

Introduction to Grazing Management

UC Davis Sheep Day

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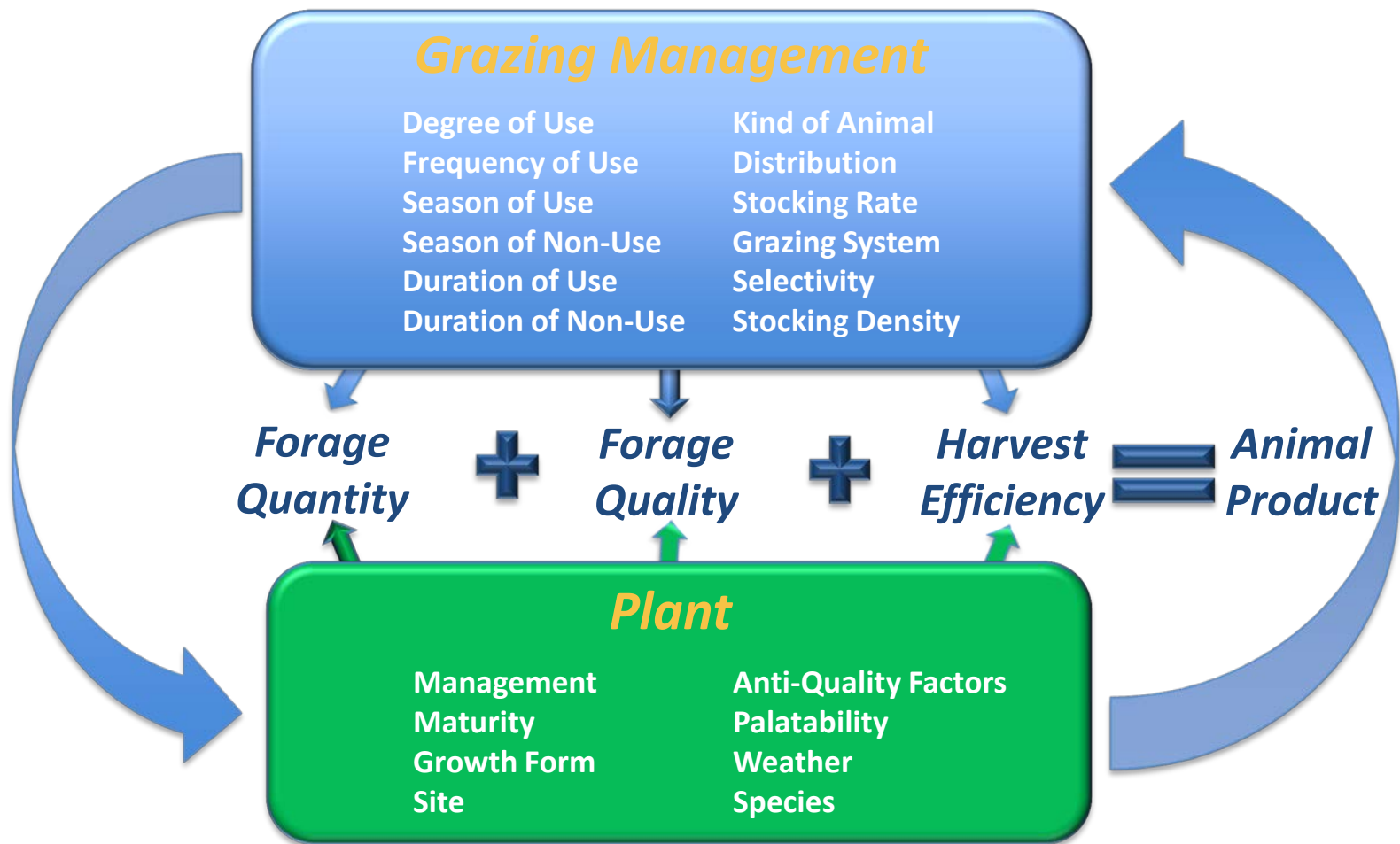
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What is Grazing Management?

- No such thing as “no” grazing management
- *“Managing and manipulating the animal-forage plant-soil complex for specific objectives”*
- Done by blending ecological, economic and animal management principles
- *Animal product (lamb, wool) = forage quantity + forage quality + harvest efficiency*





On-line Grazing Management Course

4 Modular Course

- Ecosystems & Effects of Grazing
- Foraging Behavior & Livestock Distribution
- Forage Quality
- Ranch & Grazing Management Systems
- 10-20 hours/module

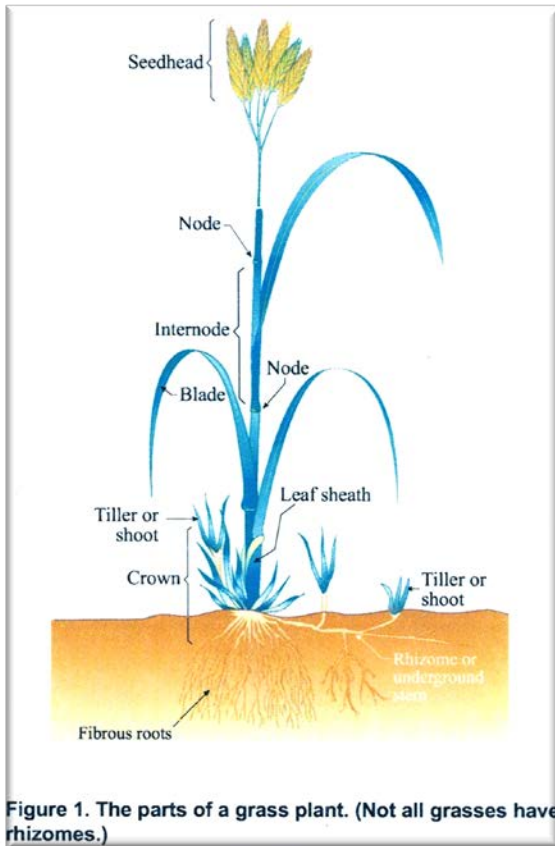


www.plantsciences.ucdavis.edu/gmcourse/index.htm

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Plant Growth: Grasses & Legumes



Structure of the grass plant

- Collection of tillers or shoots
- Series of repeating units
 - Leaf, stem node, stem internode and bud
- Growing point at top of stem
 - Intact – produces new leaves
 - Eventually forms seedhead
- Basal buds can send out tillers
- 2 forms: elongated and unelongated
 - Bunch grasses and sod

Stages of Grass Development

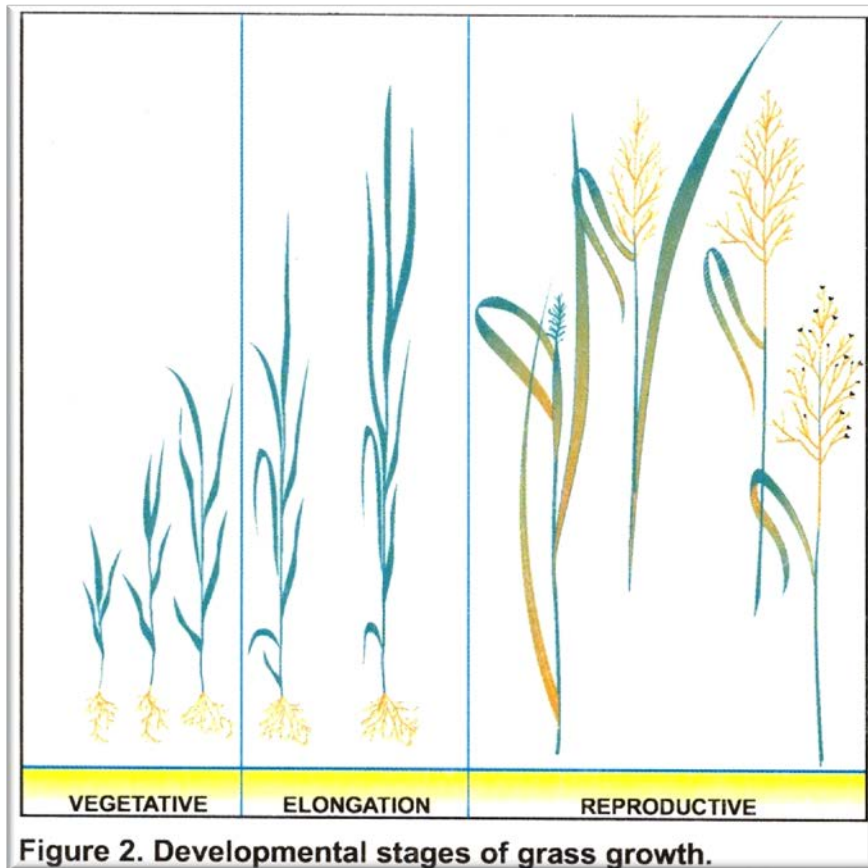
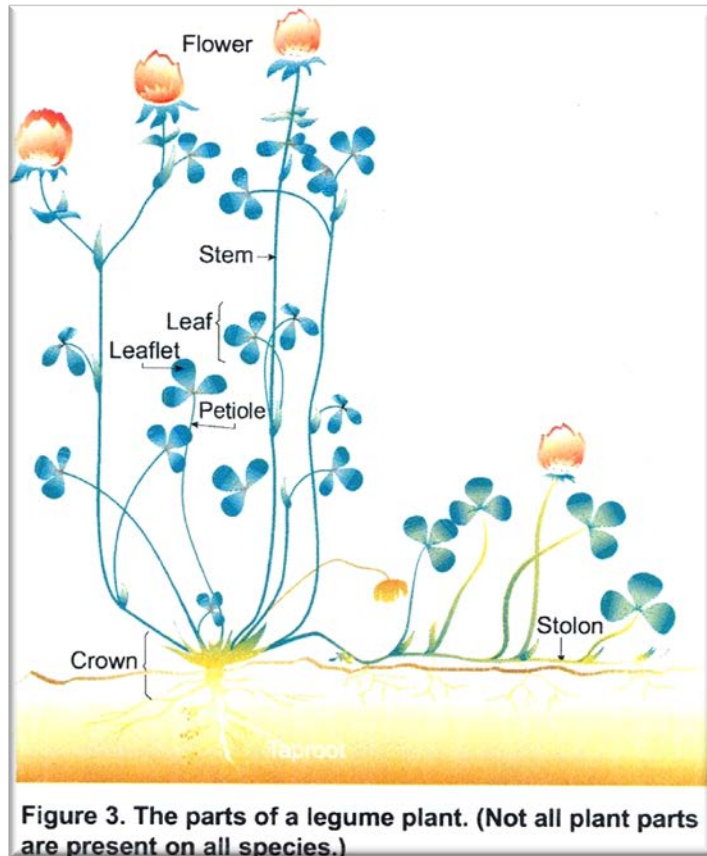


Figure 2. Developmental stages of grass growth.

3 Stages

- Vegetative
 - Tolerant to grazing
 - Most nutritious
 - High water content
- Elongation or Jointing
 - Boot stage
 - High production
- Reproductive
 - Seedhead develops
 - Pollination
 - Seed develops

Plant Growth: Grasses & Legumes



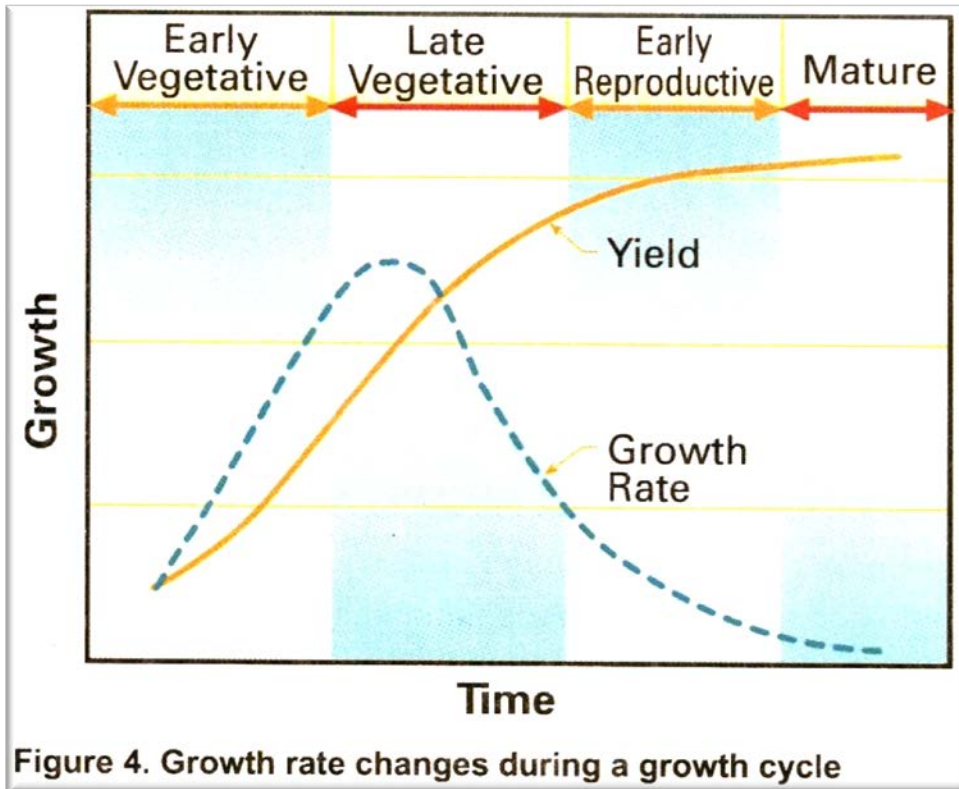
Structure of Legumes

- Fix atmospheric nitrogen
- Stems grow long immediately
- Leaves are opposite - trifoliate
- Length and branching vary
- Can branch at leaf-stem junctions
- Different growth habits

Development of Legumes

- Vegetative to bud stage to bloom
- Many regrowth points
 - Stem tip, along the stem, stem-leaf junction and crown buds

Growth Rate During Growth Cycle



How fast dry weight is added

- Minimal leaf area = slow rate
- Late Vegetative = max yield
- Reproductive = loss of leaf area
- Redistribution to stems and seed

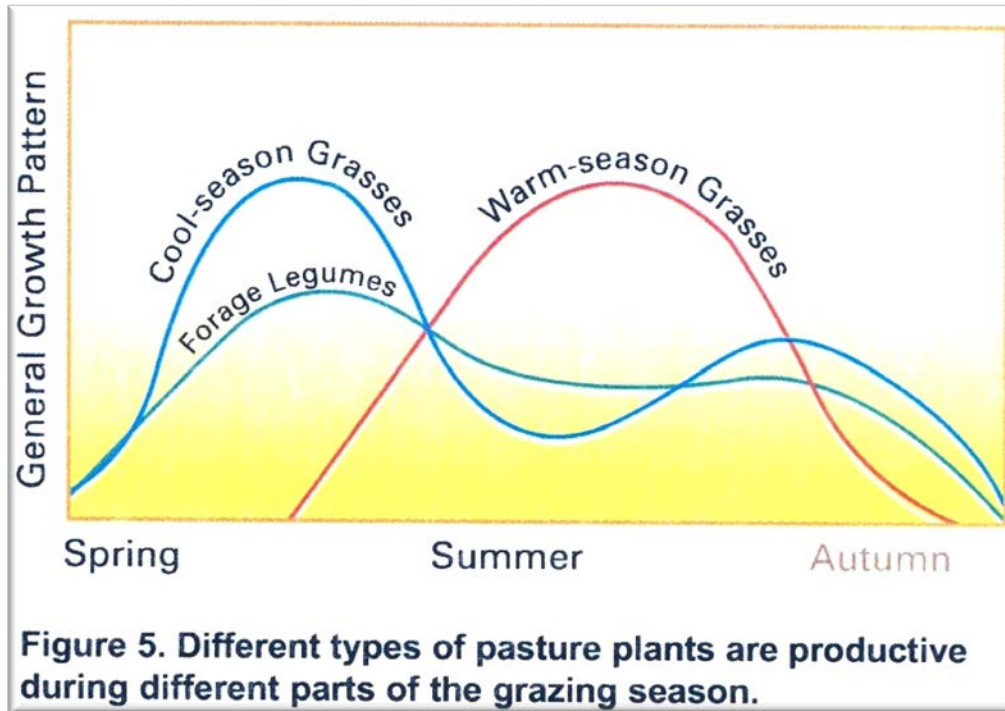
Nutritionally

- Early Vegetative ↑ protein ↑ H₂O
- Late Vegetative ↑ CHO
- Mature ↑ lignification

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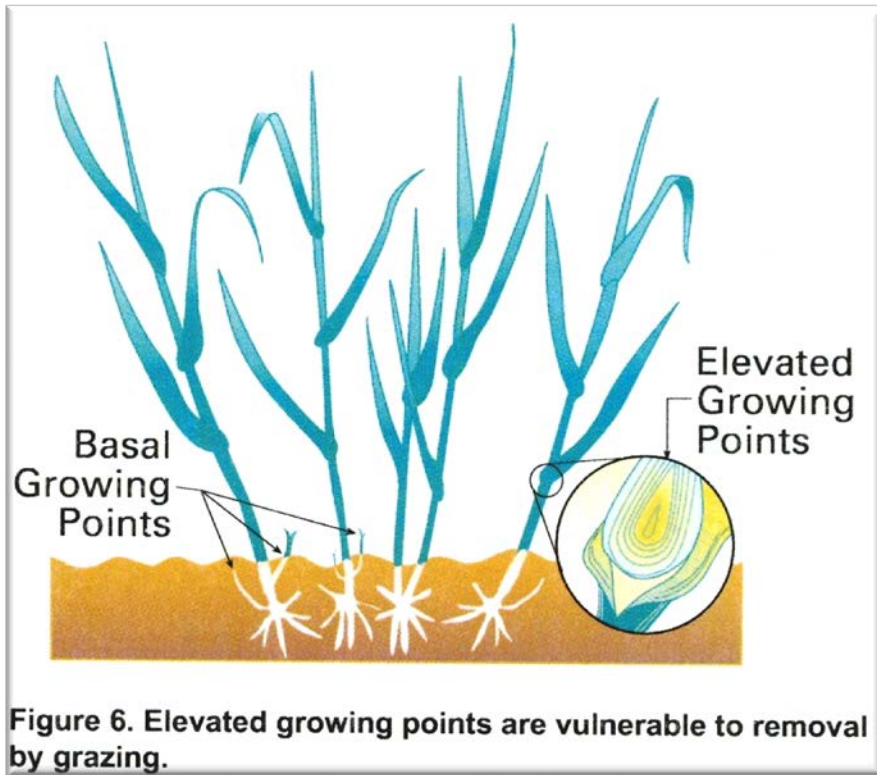
Seasonal Growth Patterns



General Growth Patterns

- Idealized patterns
- C₃ vs. C₄ Grasses
 - Period of greatest rate
 - C₃, e.g. ryegrass
 - C₄, e.g. sudangrass
- Legumes
 - Less influenced
 - Spring most rapid growth
 - Evens out pasture production

Grazing and Growing Points



Growth points and grazing

- C_3 & C_4 similar but shifted
- Spring – leaves from basal points
- Only leaf tips removed
- Temp and day length – elongation
 - Elevated points – apical meristem
 - Removed growth stops
 - Tillering from dormant basal buds
- Legumes – varies by growth form
 - Alfalfa near tip of stem
 - Red clover, birdsfoot trefoil – lower
 - Both regrow from basal buds
 - White clover - stolons

Grazing & Leaf Area Management

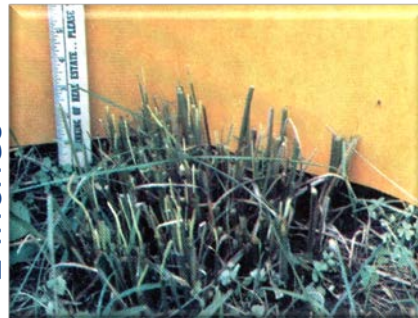


Clipped height

9 inches



2 inches



Regrowth 6 days

9 inches



2 inches

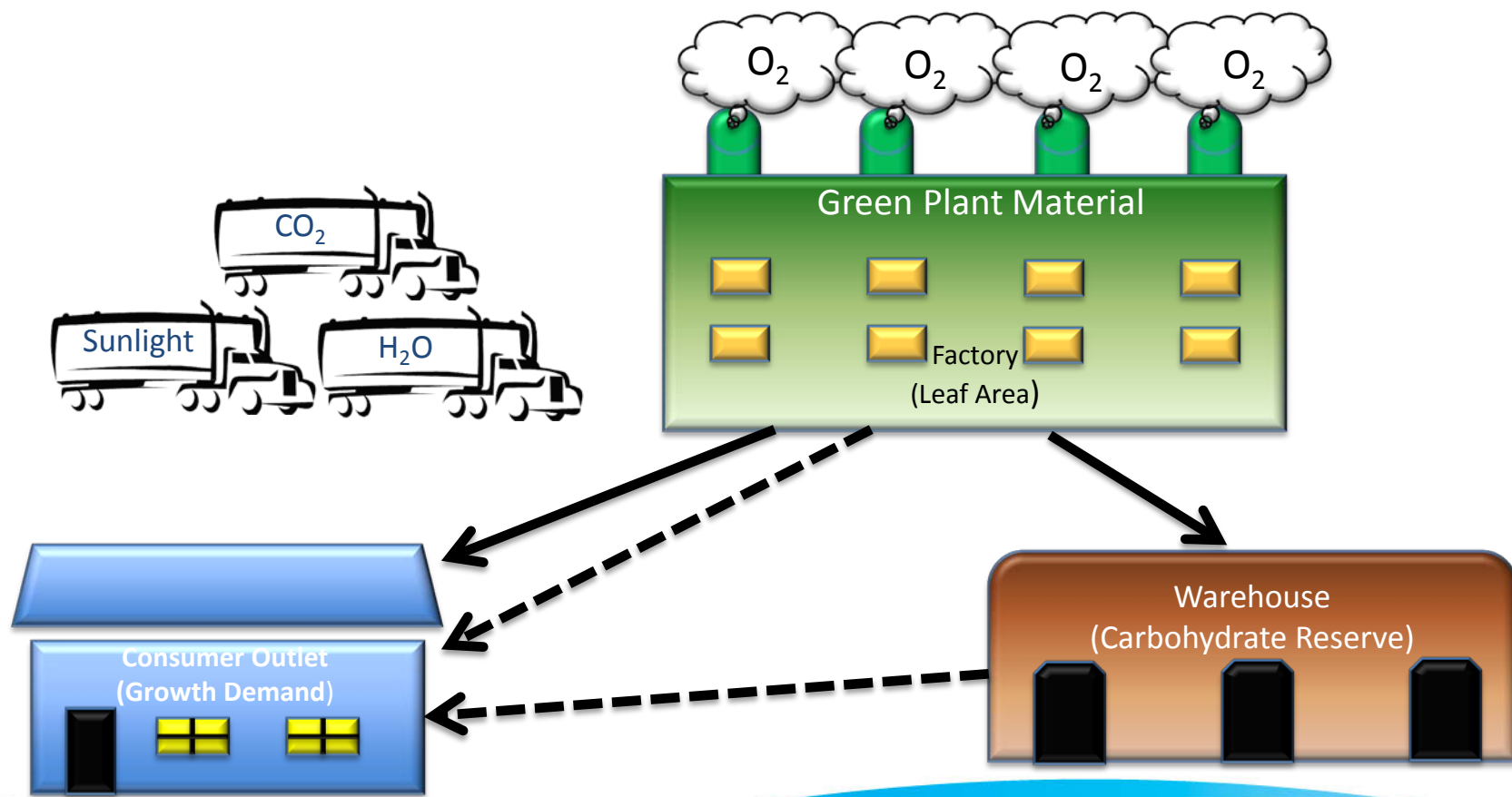


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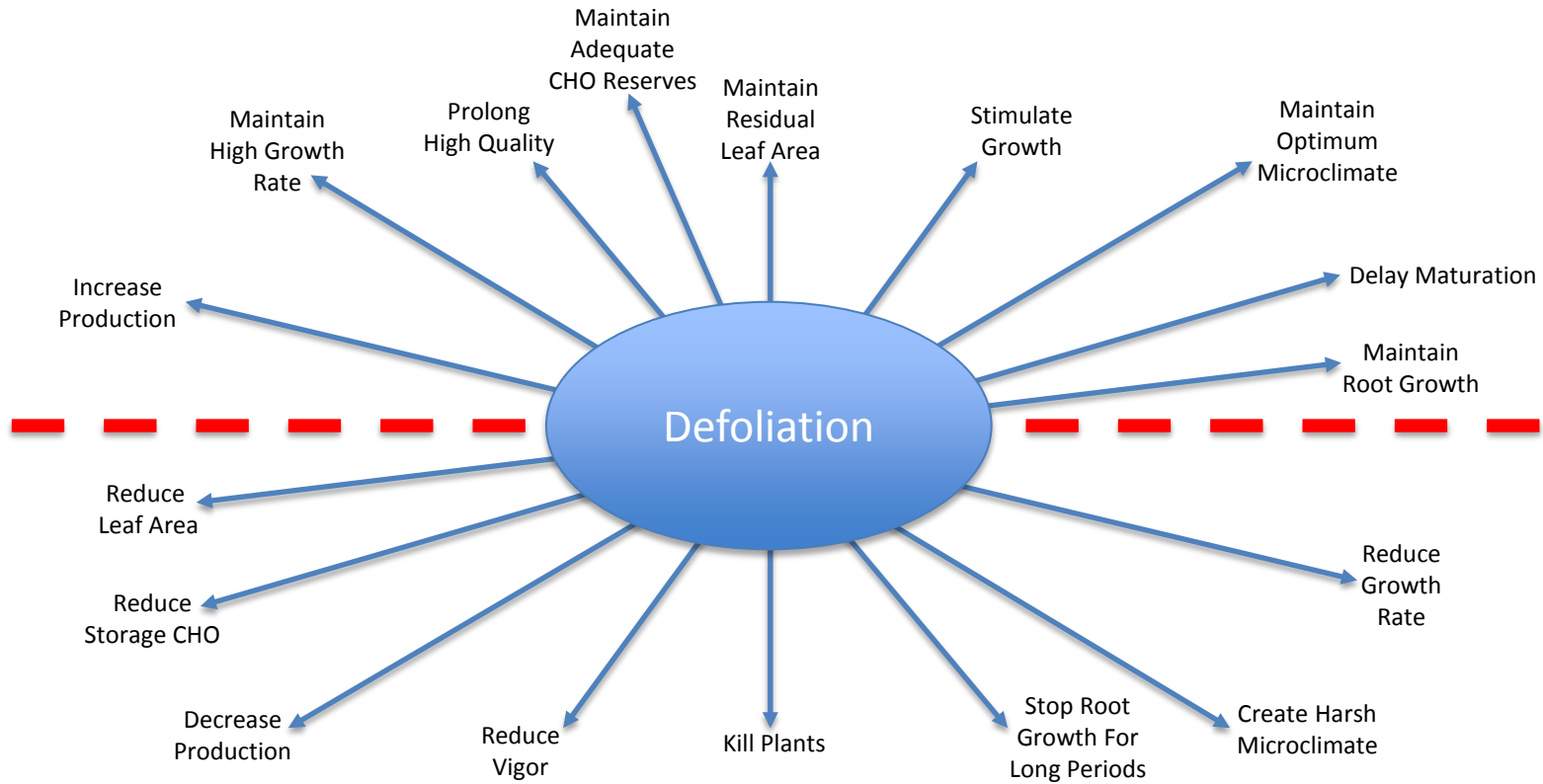
Grazing & Leaf Area Management



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Good Grazing Management



Poor Grazing Management

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