Practical Tips For Growing, Harvesting And Feeding Cereal Silage

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Introduction

- Forage Crop Plan
- Significance of Plant Maturity At Harvest
- Feeding Small Grain Forages
- Growing Small Grain Forages in California

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Developing a Crop Plan

Assessment of the forage needs of the Dairy
Allocation of land, water and other resources

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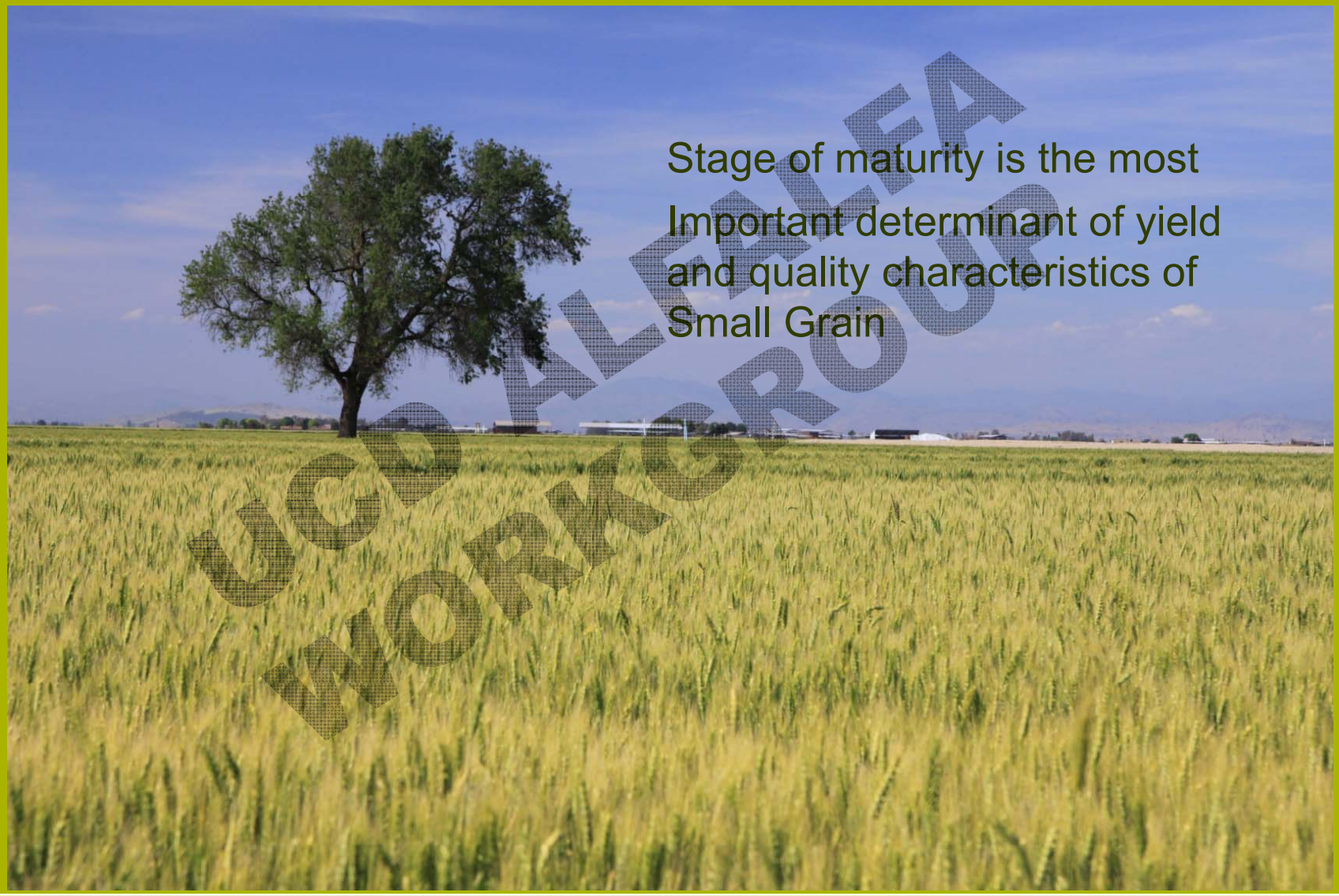
Forage for Dairies



Stage of maturity is the most Important determinant of yield and quality characteristics of Small Grain

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Two Types of Small Grain Cereal Forage

- Boot Stage – the vegetative leafy plant
  - Harvested prior to heading
  - High in both protein and digestible fiber
- Soft Dough Stage
  - Harvested after grain development
  - High in energy from the starch in mature kernels
  - Yield is the highest at this stage

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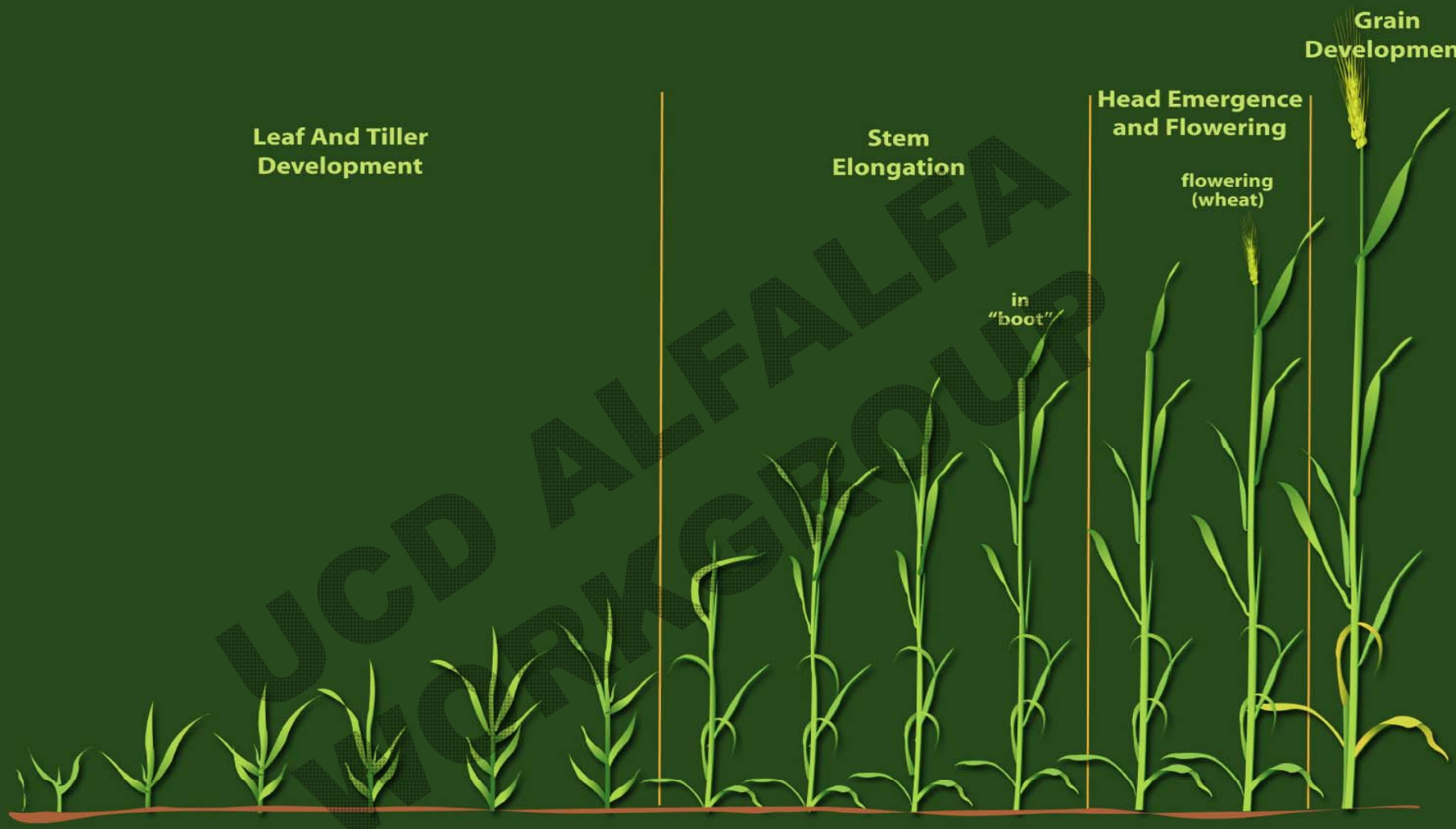

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Grain Development Stages

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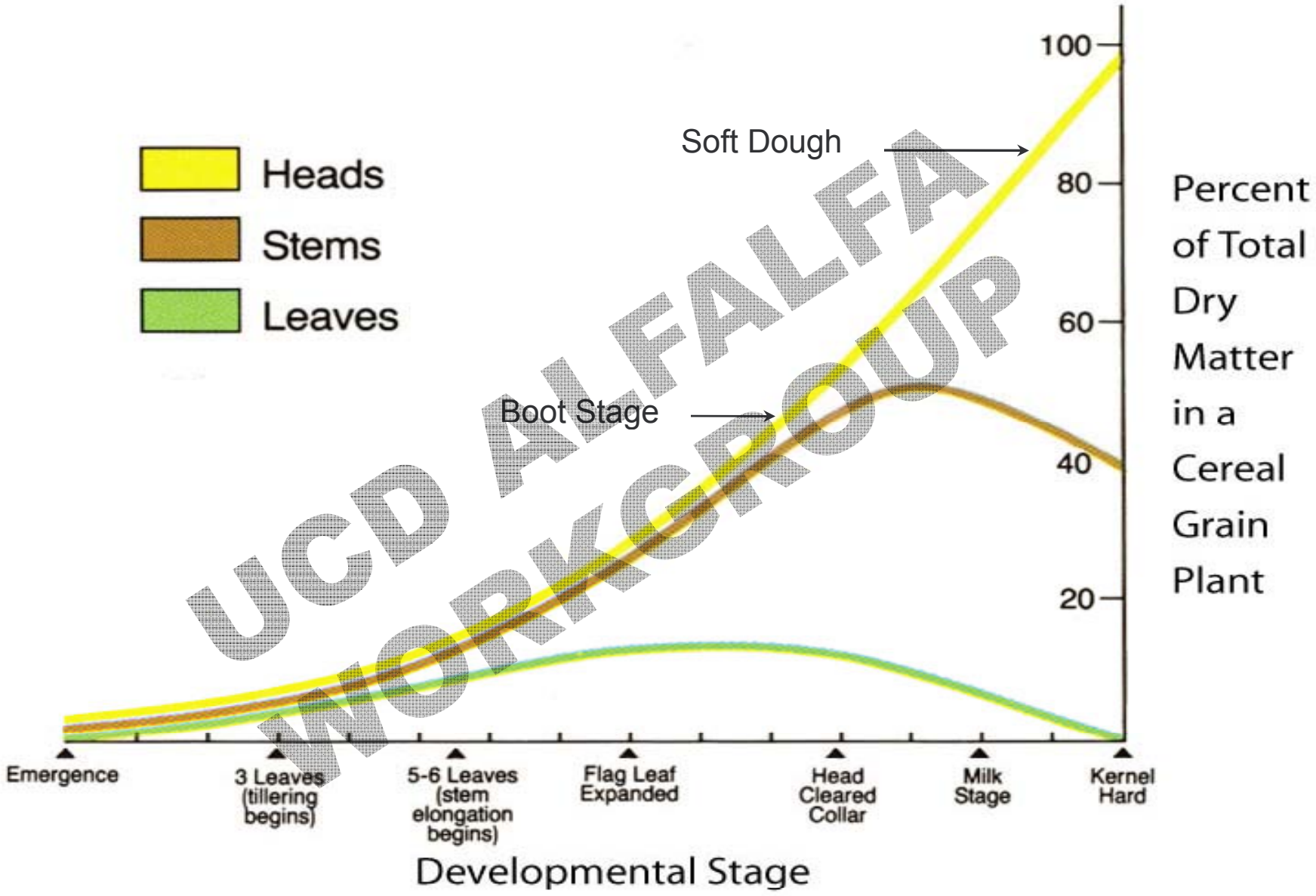

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Nutritional highlights by stage of Maturity

- Boot Stage — High protein, high digestible fiber
- Flower Stage — Higher yield than boot stage, lower protein and digestibility
- Milk Stage — Immature kernel; least palatable stage; risk nutrient loss during ensiling
- Soft Dough Stage — Grain fully formed and mature Ideal plant types have high grain to stem ratio

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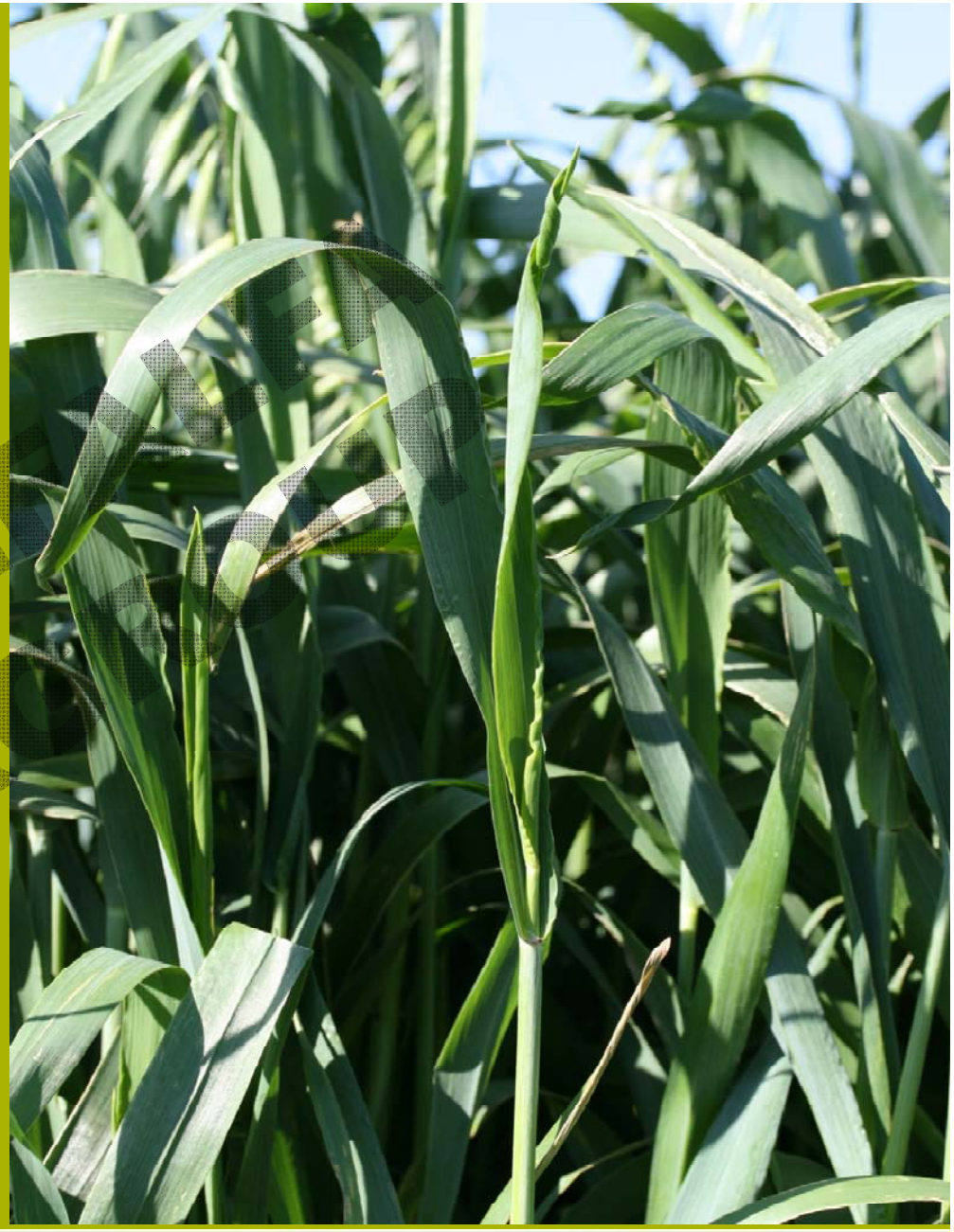
Boot Stage

High protein, high digestible fiber



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Flower Stage

Higher yield than boot stage, lower protein and digestibility

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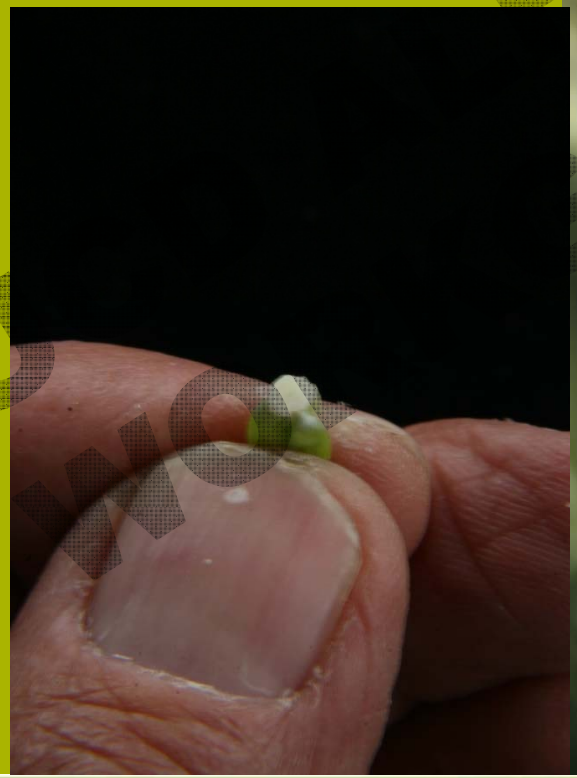
Milk Stage

Immature kernel; least palatable stage; risk nutrient loss during ensiling



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Soft Dough Stage

Grain fully formed and mature Ideal plant types have high grain to stem ratio

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Soft Dough Stage

Triticale

High grain content

High yield

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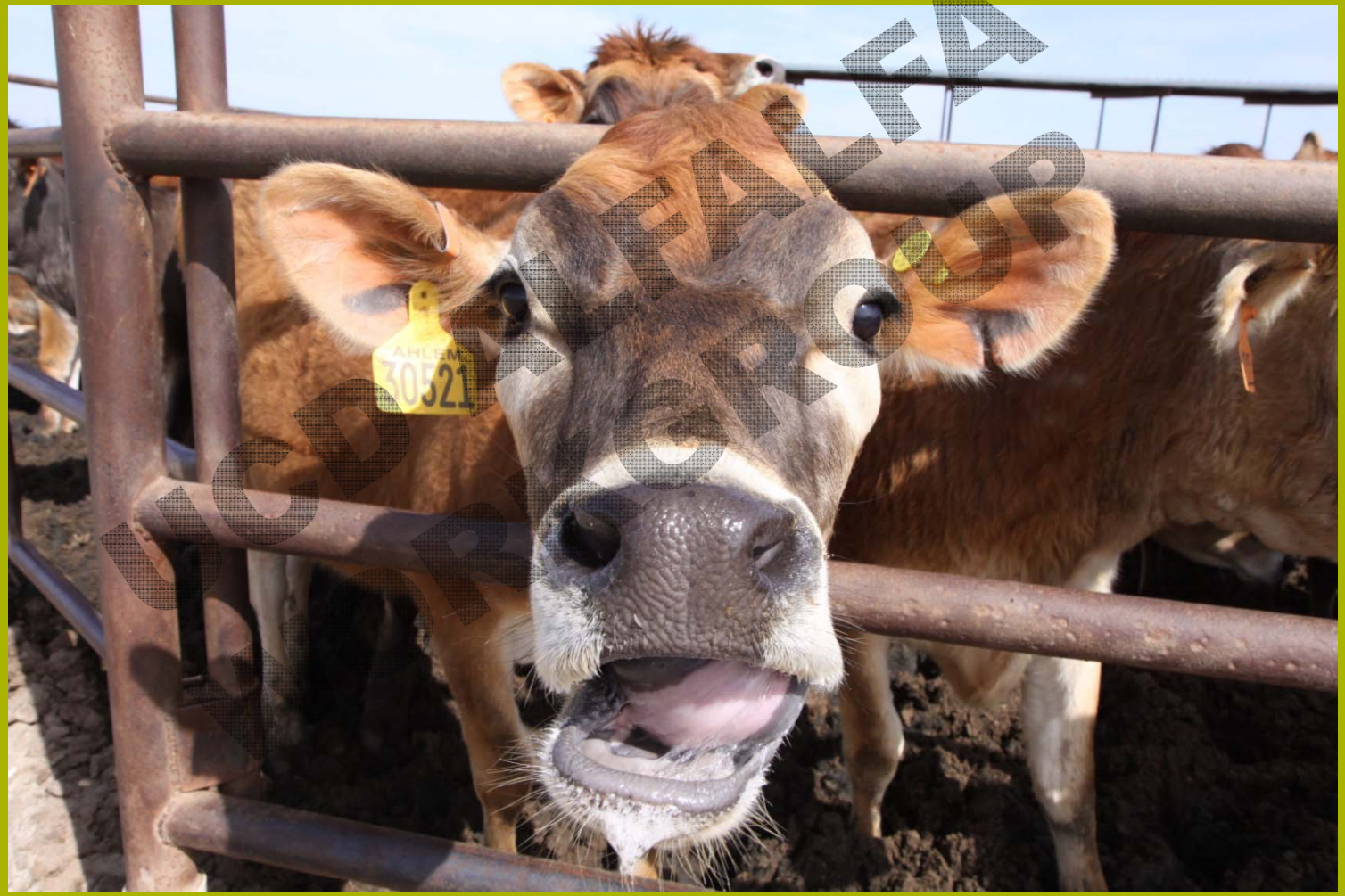
Feeding Hungry Cows



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Forage Quality for Soft Dough Cereal Forage and Corn Silage

Analysis	Triticale at soft Dough	Wheat at Soft Dough	California Corn Silage
Crude Protein	10.0	11.0	8.4
ADF	29	29	29
Lignin	4.7	4.7	3.8
NDFD	53	53	48
TDN	68	67	68

NDFD 30 hours

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Problems Can Occur In Producing a Forage Crop

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Problem Areas

- Early Planting
  - Aphids
  - Lodging
  - Frost at heading
  - Diseases
- Proper seeding rate
- Adequate nitrogen for protein synthesis
  - Tissue sample to determine if additional fertility is needed

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Problem Areas For Forage

- High nitrate silage
  - Areas close to the dairy
  - Cool cloudy spring during harvest
  - Plants harvested in very early vegetative stage
- High Potassium
  - Heavy manure and lagoon water applications
  - Spread dairy nutrients over a wider area
- Proper moisture during harvest
  - For boot stage silage 65% moisture in the stack
  - For soft dough 65 to 68% moisture

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Forage Crop Plan

- Assessment of forage needs
- Significance of Plant Maturity At Harvest
- Feeding Small Grain Forages
- Growing Small Grain Forages in California

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