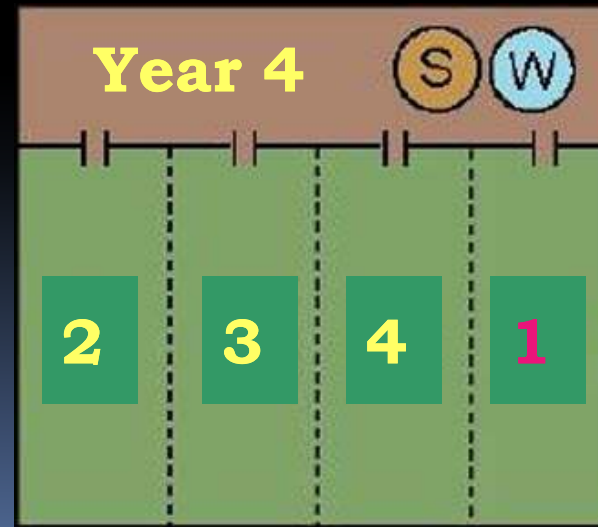
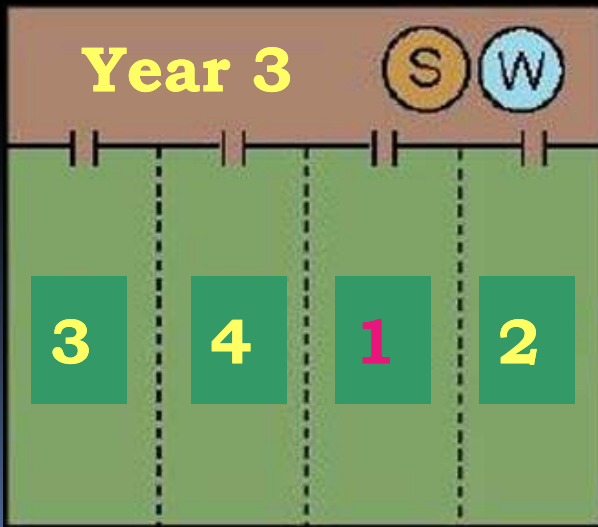
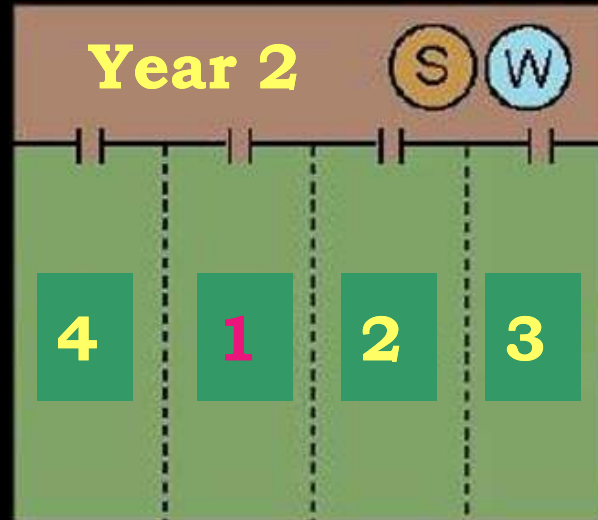
- Do not graze a pasture for longer than 7 to 10 days
 - New growth beginning to appear
 - Animals will preferentially graze new growth

So how does it work?

- Start grazing in cell 1 when grass is 6-8" tall
- Animals graze all forage in cell down to 3-4" tall or time in cell is 7 – 10 days
- Animals start grazing in cell 2
- Graze till cell 2 is 3-4" tall or 7 – 10 days
- Animals start grazing in cell 3
- Graze till cell 3 is 3-4" tall or 7 – 10 days

So how does it work?

- Animals start grazing in cell 4
- Graze till cell is 3-4" tall or 7 – 10 days
- Repeat for the number of cells
- If cell 1 is not 6 – 8" tall, animals remain in dry lot
- Cells require a minimum of 28 days rest to regrow (more if dryland or drought)



Sizing your cells

- Cells should be sized so that all the grasses in the cell are evenly grazed in the 7 to 10 days
- Start with approximately 1000 sq. ft. per horse in the cells
 - If in 7 days, grass is grazed below 3-4", enlarge cell
 - If in 7 days, grass is not all grazed to 3-4", make cell smaller
 - Take into consideration your horses personality

How to extend grazing time

- Feed animals prior to turn out
- Limit time in the cell each day

	Land Area			
	30 acres	10 acres	5 acres	2.5 acres
1	24 hrs/day	8 hrs/day	4 hrs/day	2 hrs/day
2	12 hrs/day	4 hrs/day	2 hrs/day	1 hrs/day
3	8 hrs/day	2.6 hrs/day	1.3 hrs/day	40 mins/day
4	6 hrs/day	2 hrs/day	1 hrs/day	30 mins/day
5	4.8 hrs/day	1.6 hrs/day	50 mins/day	24 mins/day
6	4 hrs/day	1.3 hrs/day	36 mins/day	N/A
8	3 hrs/day	1 hrs/day	30 mins/day	N/A
10	2.4 hrs/day	50 min/day	24 min/day	N/A

How pastures get overgrazed


- Grazing too early in the spring
- Leaving animals on the pasture too long
- Not allowing enough rest and recovery time for the grass

Grazing Calendar

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Dormant grass, ok to graze	Watch for green	Coming out of Dormancy Building energy reserves	Only graze if grass has reached 6-8" tall. Best to use cells and move horses when grass is down to 3-4" tall OR 7 days whichever comes first.					Going Dormant, building energy reserves			Dormant grass, ok to graze



Monitoring

- Walk the pasture and check the grass height and health
 - Fence off a small section and don't allow the animals to graze it
- 



Questions?

Thank you

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