



ProviMilk

**Milk Replacer
Portfolio**

***Nurturing your
future***

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Liquid feeding programmes

PRE-WEANING: NUTRITION, HEALTH AND MANAGEMENT

- **Supply** calf and lamb with energy and protein:

- Maintenance
- Growth
- Health

- **Efficient** phase for daily live weight gain

- **Stimulate** optimal rumen development

- **Critical** window of opportunity



Milk Replacer Ingredient Groups

DAIRY PROTEIN

- Skim based e.g. skim milk, butter milk, casein, fat filled skim milk powder
- Whey based e.g. whey, whey protein concentrate, delactosed whey

NON-DAIRY PROTEIN

- Soya based e.g. soya protein concentrate, soya protein isolate, soy flour
- Animal based e.g. animal plasma, egg protein
- Others e.g. hydrolysed wheat gluten, potato protein, pea protein

FATS

- Animal fats e.g. lard, tallow, choice white grease
- Oils e.g. coconut, palm, fish oil
- Emulsifiers e.g. Lecithin

ADDITIVES

Vitamins and Minerals

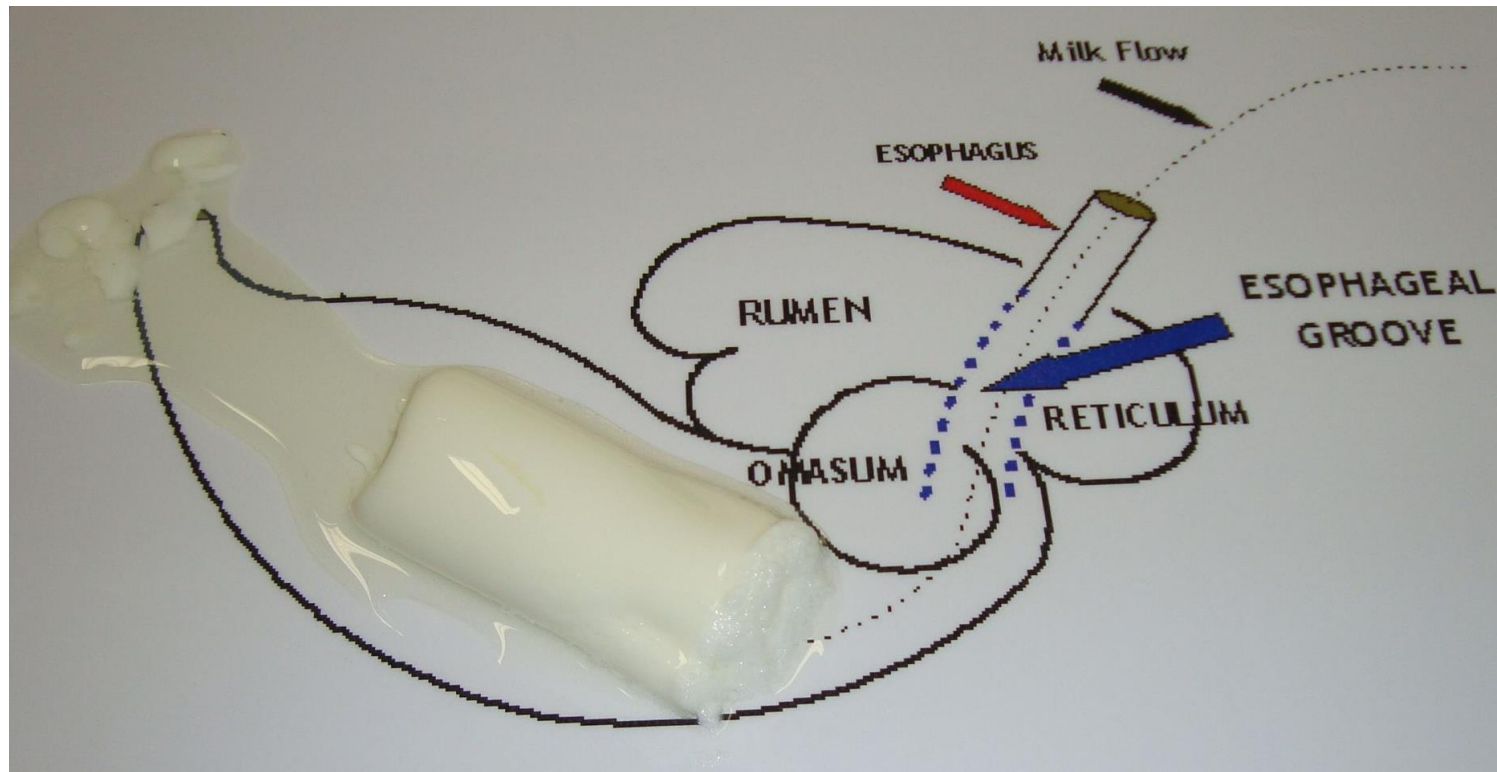
Probiotics and Prebiotics

Functional proteins, Medicinal additives and Acidifiers

Skim vs. Whey Milk Replacers:

What happens in the abomasum?

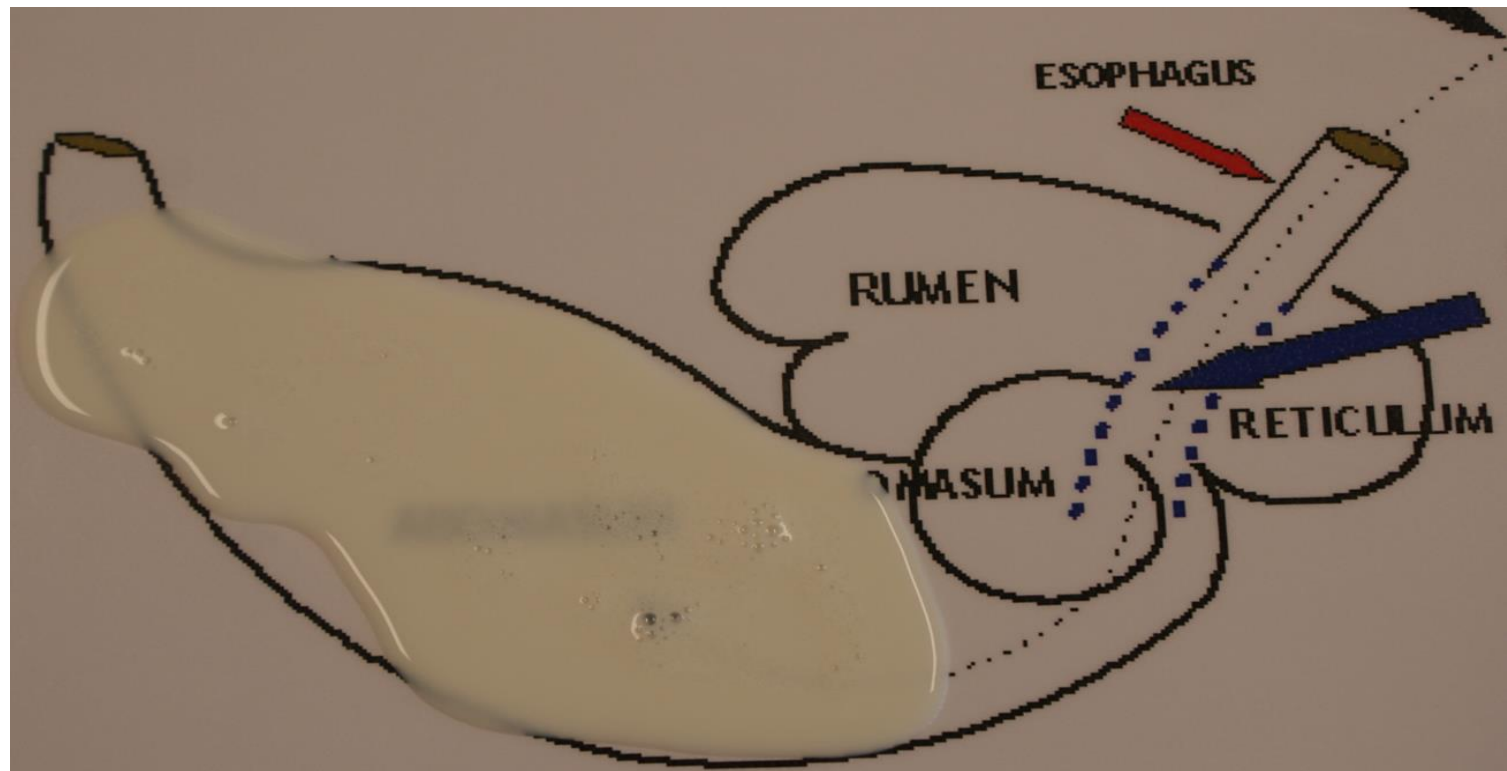
Casein in the abomasum (good coagulation)



Casein in the abomasum (bad coagulation)



Whey in the abomasum (no coagulation)



Milk Replacer Ingredient Selection

NUTRITIONAL QUALITY

- Digestibility (protein, carbohydrate)
- Amino acid profile (influences digestibility)
- Mineral content (Na, K, Ca, P, Cl, S)
- Anti-nutritional factors
- Immunoglobulin's
- Animal performance

PHYSICAL CHARACTERISTICS

- Mix quality
- Sedimentation
- Flowability

OTHER FACTORS

- Palatability
- Consistency
- Performance
- Cost

Product Overview

ProviMilk Milk Replacers

FEATURES

- High quality milk protein
- Spray dried fat (Palm/Coco)
- Balanced blend of vegetable fats and oils homogenised and emulsified
- Carefully selected vegetable proteins
- Excellent physical characteristics
- Balanced amino acid profile
- Mildly acidified
- Gut health package (NuStart)
- Fortified with vitamins, minerals and trace elements

BENEFITS

- Excellent digestibility
- High nutritional value
- Easy mixing and improved nutrient intake
- Optimal solubility and digestibility
- Consistent liquid milk quality
- Improves feed utilisation
- Maintains milk freshness
- Improves gut health and performance
- Optimises growth and development



ProviMilk Calf Offering

Product	Fastgro	Daisy	Total	Professional	Prestige	Premium	Elevator
Protein (%)	22	22	22	22	22	24	26
Oil (%)	15	18	18	17	17	20	17
Base	Whey/Veg	Whey/Veg	Whey	Skim/Veg	Skim	Skim/Veg	Whey/Veg
Vitamin A (iu/kg)	25 000	25 000	25 000	25 000	25 000	25 000	25 000
Vitamin D3 (iu/kg)	6 000	6 000	6 000	6 000	6 000	6 000	6 000
Vitamin E	150	150	150	150	150	150	150
Proviox™ 50 (iu/kg)	100	100	100	100	100	100	100
NuStart included	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pack size (kg)	20	20	20	20	20	20	20
Feeding system	All	All	All	All	All	All	All

Machine Special Version available for Britmix Feeder

Whole milk or milk replacer?

OPTIMISING PERFORMANCE: PROS AND CONS ...

- Health
- Performance
- Convenience
- Economics



Competitor Differentiation:

NuStart – gut health package

What is NuStart?

Effective combination of additives working in synergy

FEATURES

- Antioxidant (Proviox™ 50)
- Etheric oils
- Probiotic (CMR)
- Prebiotic (CMR and Feed)
- Functional fibre (Feed)
- Vitamins and minerals

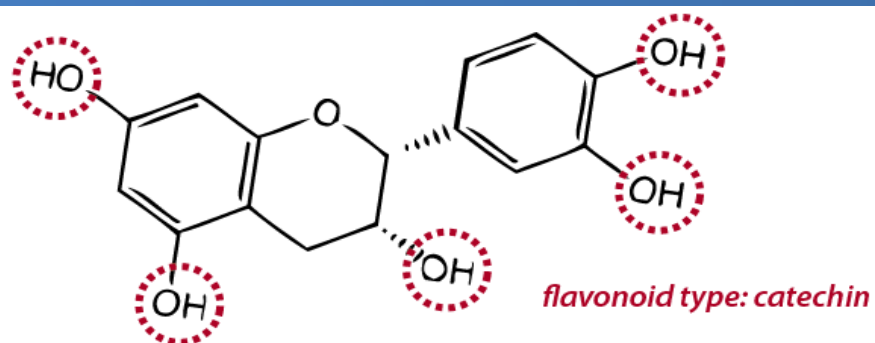
BENEFITS

- Antibacterial
- Intestinal development
- Stimulates feed intake
- Boosts immunity
- Synergistic benefits
- Increase growth rate

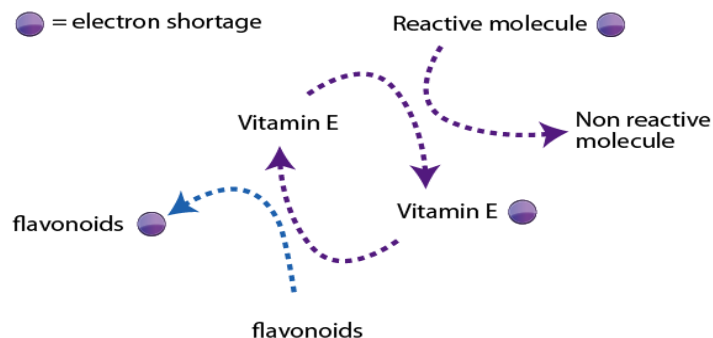
Antioxidant (Proviox™ 50)

Unique antioxidant blend and partial Vitamin E replacer

1. Large capacity to give away unpaired electrons = large antioxidant capacity



2. Regeneration of vitamin E



Essential oils

Blend of oils encouraging feed intake and stimulating health

Source	Active compound(s)	Properties
Cinnamon	Cinnamaldehyde	Appetite and digestion stimulant, antiseptic
Rosemary	Cineole	Digestion stimulant, antiseptic, antioxidant
Oregano	Carvacrol	Appetite stimulant, antiseptic
Coriander	Linalol	Digestion stimulant
Thyme	Thymol	Appetite stimulant, antiseptic, antioxidant
Aniseed	Anethole	Digestion stimulant
Garlic	Allicin	Digestion stimulant, antiseptic



Probiotic and Prebiotic

Promoting and supporting intestinal development

PROBIOTIC (CMR)

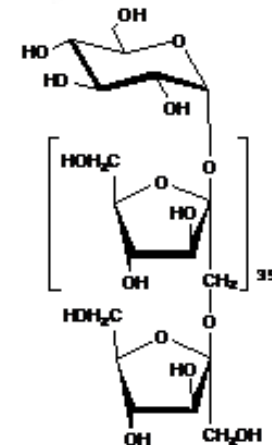
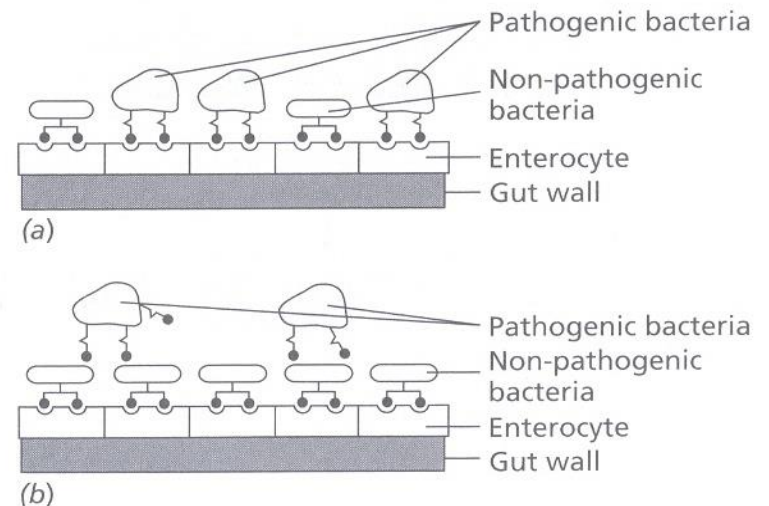
SPORE FORMING BACTERIA

- Introduction of positive strain competes with negative strains

PREBIOTIC (CMR AND FEED)

FRUCTO-OLIGOSACCHARIDES

- Provides nutrients for beneficial bacteria
- Production of volatile fatty acids
- Competitive exclusion



Dietary fibre

Stimulating rumen development

FUNCTIONAL FIBRE (FEED)

- Provides fibre specifically fermented to butyrate
- Encourages early rumen development

Results in:

- Higher fermentation activity
- Improved absorption
- Enhanced dry feed intake



Vitamins and Minerals

Supporting requirements of the rapidly developing young ruminant

VITAMINS

- A
- D3
- E
- B range

MINERALS

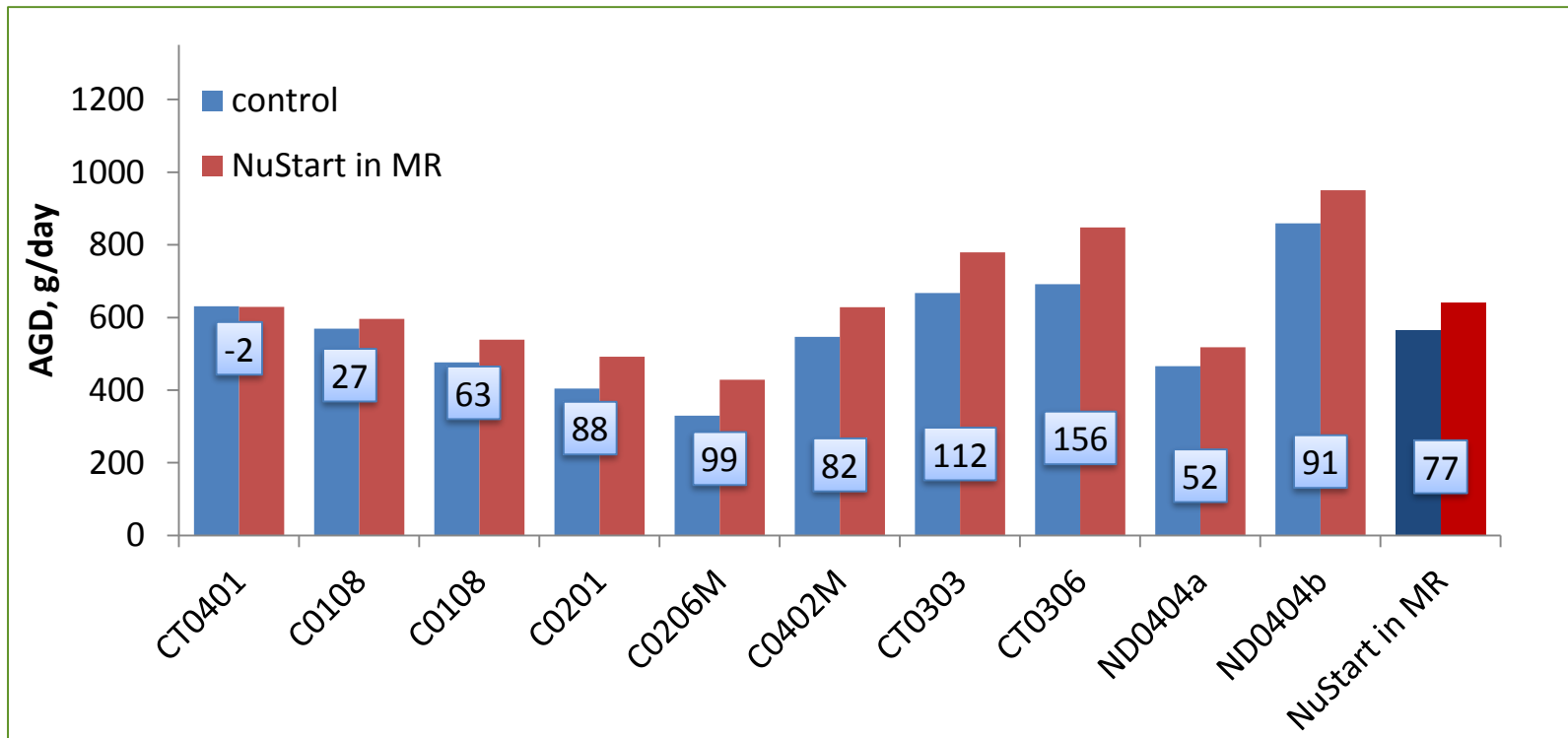
- Ca
- P
- Mg
- Na
- K
- Cl
- S
- Fe
- Cu
- Zn
- Mn
- Se
- Co
- I

Effect of NuStart on ADG

Calf Milk Replacer

OVERALL EFFECT OVER STUDIES

- 14.6% increase in ADG when NuStart was included in CMR

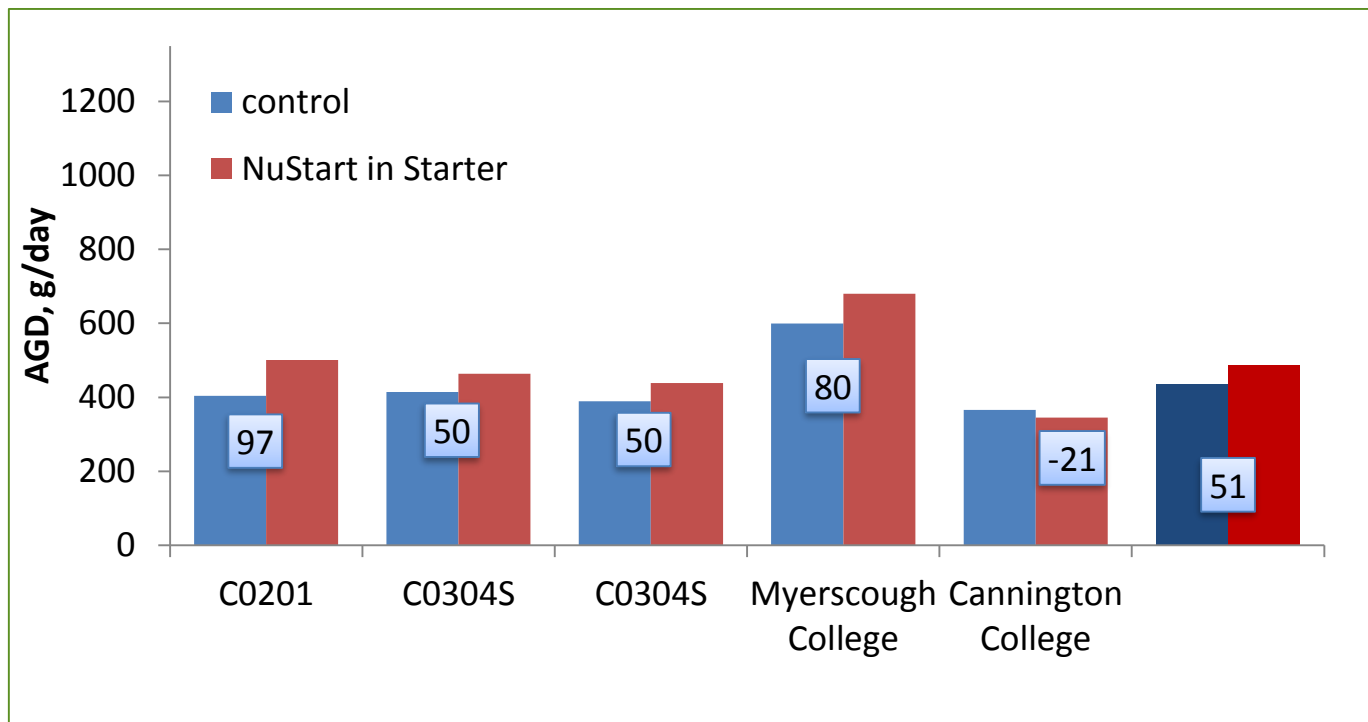


Effect of NuStart on ADG

Calf Starter

OVERALL EFFECT OVER STUDIES

- 10.6% increase in ADG when NuStart was included in Starter

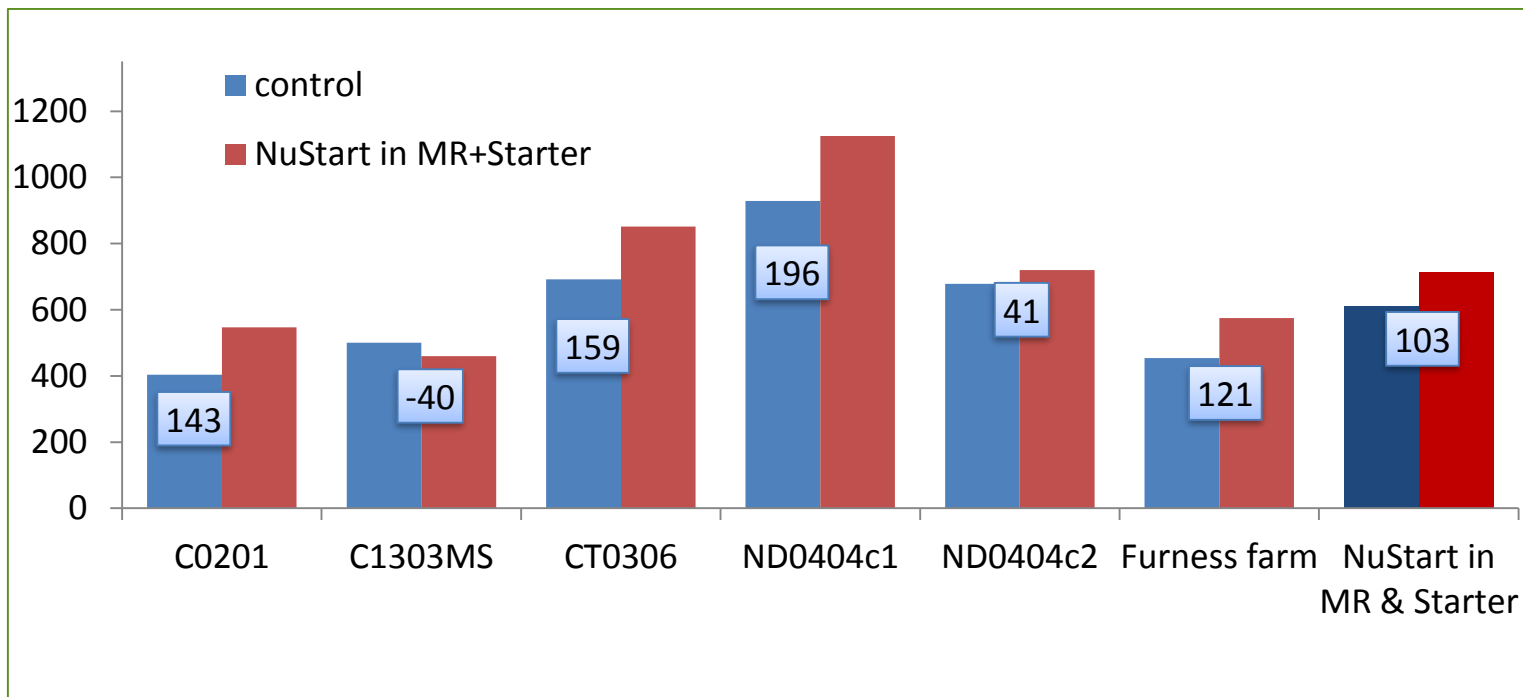


Effect of NuStart on ADG

Calf Milk Replacer and Calf Starter

OVERALL EFFECT OVER STUDIES

- 17.4% increase in ADG when NuStart was included in CMR and Starter

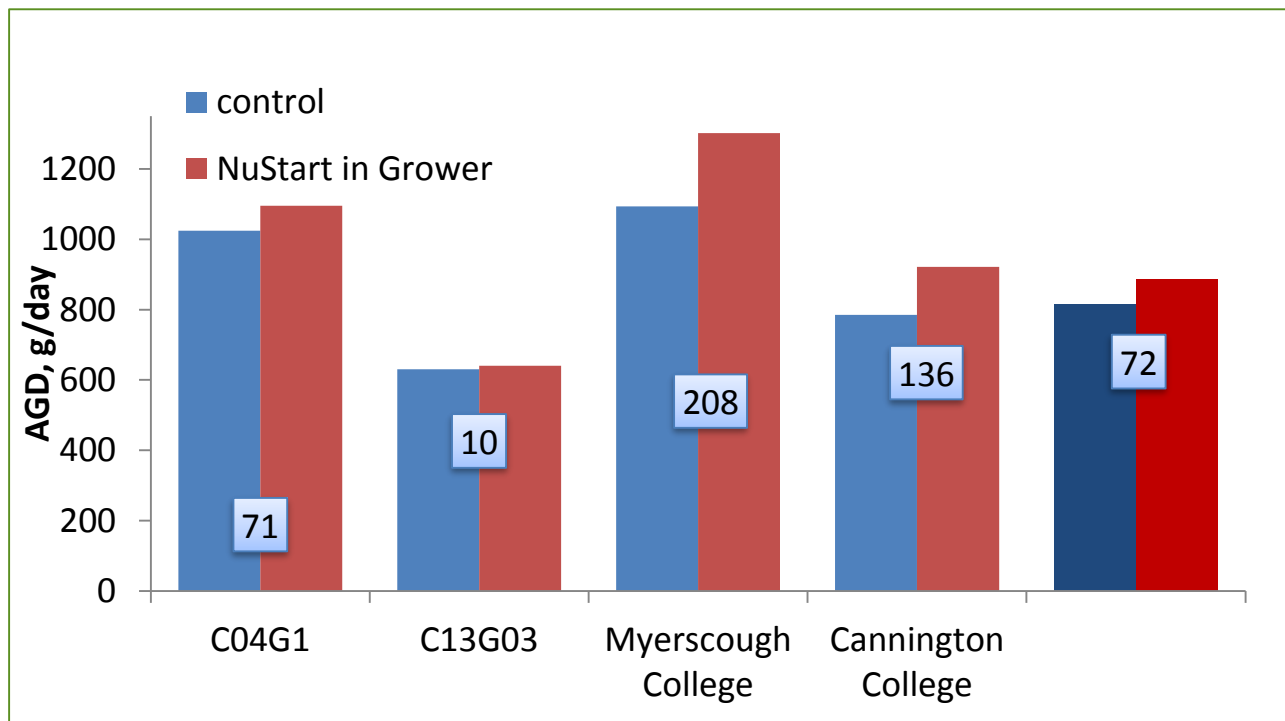


Effect of NuStart on ADG

Calf Grower

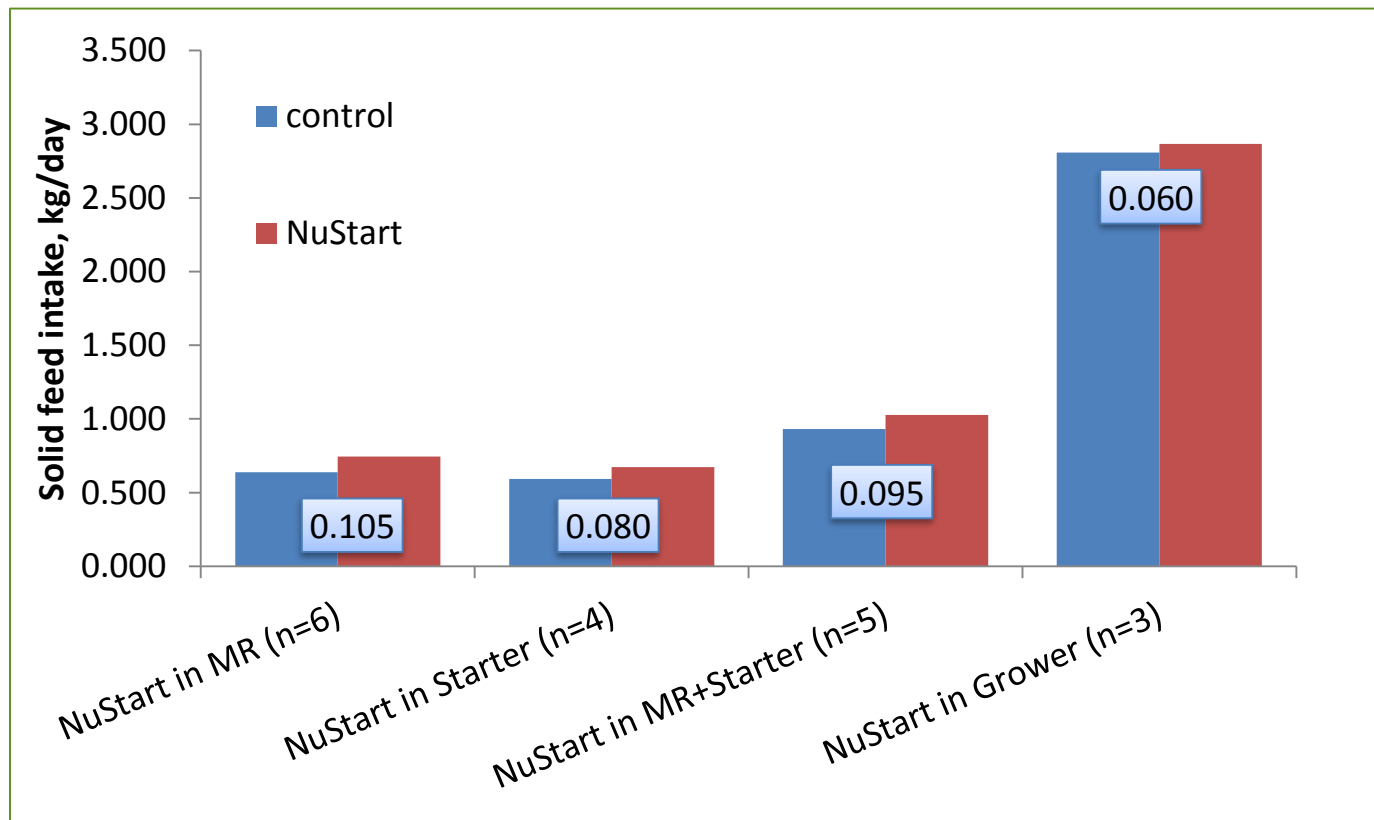
OVERALL EFFECT OVER STUDIES

- 8.6% increase in ADG when NuStart was included in Grower



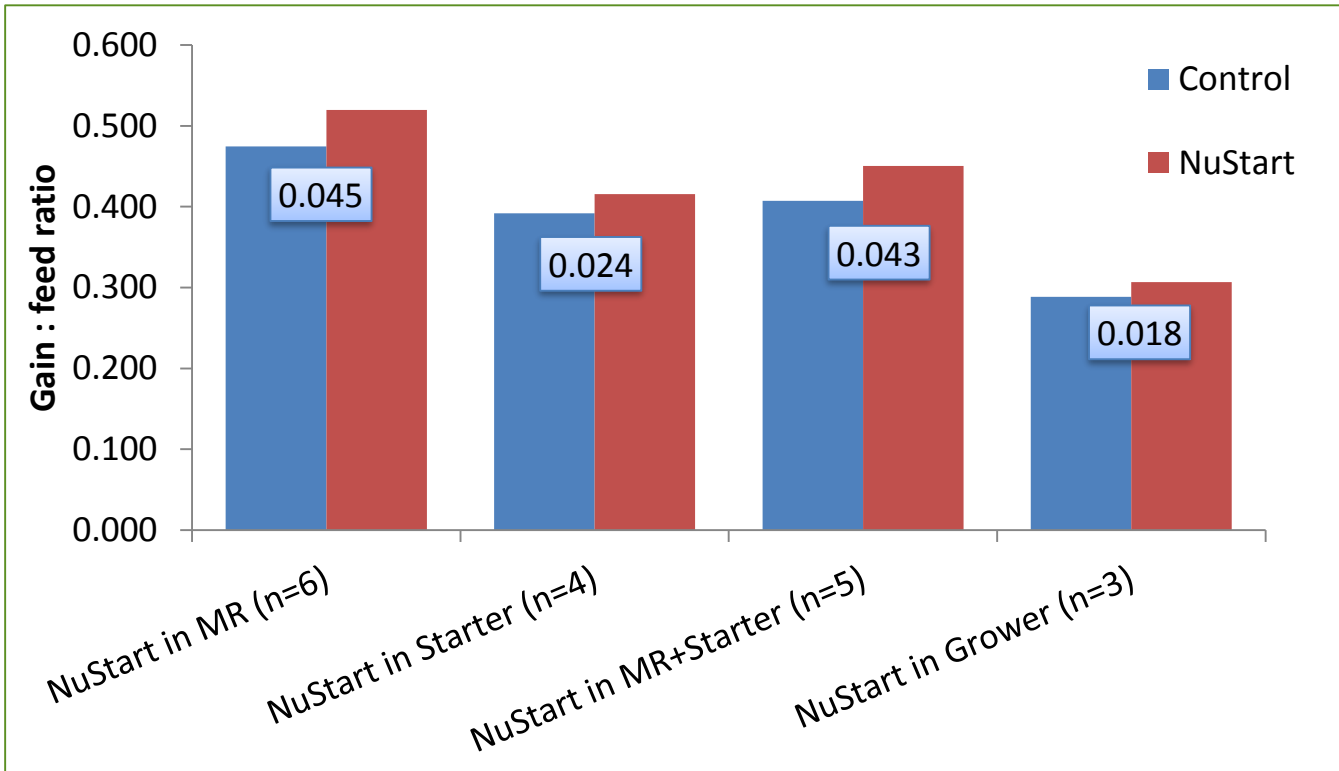
Effect of NuStart on solid feed intake

NUSTART INCREASED SOLID FEED INTAKE BY 12% OVERALL



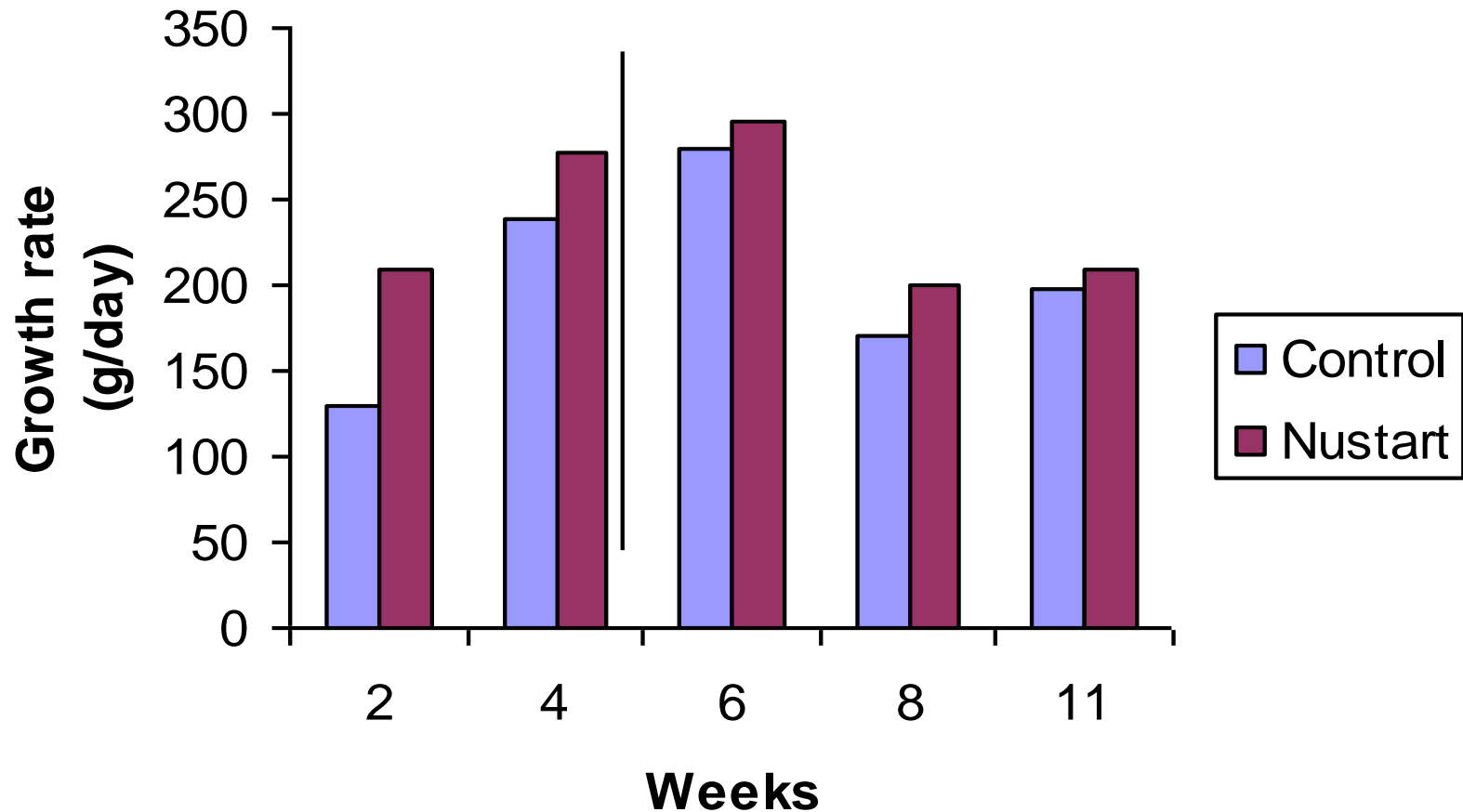
Effect of NuStart on Feed Efficiency

NUSTART INCREASES GAIN : FEED RATIO

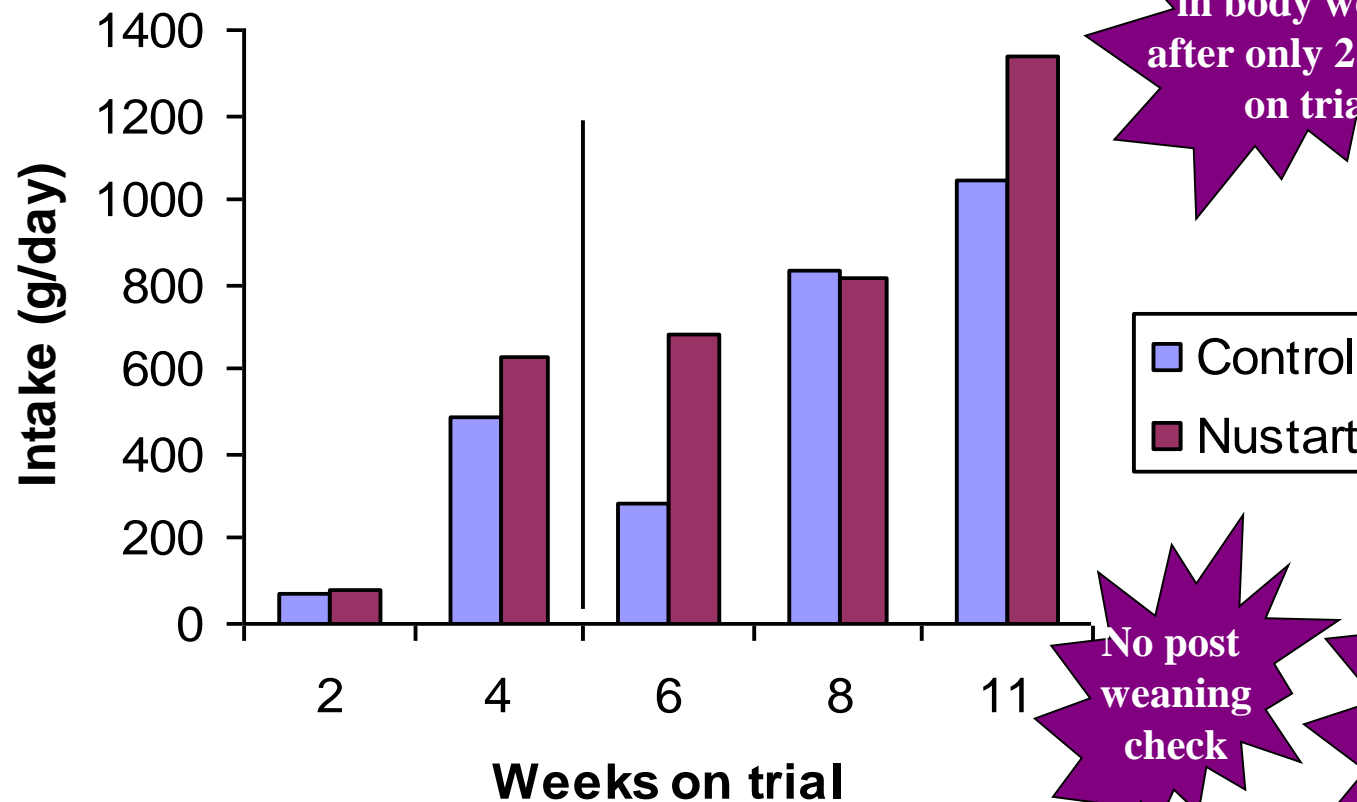


Effect of NuStart on ADG

Lamb Milk Replacer and Starter



Effect of NuStart on solid feed intake



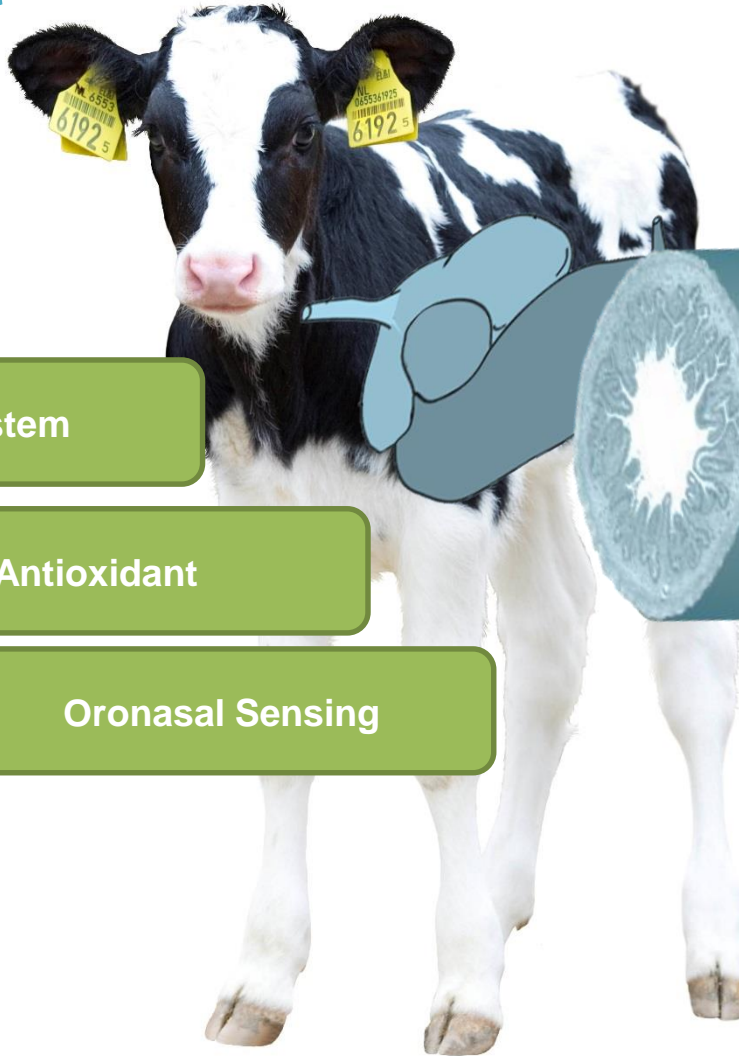
Over
1 kg advantage
in body weight
after only 2 weeks
on trial

Reduced
production
costs

No post
weaning
check

2 weeks
earlier
to
finish

NuStart



Immune system

Antioxidant

Oronasal Sensing

Digestive Function

Competitive exclusion

Antimicrobial

Prevent adhesion of
pathogenic bacteria

NuStart

PUBLISHED RESEARCH

- Hill, T. M., et al. (2007). Apex Plant Botanicals for Neonatal Calf Milk Replacers and Starters." The Professional Animal Scientist 23(5): 521-526.
- Hill, T. M., et al. (2005). "Effect of Apex botanicals on calves fed pasteurized milk or milk replacer (NIR) during the nursery phase and subsequent grower phase until four months of age". Journal of Animal Science 83(Suppl. 1): 254
- Hill, T. M., et al. (2004). "Effect of level of starch and Apex botanicals in neonatal calf starter feeds." Journal of Dairy Science 87(Suppl 1): 401

