

Rangeland Management: Nutrition

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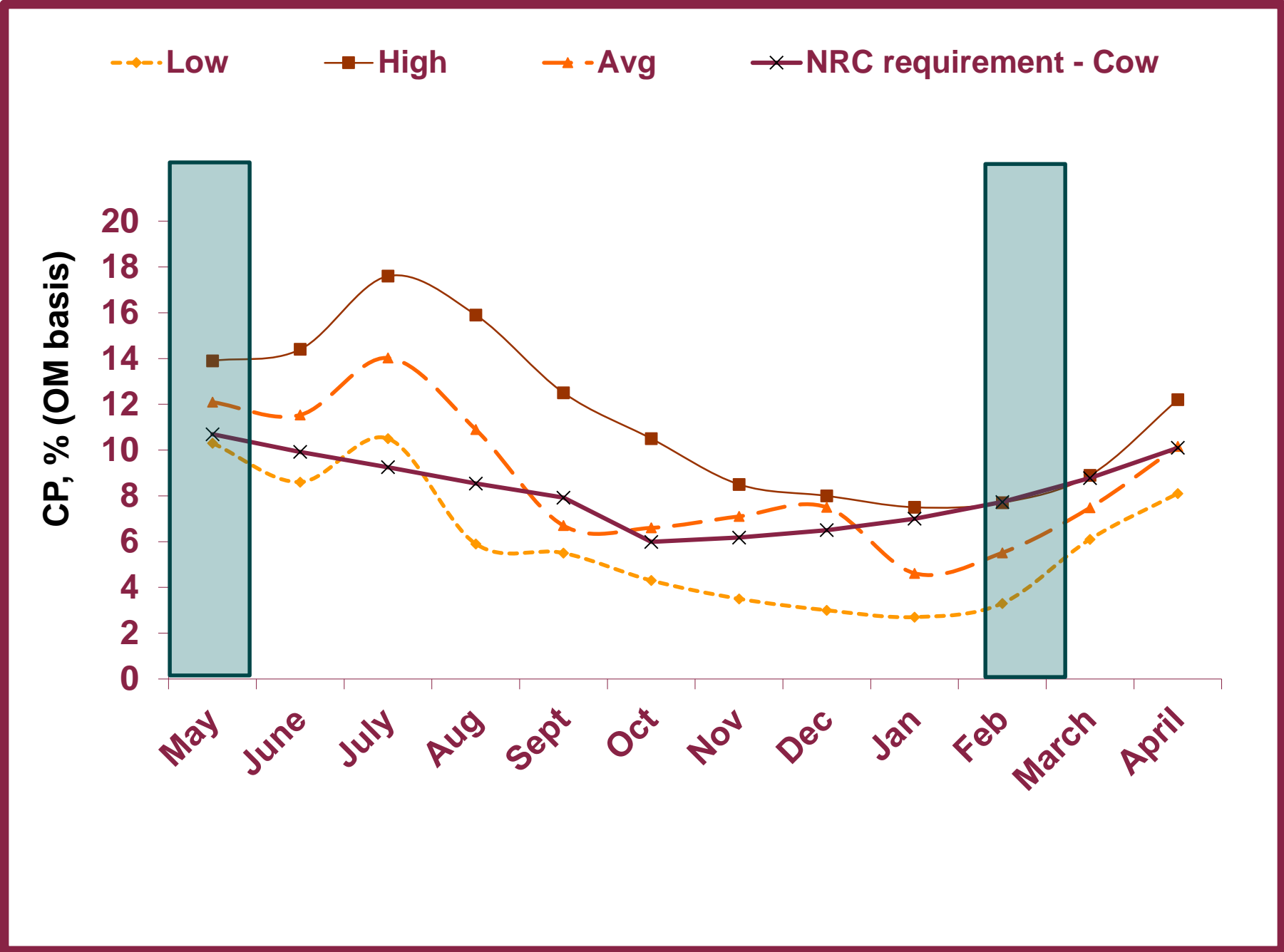
Range Improvement Task Force

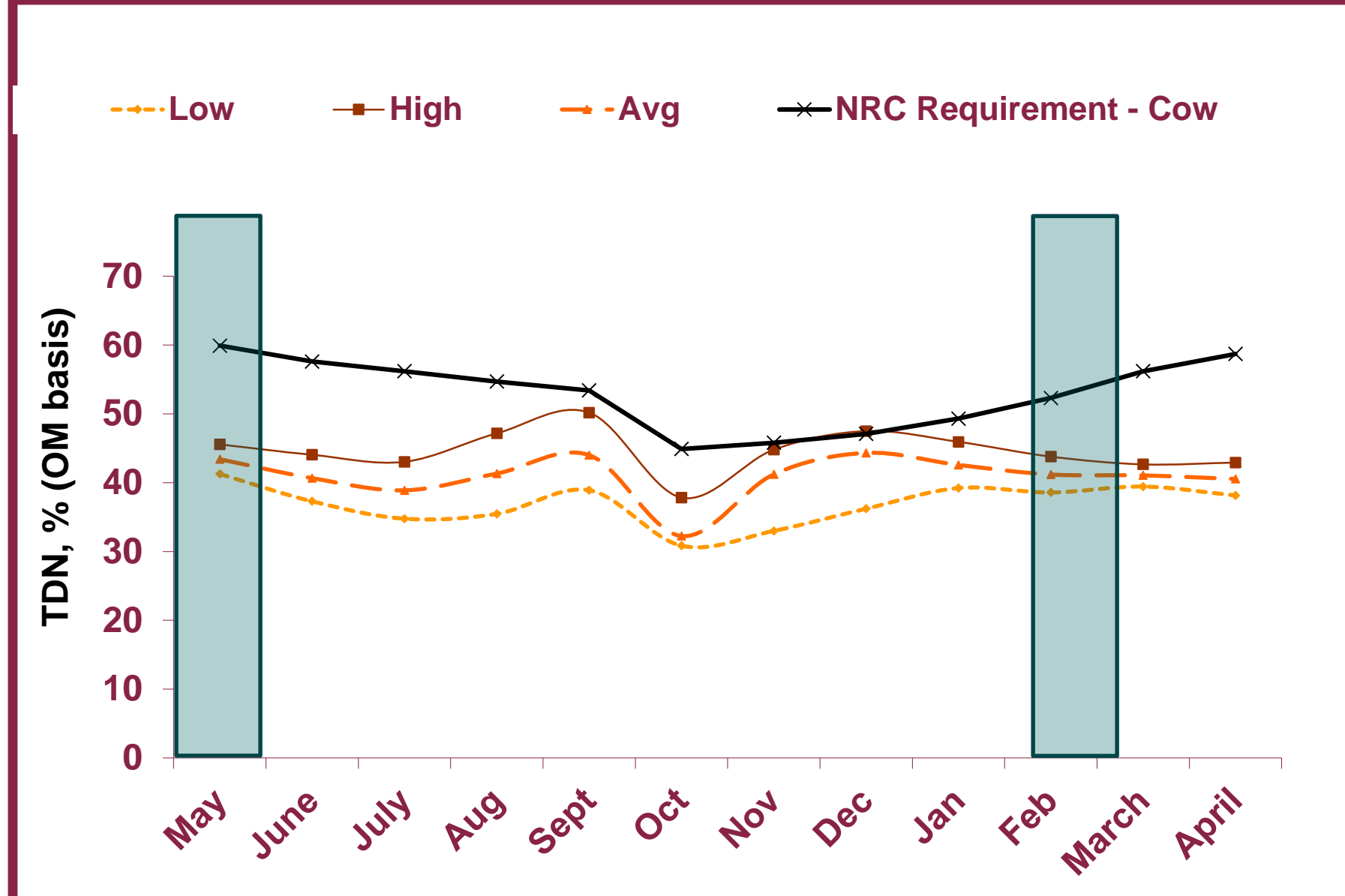
Cooperative Extension Service / Agricultural Experiment Station
College of Agricultural, Consumer and Environmental Sciences

**Extension Animal Sciences
and Natural Resources**

New Mexico State University



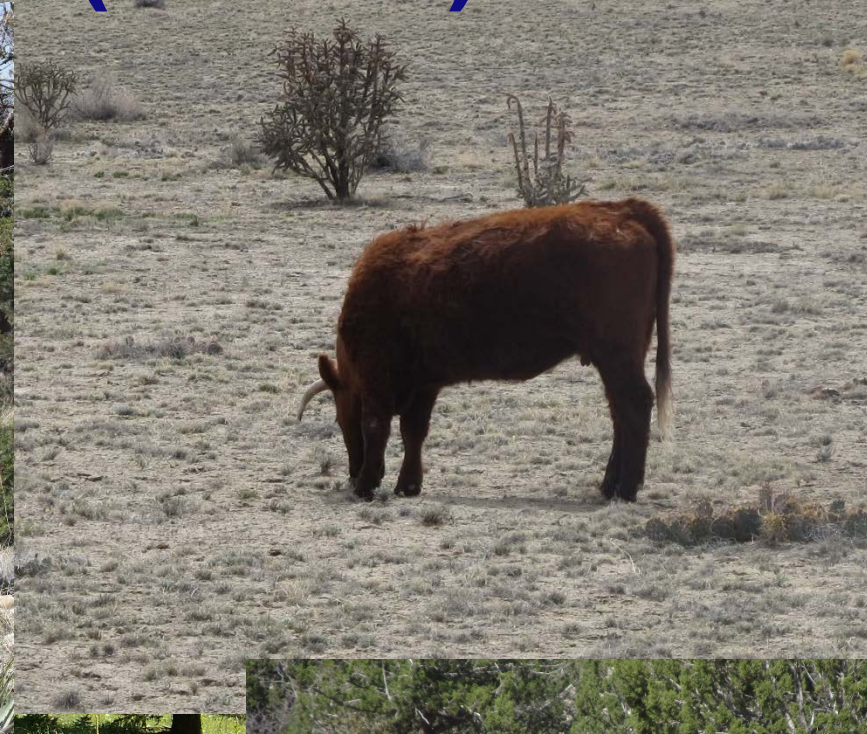




How is this affected by rangeland management?

Factors Affecting Nutritive Value (animal)

- Chemical
- Digestibility
- Passage rate
- Intake-forage & water



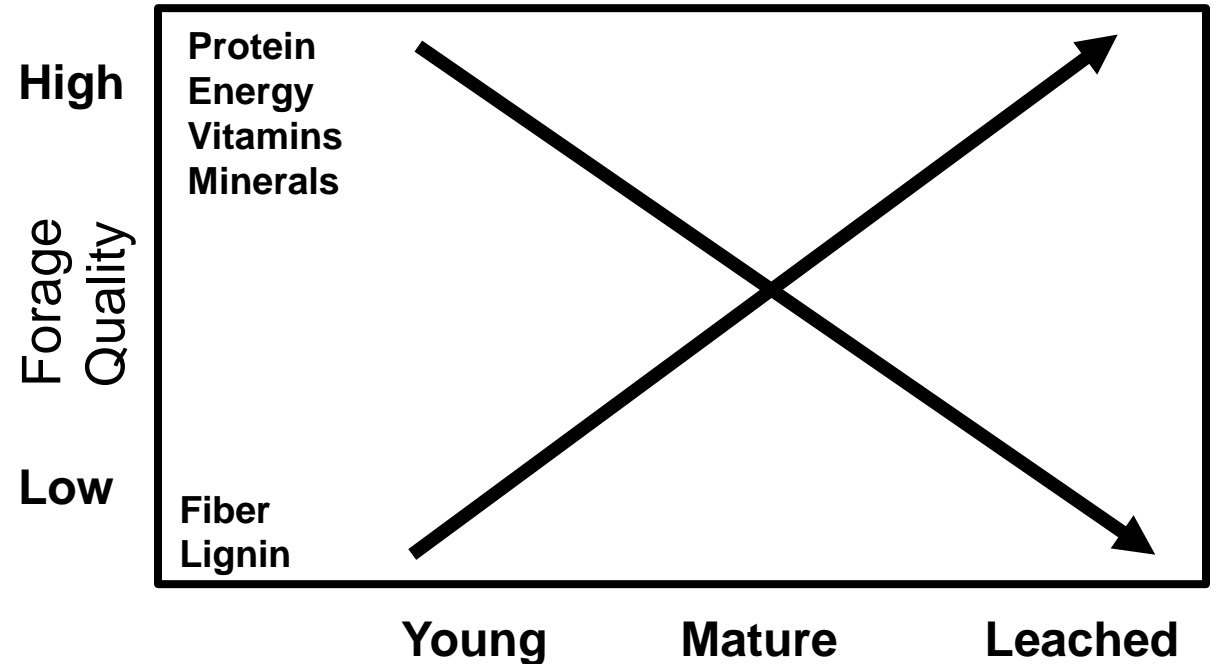
Factors Affecting Nutritive Value (plant)

- Numerous and interrelated
 - Stage of maturity
 - Soil
 - Climate
 - Plant species
 - Livestock
 - Range condition /management

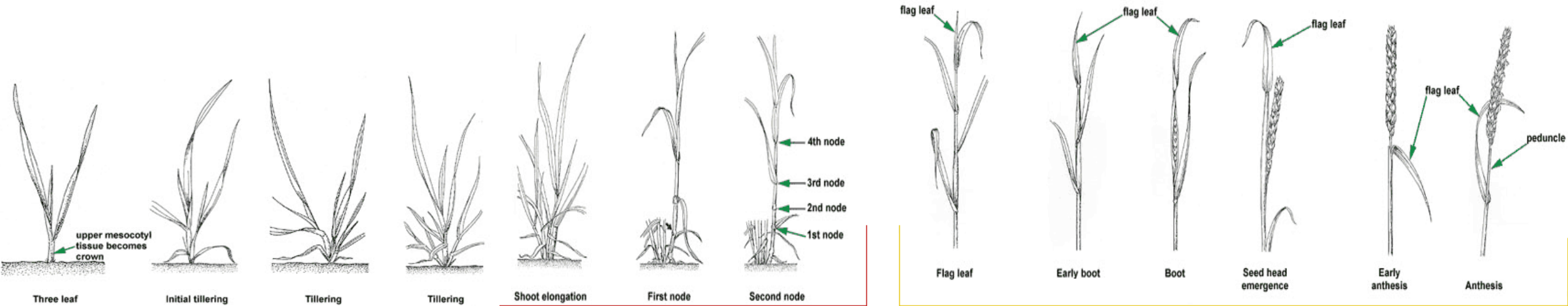


Factors Affecting Nutritive Value

- **Stage of maturity**
 - Grasses decrease with maturity
 - Forbs early portion of growing season
 - Browse little change



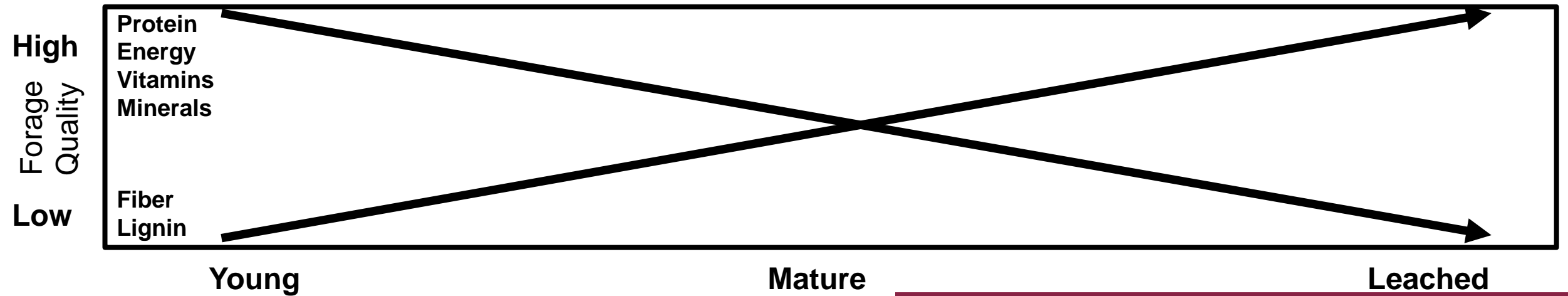
Factors Affecting Nutritive Value



Vegetative phase

Transition phase

Reproductive phase



Factors Affecting Nutritive Value

- **Soil**

- **Water holding capacity**

- **Texture**
 - **Porosity**
 - **Poor aerated soils decrease essential elements**
 - **Phosphorus 6-7 pH**
 - **Mild burning releases minerals**



Factors Affecting Nutritive Value

- **Climate**

- Temperature, precipitation, light, and humidity.

- Soil temperatures 60⁰ to 80⁰F increase nitrogen

- Precipitation

- Soil moisture- increases nitrogen, phosphorus, and ether extract.
- Leaching of nutrients
- Too much, too little



Factors Affecting Nutritive Value

- **Plant species-** More important than soil or management
 - **Composition**
 - **Palatability**
 - **Part and age**
 - **Season of growth-**
 - **Cool season grasses higher in crude protein and digestibility**
 - **Secondary compounds**



Factors Affecting Nutritive Value

- **Livestock class**
 - **Diets**
 - What they eat
 - Digestion system
 - Selectivity
 - **Requirements**
 - Protein
 - Energy
 - Phosphorus



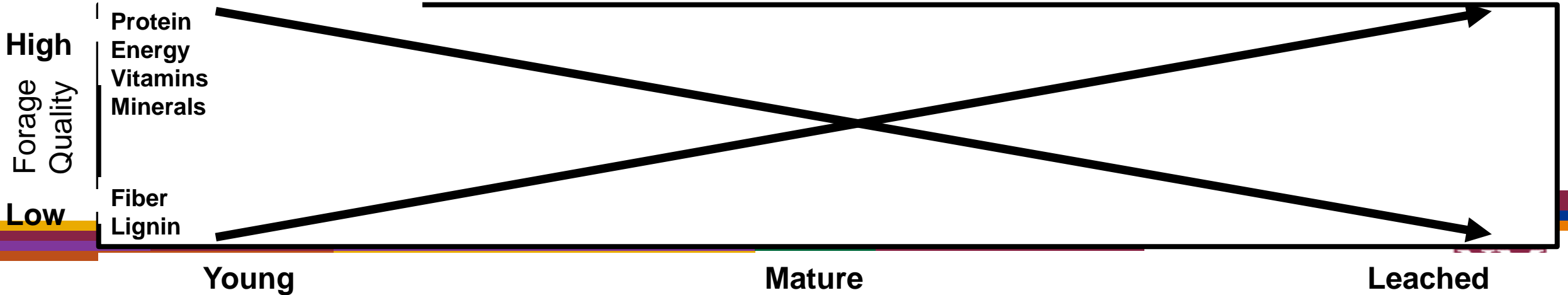
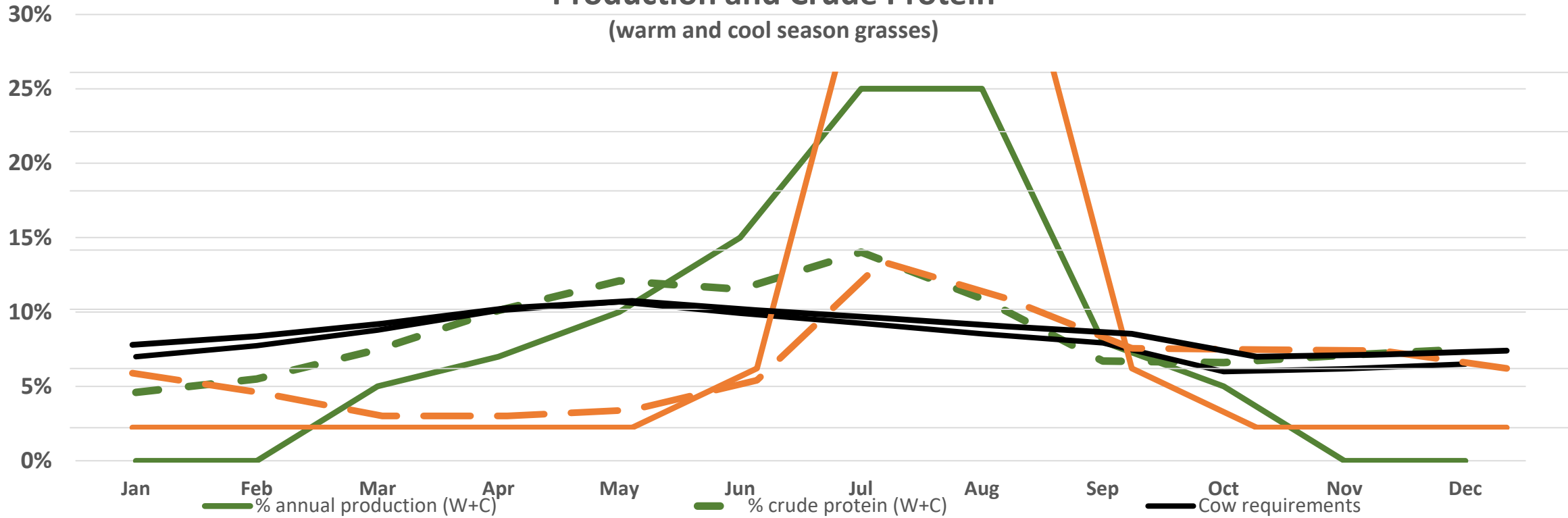
Factors Affecting Nutritive Value

- **Range condition /management**
 - **Intensity**
 - Heavy grazing
 - Light to moderate grazing
 - **Frequency**
 - Frequent grazing decreases production
- **Intake**
 - **Forage Production**
 - **Composition- Diversity**
 - **Residual forage**



Production and Crude Protein

(warm and cool season grasses)



Principles in Range/Grazing Management

1. **Timing-** time of year grazed
2. **Duration-** how long grazed, forage rest and recovery
3. **Distribution-** equal grazing entire pasture
4. ***Intensity-** head/acre/time (stocking rate)





ment



GREEN
Supplement energy
with <20% CP

Questions

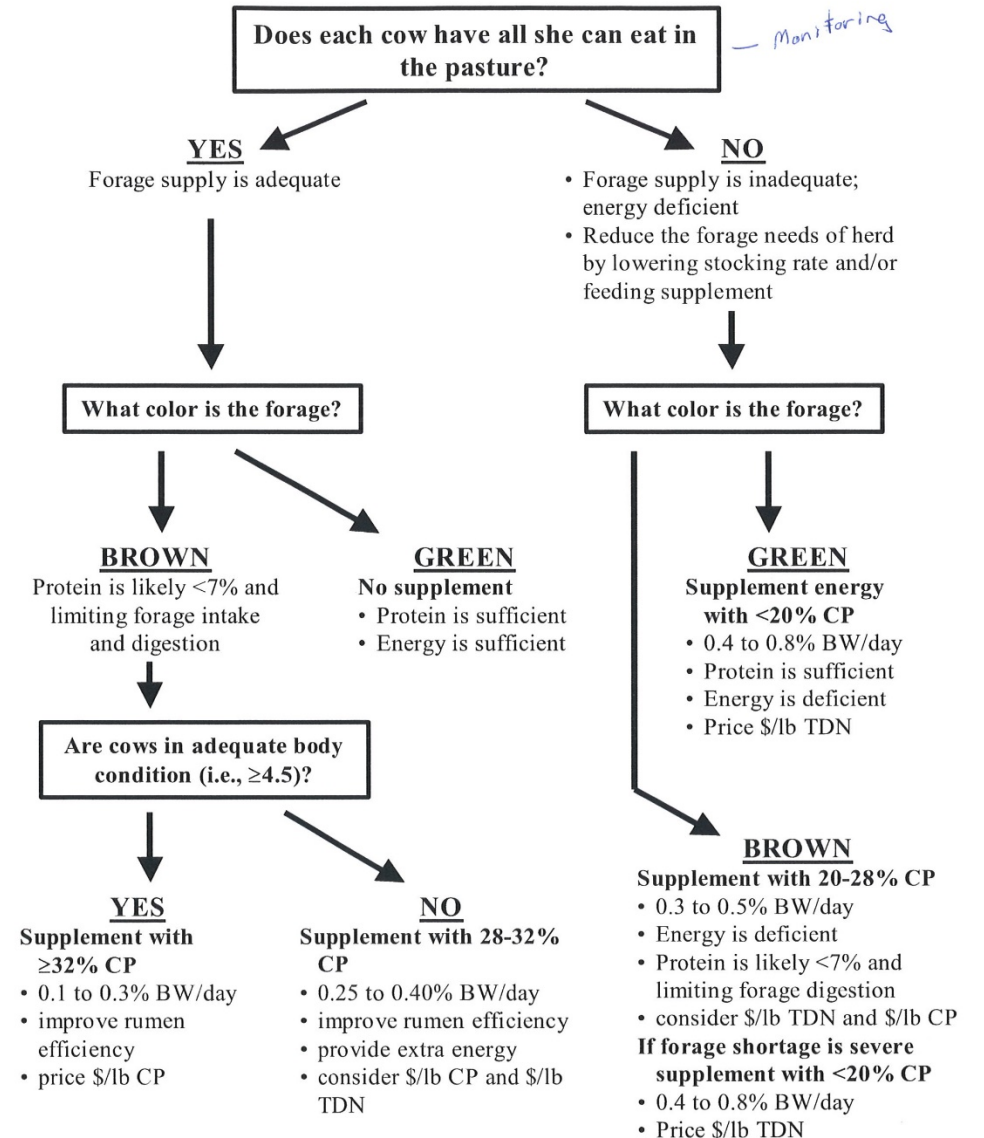
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Beef Cow Supplement Decision Guide*

Clay P. Mathis, New Mexico State University



*This decision tree is a general guide and is not as accurate as measuring actual forage quality and quantity to develop a strategic supplementation program for a specific class of cattle