

Backgrounding Calves on Co-products



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Backgrounding Goals

- Wean calves
- Continue vaccination program
- Optimize health and condition of calves
- Train calves to consume feed from bunk
- Increase bodyweight at a low cost
- Achieve a specific target weight of cattle for sale or shipment

Feedstuff Selection

- 1st exposure to feed
- Compliment Forage Base: Suitability
- Palatable / Consumed
- Nutrient Composition and Availability
- Consistency of Nutrient Composition
- Availability and Consistency of Availability
- Perishability
- Free of Health Hazards
- No Perfect Co-product

Commercial vs Commodity

- There is no “best” supplement
- Comparing supplements
 - Determine level of intake
 - Determine concentration of nutrients
 - Determine \$/lb of nutrient supplemented
 - Determine \$ of excess nutrient supplemented
 - Factor in all cost/benefits associated with feeding
 - Intangibles
 - Suitability
 - Convenience



Feeding Management

- Special handling, processing, and storage requirements
- Storage space
- Hand Feeding
 - Time and Labor
 - Facilities : Bunks, delivery
- Self Feeding
 - Equipment
 - Monitoring of Intake and \$\$\$
 - Digestive disorders



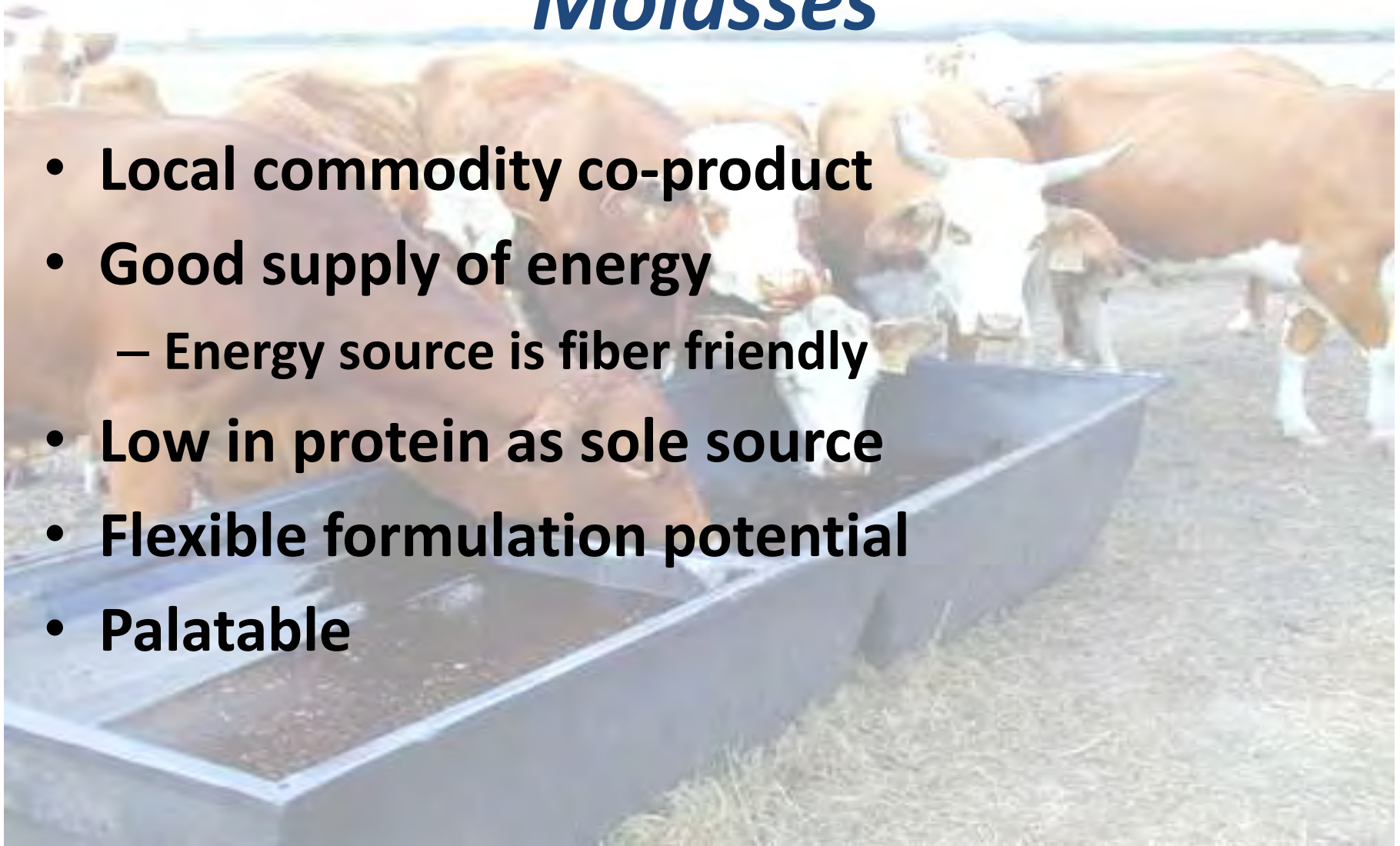
Recent UF Backgrounding Research

- Molasses, Molasses Slurries
- Soybean Products
- Citrus Pulp
- Whole Cottonseed
- Dried Distillers Grains

- Corn Gluten Feed
- Brewer's Grains
- Peanut Products

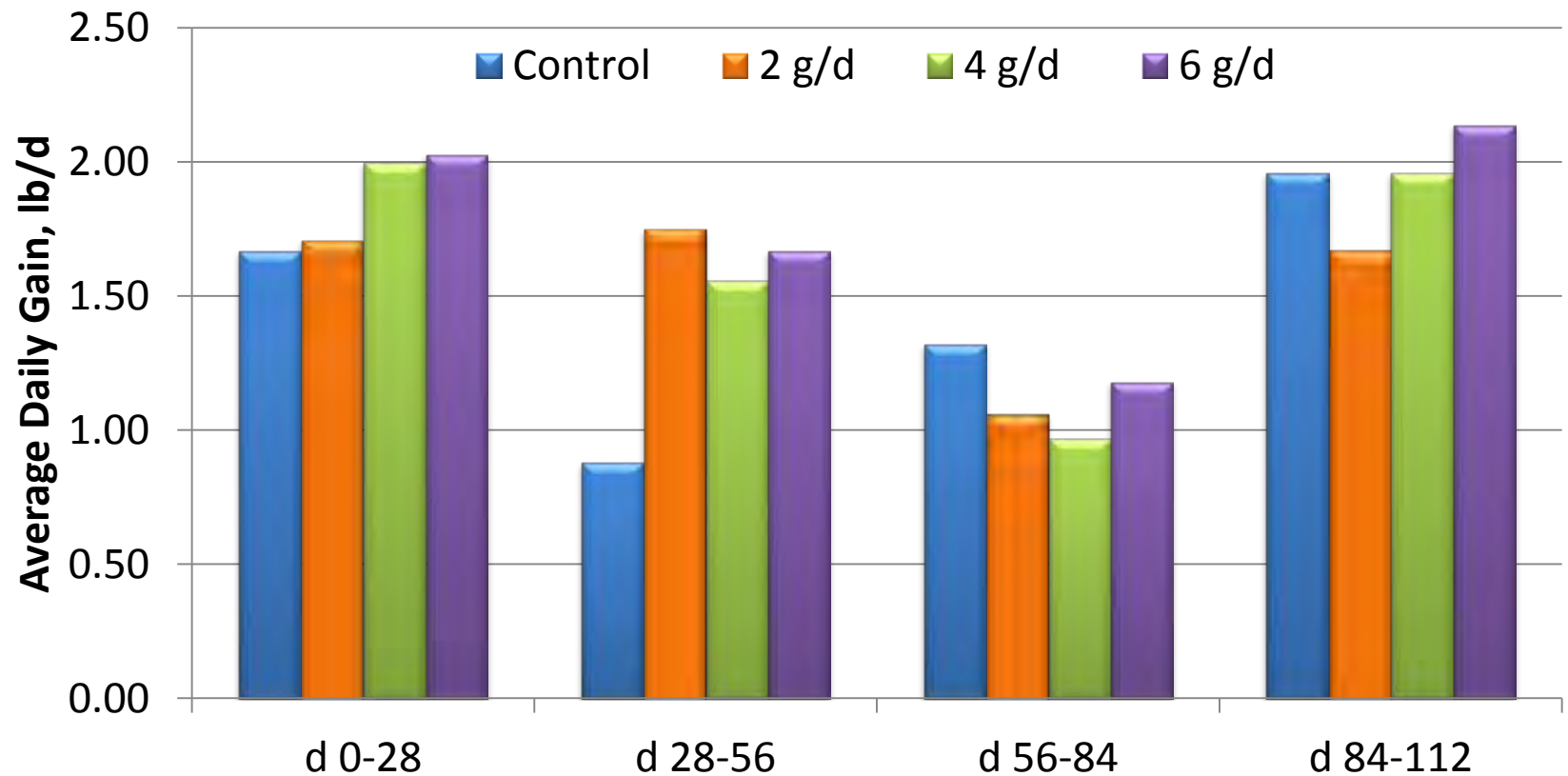
Molasses

- **Local commodity co-product**
- **Good supply of energy**
 - Energy source is fiber friendly
- **Low in protein as sole source**
- **Flexible formulation potential**
- **Palatable**



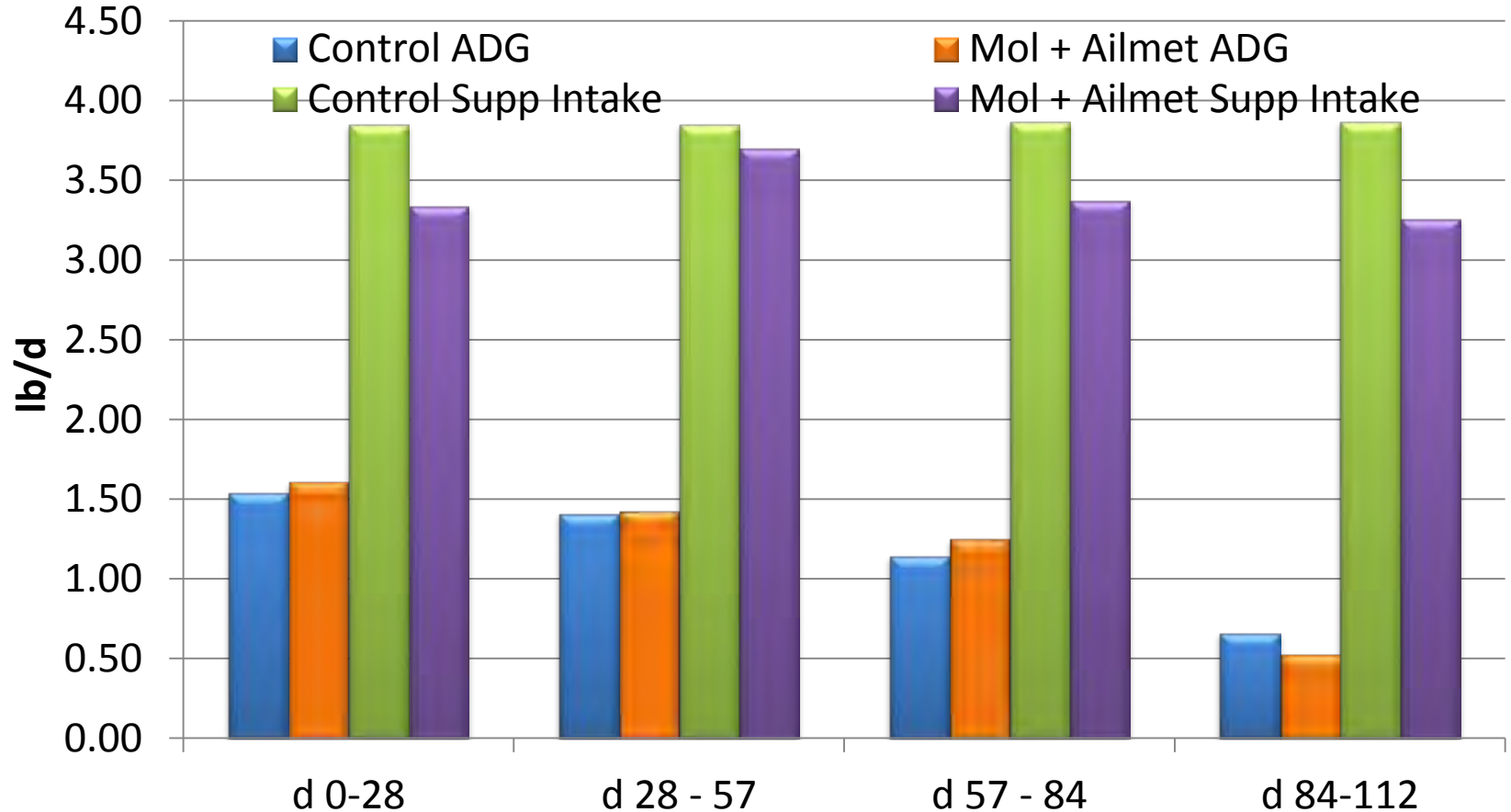
Molasses and Molasses Slurries

Effect of By-pass Methionine Inclusion



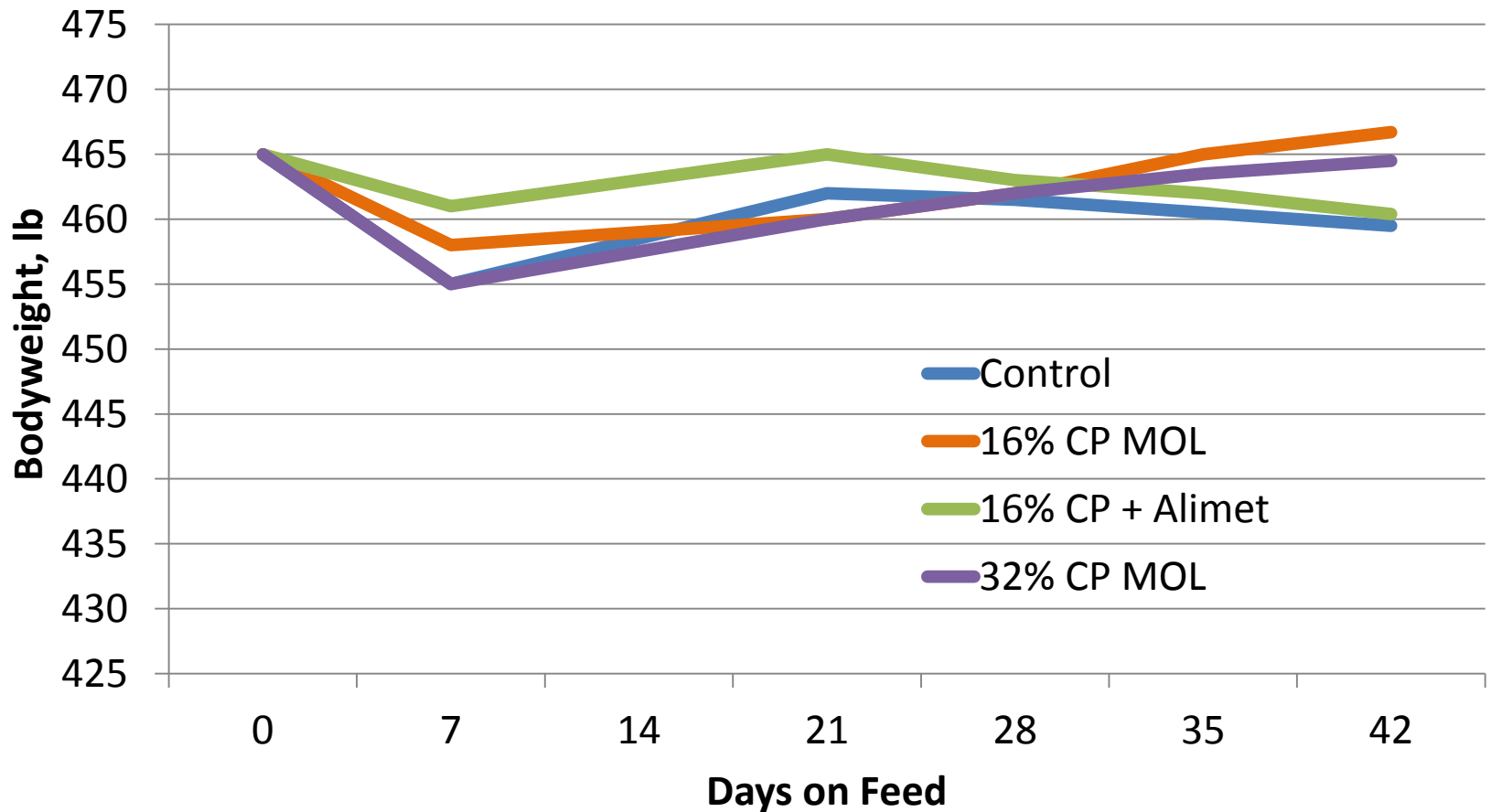
Molasses and Molasses Slurries

Effect of Alimet Inclusion on ADG and Supplement Intake



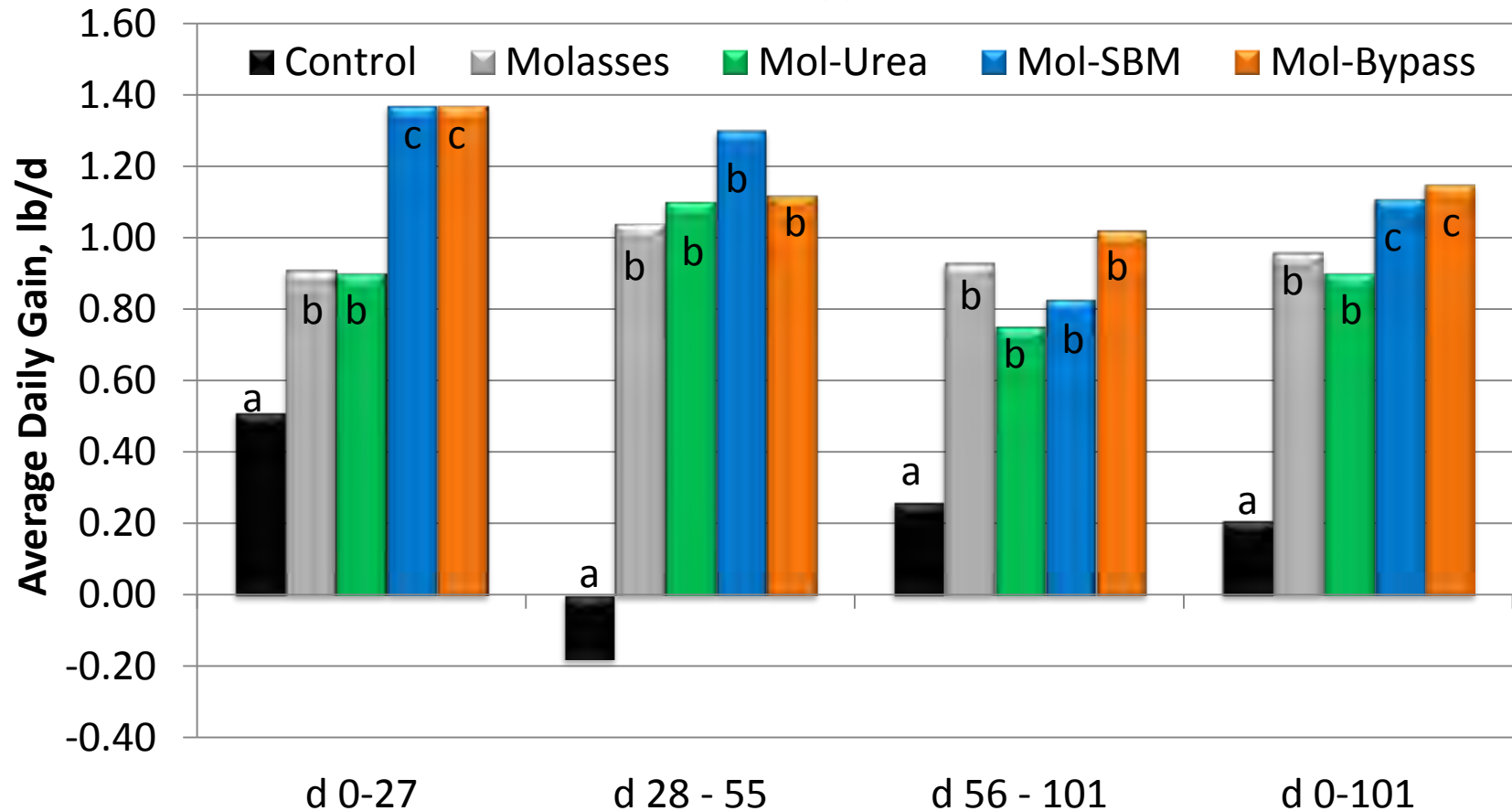
Molasses and Molasses Slurries

Effect of CP % or Alimet Inclusion



Molasses and Molasses Slurries

Effect of Protein Type Inclusion



a,b,c Means with different superscript differ P<0.05.

Stateler et al., 2001

Matt Hersom, 2008

Citrus Pulp

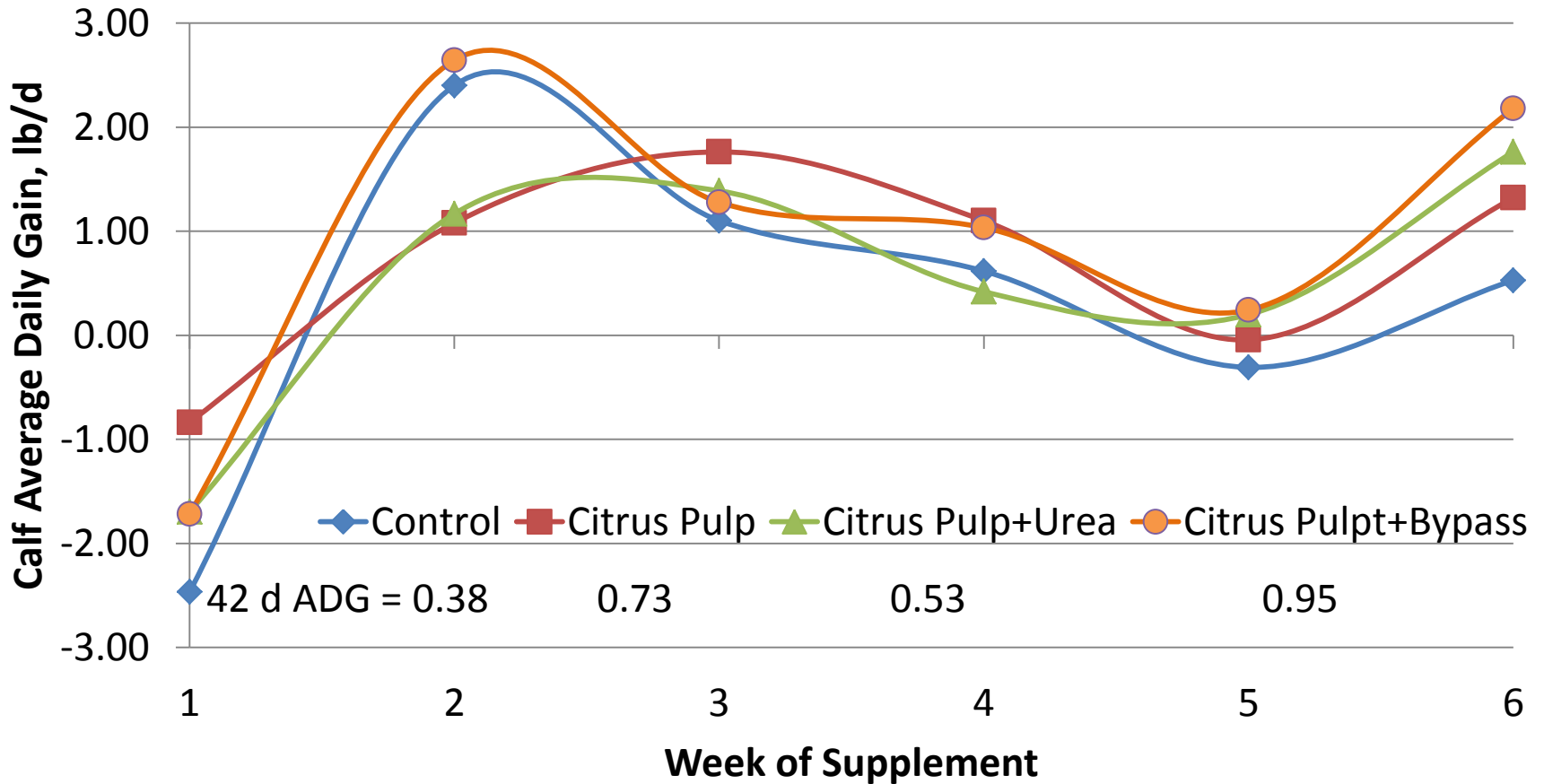
- **High energy supplement**
- **Digestible fiber**
- **Requires protein supplementation**
- **CP for growing cattle requires both DIP and UIP**



Matt Hersom, 2008

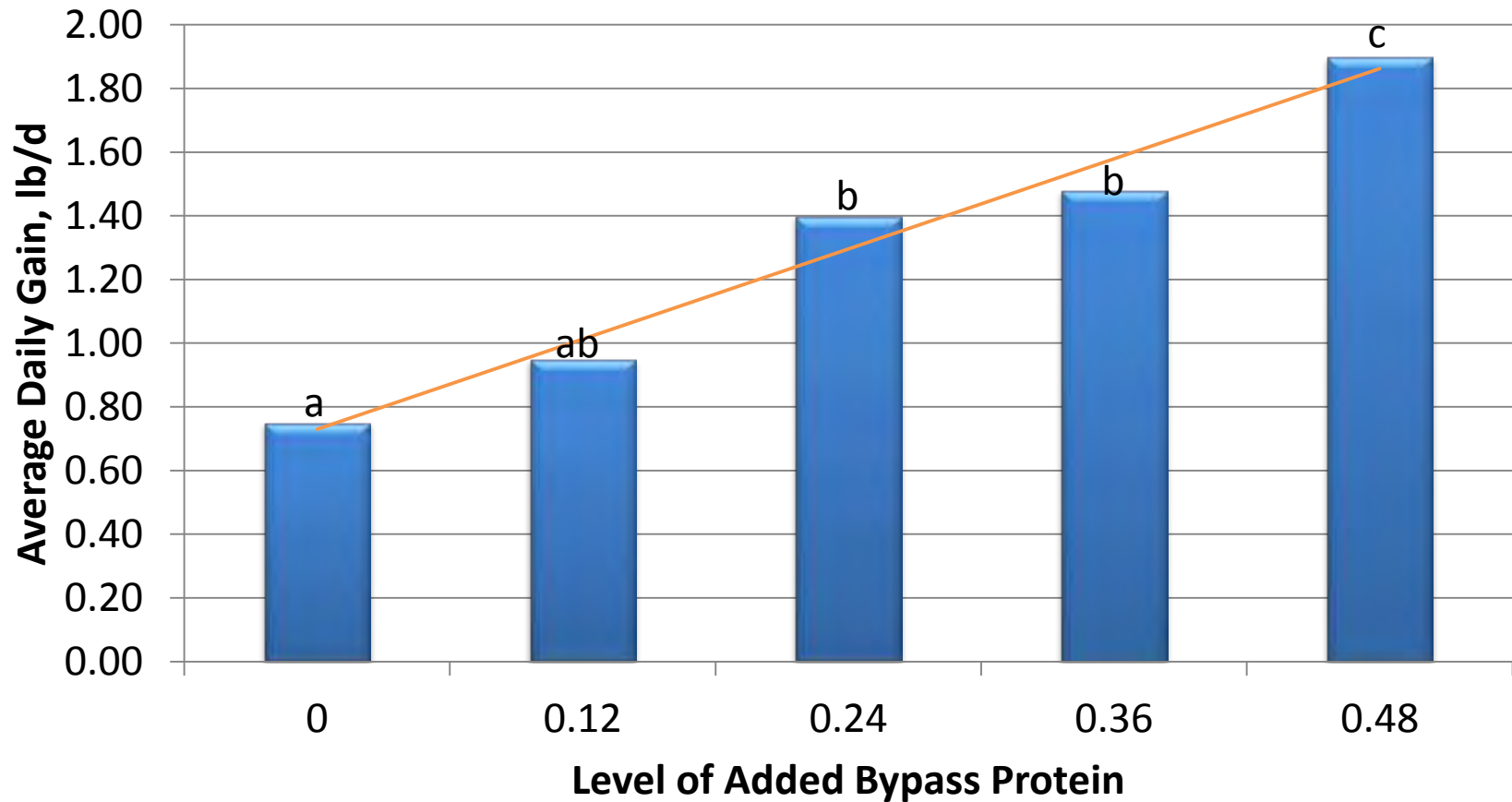
Citrus Pulp

Effect of Citrus Pulp and Protein Source Supplement



Citrus Pulp

Effect of Citrus Pulp and By-pass Protein on Calf Performance



^{a,b,c} Means with different superscript differ $P < 0.05$.

Alkire et al., 2005

Matt Hersom, 2008

Soybean Hulls

- **Medium CP level feed source**
- **70 – 75% of CP is rumen degradable**
- **50% of CP is soluble**
- **CP values depends on soybean inclusion**
- **TDN arises from digestible fiber**
- **Equivalent TDN to corn**
- **Bloat has been indicated in high level of feeding**

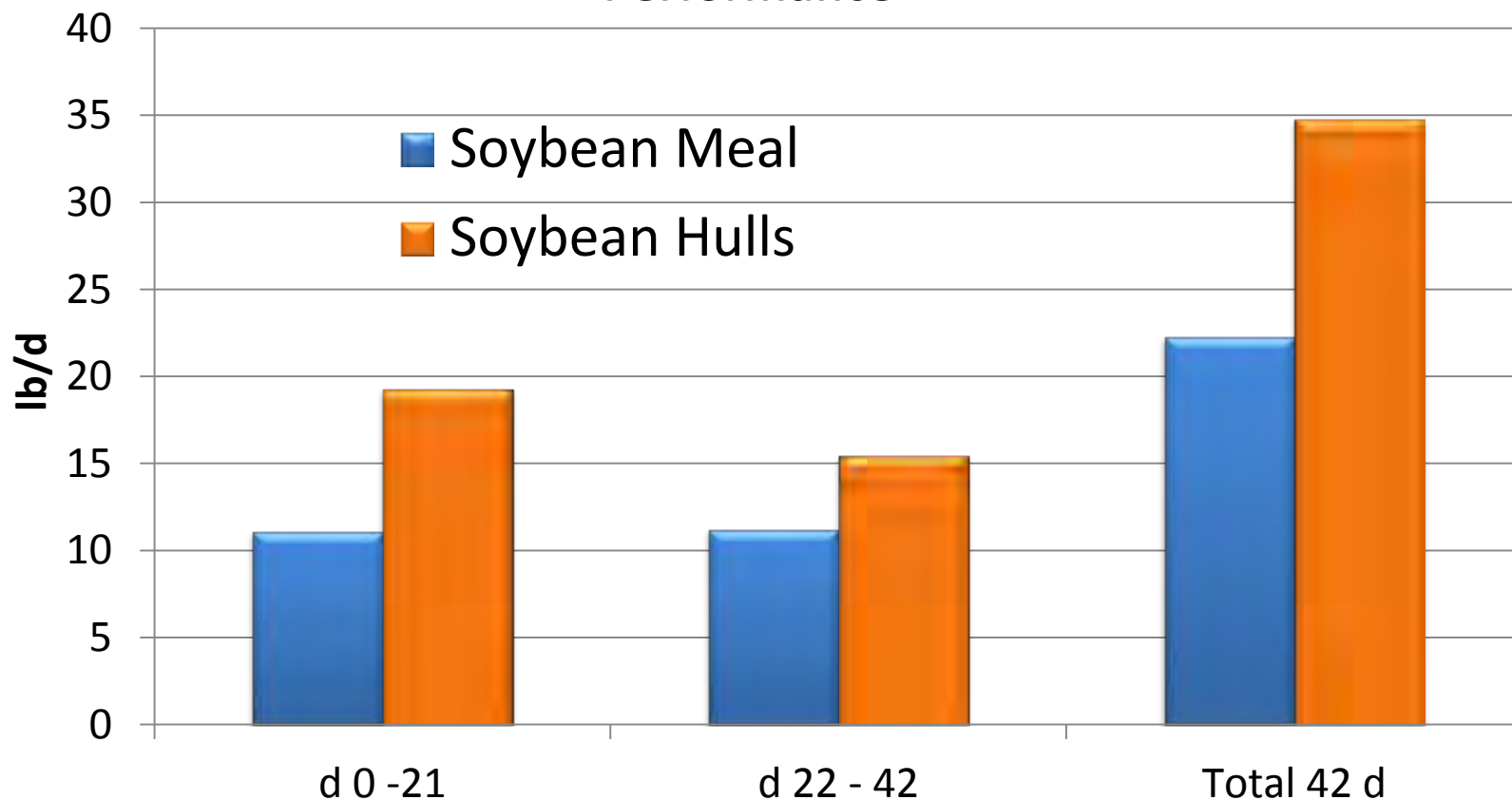
Soybean / Oilseed Meals

- Standard for protein supplementation
- Availability-cost fluctuation in recent years
- Pressure from other uses
- High protein, high energy
- “Natural” protein sources
- Higher ratio of DIP:UIP protein
- Compliment to low quality forage
 - Increase digestibility
 - Increase forage intake
- Excess used for energy
 - \$\$\$ source of energy
- Good-common compliment to energy ingredients for total supplement
- Incorporation into liquids for slurries



Soybean and Soybean Hull

Effect of Soybean Meal or Soybean Hulls on Calf Performance

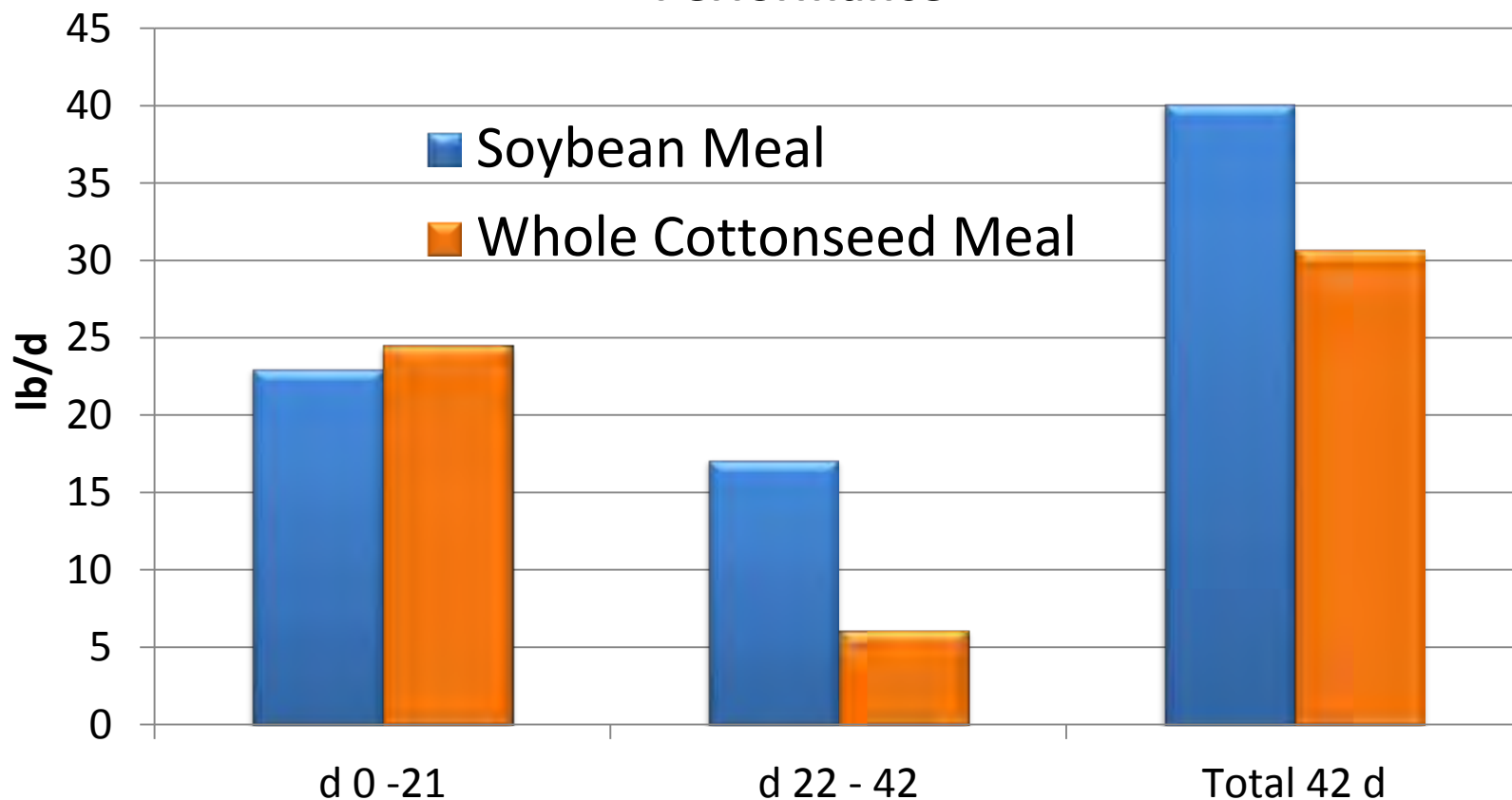


Whole Cottonseed

- Very good source of energy
- Very good source of protein
 - 2/3 of protein is rumen degradable
- Handling issues
- Aflatoxin considerations
- Gossypol
- Adaptation and intake limitations
- Oil concentration can approach 25%
 - High level of inclusion has negative effects

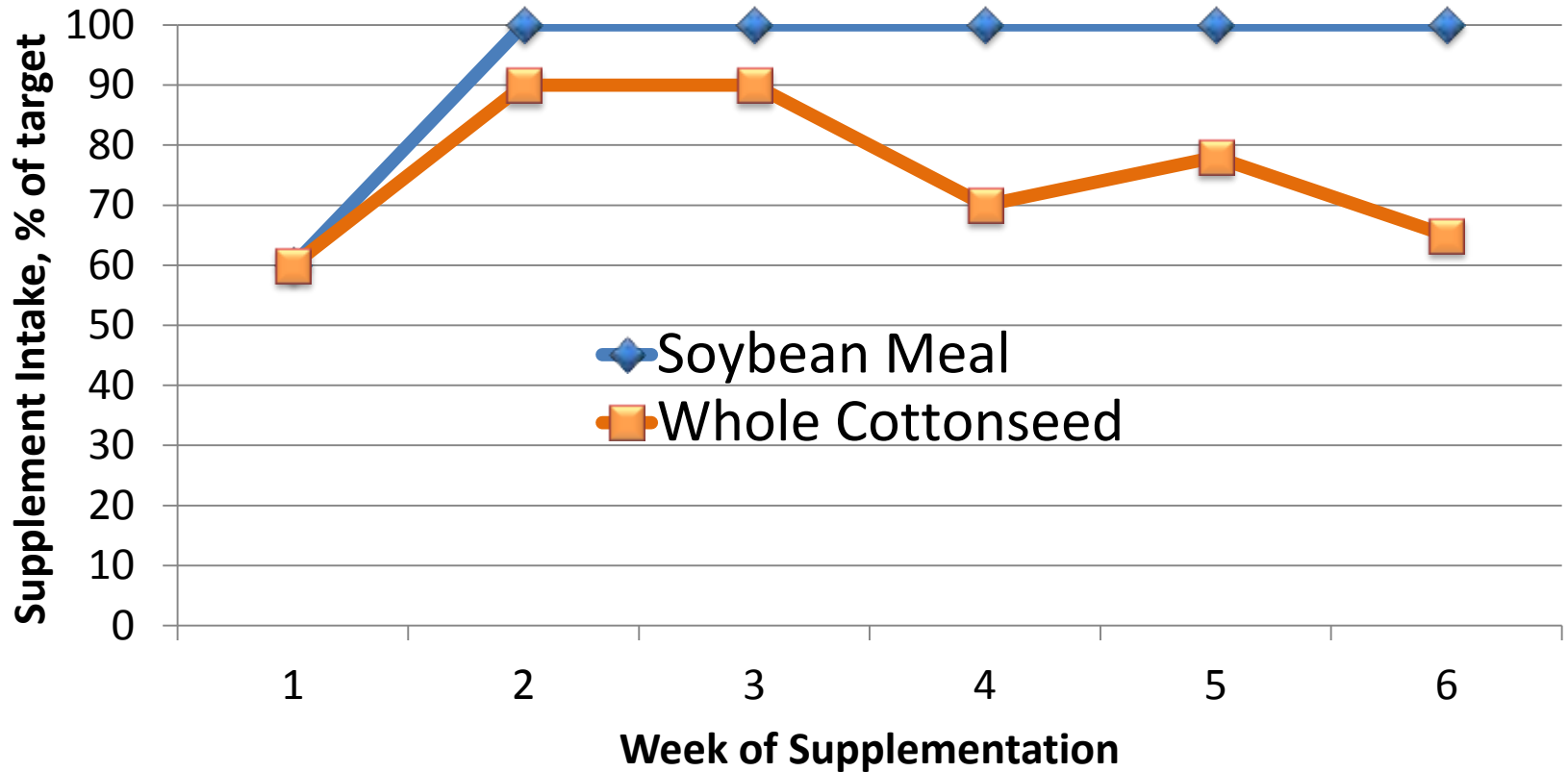
Soybean and Whole Cottonseed

Effect of Soybean Meal or Whole Cottonseed on Calf Performance



Soybean and Whole Cottonseed

Consumption of Soybean Meal or Whole Cottonseed Supplements



Economic Analysis of Soybean Meal, Soybean Hull, & Whole Cottonseed to Background Cattle

Item	Non - Background	SBH	SBM	Non - Background	SBM	WCS
Calf BW	486	521	509	525	563	557
Calf price \$/cwt	97.34	93.84	95.04	93.44	89.64	90.24
Adj. Calf Price		98.84	100.04		94.64	95.24
Calf Value, \$	473.07	514.96	509.02	490.56	532.82	530.49
Value Added, \$		41.89	36.13		42.26	39.93
Profit, \$/steer		7.21	(0.41)		5.72	5.25

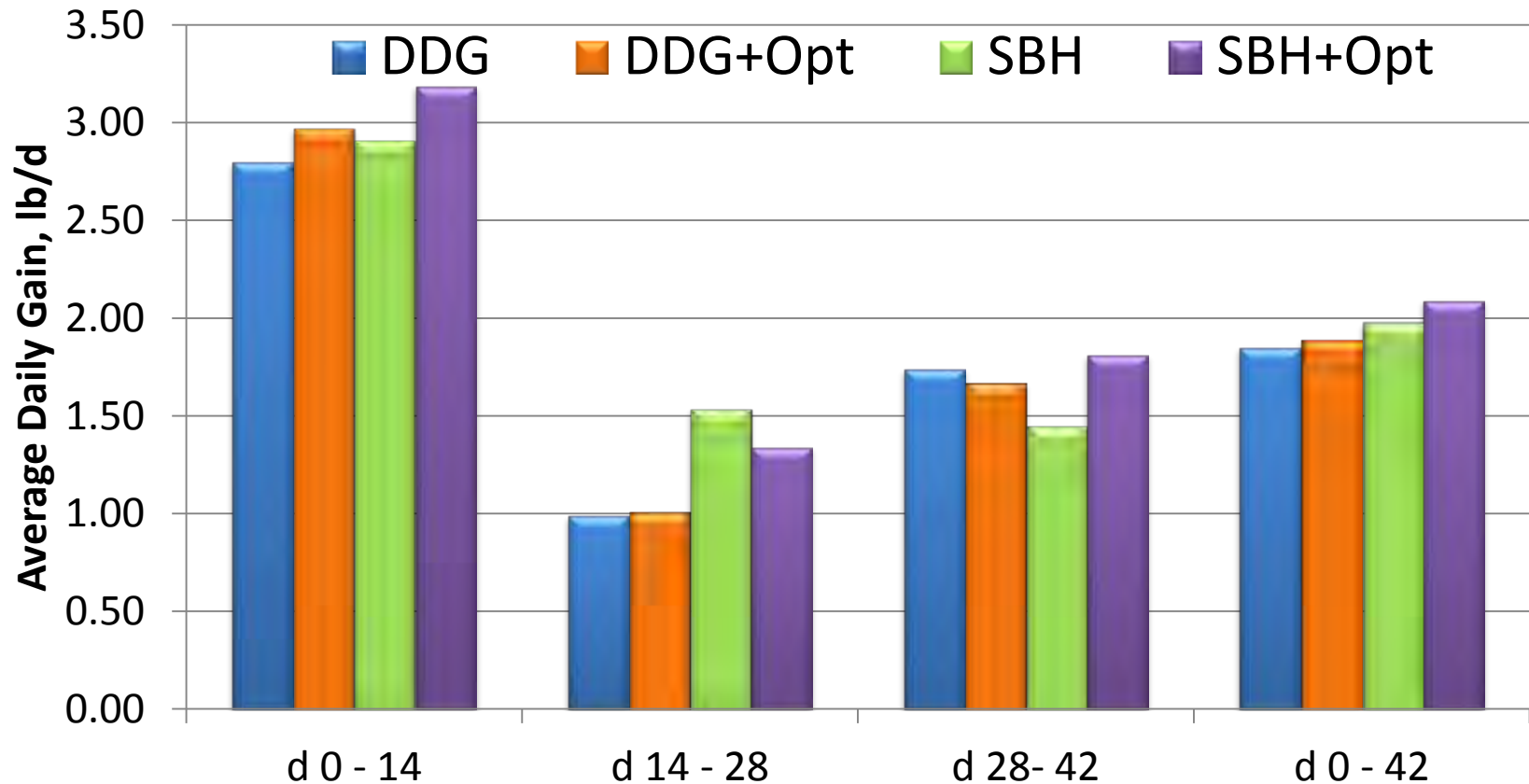
Dried Distillers Grains

- Excellent source of by-pass protein
 - Approx 50% of CP
- Low starch, high digestible fiber
- Concentrated source of amino acids
- Integrates well into grazing systems



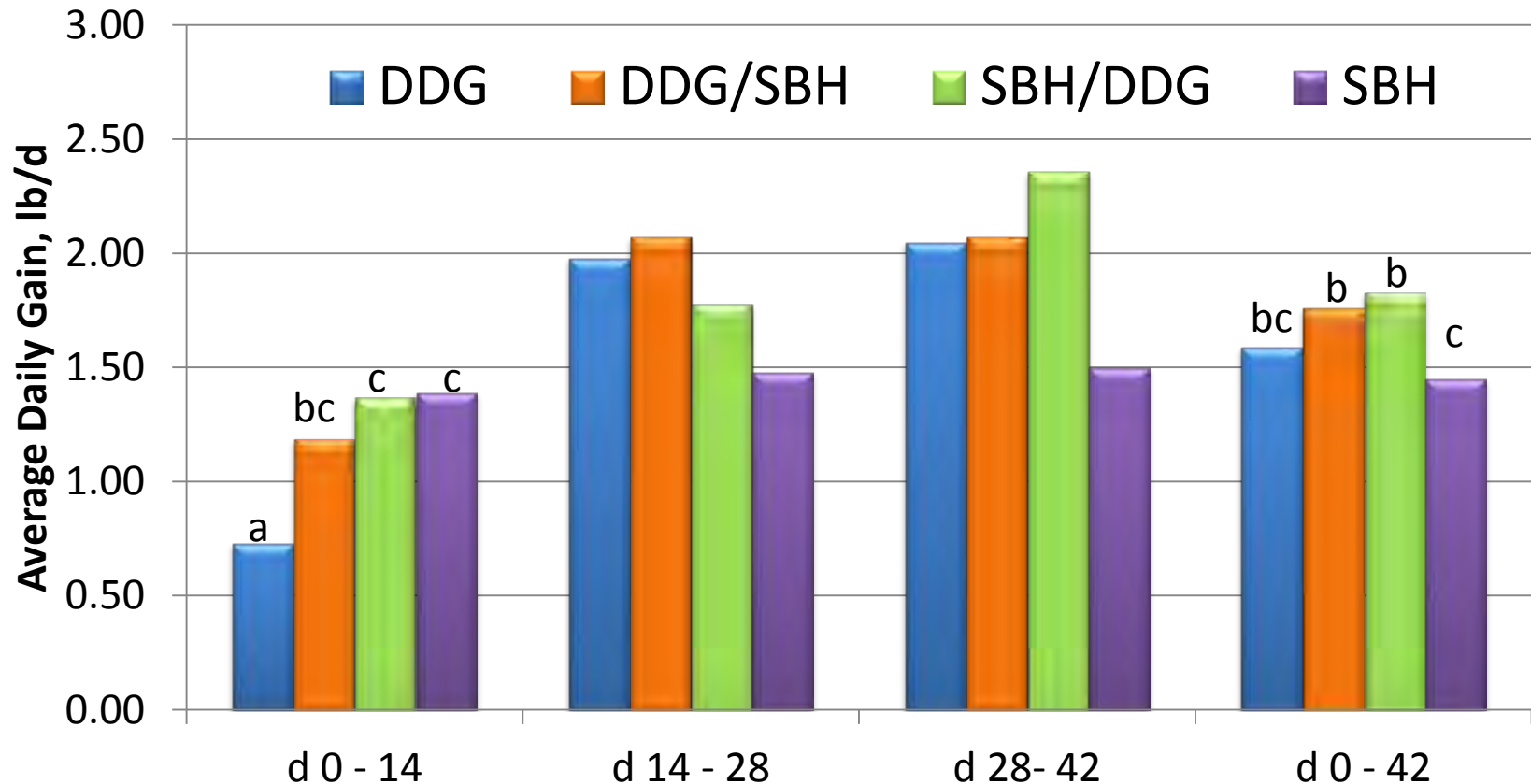
Soybean Hulls & Dried Distillers Grains

Effect of Soybean Hulls, Dried Distillers Grains, or Combination on Calf Performance



Soybean Hulls & Dried Distillers Grains

Effect of Soybean Hulls, Dried Distillers Grains, or Combination on Calf Performance



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Wahrmund and Hersom, 2007

Matt Hersom, 2008

Economic Analysis of Soybean Hull & Dried Distillers Grains to Background Cattle

Item	Dried Distillers Grains	DDG / SBH	SBH / DDG	Soybean Hulls
Supplement Intake, lb/d	6.17	6.35	6.63	6.87
Feed : Gain	7.81	7.69	8.13	9.26
Feed Cost, \$/steer/day ¹	0.89	0.86	0.94	0.96
Cost of gain, \$/lb gain/steer	0.59	0.50	0.55	0.68

¹ Feeds: DDG=\$182/Ton, SBH=\$155/Ton, Hay=\$67/Ton.

TAKE HOME MESSAGE

- **Energy is critical for acceptable growth**
 - Sourced from forage and supplement
- **Beef cattle consuming subtropical grass forage require supplemental CP to maintain performance and promote ADG**
- **Provide adequate protein**
 - Natural > NPN

TAKE HOME MESSAGE

- **Many supplements provide portions of energy and protein**
- **Energy supplementation may compliment natural protein supplementation**
- **Additional DIP may not be necessary with natural protein supplements**
- **Every Co-product has an Issue**
 - **Fat concentration**
 - **Lack of protein**
 - **Consistency**
 - **Availability**
 - **\$\$\$\$\$**

Questions



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