



REARING GUIDE

LAMBS & KID GOATS



NZAGBIZ



The NZAgbiz Feed Guide is the property of NZAgbiz Limited, a Fonterra owned business unit. The information contained in this document is provided as a guide only. While every effort has been made to ensure this information is correct, NZAgbiz Limited and Fonterra make no express or implied warranty about the accuracy of this information and accept no liability for reliance of its content. If in doubt, please consult your veterinarian.

Ankid™, Anlamb™, Biosupport™, Jumpstart™ and Novolyte™ are trade marks of the Fonterra group of companies.



CONTENTS

REARING BEST PRACTICE

- 6 Lamb and kid goat housing and hygiene
- 7 Lamb and kid goat feeding
- 8 Milk replacer
- 9 Lamb and kid goat health
- 10 Nutritional scours
- 11 Infectious agents
- 13 Rehydration during scours
- 14 Bloat in lambs and kid goats

PRODUCT RANGE

- 18 Colostrum
- 19 Jumpstart
- 20 Lamb and kid goat milk replacers
- 22 Anlamb
- 23 Ankid
- 24 Novolyte electrolyte
- 25 Biosupport probiotic

USAGE GUIDE

- 27 Product usage guide
- 28 Feeding guidelines



REARING BEST PRACTICE

INTRODUCTION

The better start an infant animal has in life, the better animal they will be in years to come. Rearing a strong healthy animal starts with good nutrition and management of the mother to support a robust newborn at birth followed by quality nutrition and management practices during rearing.

Nutrition, and thus feed inputs, plays a crucial role in the development, growth and well-being of young animals. As with any feed it is important to source products that are nutritious, highly reputable, carefully designed and made from high-quality ingredients.

“GIVE TOMORROW’S STOCK THE BEST START TO LIFE TODAY”

This Feed Guide has been designed to provide you with best practice rearing guidelines, informed by recent scientific and applied research, the product options available to you and our recommended usage.

If you have any questions, please call [0800 809 011](tel:0800809011)



LAMB AND KID GOAT HOUSING AND HYGIENE

Housing

Lambs and kid goats require shelter to live in which needs to be secure, clean and safely penned off. An individual newborn requires approximately 1m² of space and by 3 weeks this requirement will double. The shelter will require bedding for sleeping to provide warmth, insulation and comfort e.g. straw, hay, sawdust, wood shavings, and leaves. It should also be dust free to avoid respiratory issues. Keep this area clean and dry to prevent bugs accumulating and to prevent the spread of disease. Always ensure there is plenty of fresh drinking water available too.

Hygiene

The newborn's navel should be checked and dipped in iodine (preferably alcohol-based to speed up drying) or disinfectant to prevent a navel infection. Ensure the navel is soaked down to the skin at the base of the navel. Whilst hand-rearing, and particularly for the first few weeks, it is important to keep all bottles and teats thoroughly clean to prevent infections.

We can't emphasize enough the importance of feeding hygiene, throughout the rearing process. Bugs can cause bloat in 3- 5-week-old both lambs and kid goats, so maintaining good hygiene as the infant gets older is essential. Diluted bleach can be used as a disinfectant but rinse the utensils well before re-using for feeding.

Travel

Ensure all transport is performed in clean trailers to avoid health issues. Also ensure there is sufficient space to avoid smothering - partitions in trailers with no more than 6 to 8 animals per partition is recommended. Before loading dip lambs or kid goats' navels in iodine solution right down to the base to avoid navel infections.



LAMB AND KID GOAT FEEDING

Colostrum

Colostrum is essential for young lambs and kid goats to provide immunity to a wide range of bugs. A new-born should receive good quality colostrum from its mother, if not available good quality cow's colostrum (Brix>22) or Jumpstart (refer to page 19), within 6-12 hours of birth. It is recommended to feed 15% of the animal's body weight in colostrum for at least 2 days. In nature, a mix of colostrum and milk feeding would naturally be continued until 4 days after birth. This "transition milk" contains lower levels of immunoglobulins but additional nutrients, growth factors and bioactives that continue to support the development of the digestive tract and to support growth and health. After ensuring they have received colostrum (day 1-2), "transition milk" (day 3-4), a milk replacer should be introduced.

NOTE

Feeding lambing ewes / kidding goats well promotes the birth of healthy animals and good colostrum quality and production.



MILK REPLACER

Always follow feeding instructions. A lamb or kid goat will continue to drink as much as possible, but the most natural way they feed is little and often. Lambs and kid goats have small stomachs so be cautious when feeding large volumes of milk replacer as this can cause discomfort and bloat. We recommend 4-6 feeds per day depending on age and weight if feeding with bottles or cafeterias. Lambs reared on automatic feeders that supply free access to milk will establish their own feeding pattern and will naturally not overfeed. It is essential when using automatic feeders, to ensure they are cleaned and calibrated weekly, that the teats are checked regularly and replaced if damaged, and that there are no leaks or power outages. If lambs or kid goats do not have access to milk freely in these systems, overfeeding can occur causing discomfort or bloat. In the event of power outages and lambs or kid goats are very hungry, monitor feeding of individual animals to avoid over-indulgence.

To reduce overfeeding, check the hole in the teat is not too big. If the milk is free-flowing from the teat, the hole is too big. If the lamb or kid goat is weak and unable to suckle, a reviver (tube feeder) should be used to feed colostrum and/or a milk replacer.

Water and hard feed

Fresh clean water must always be available. Free access to solid feed starter diets (concentrates and forages) may be offered from day 7 onwards to promote the development of the rumen. As with milk inputs, solid feed diets should be of good quality, feeders regularly cleaned and old feed discarded.

Once the lamb or kid goat reaches 4 to 6 weeks old, depending on the weaning system, approximately 50% of its nutrients should be from solid feed such as good quality pasture or concentrates.

Weaning

Weaning is the transition of the lamb or kid goat's diet from liquid (e.g. milk replacer) to solid feed. Lambs and kid goats should be eating solid feed for a minimum of 21 days, showing rumination behavior (i.e. chewing their cud) and be drinking water freely at the time of weaning. As a general guide, lambs and kid goats should be at least 40 days old and weigh at least 15kg (lambs) or 16kg (kid goats), before weaning. Milk replacer should be gradually removed to give the animal time to adjust to the new feeding regime.

The weaning strategy for lambs depends on the feeding system in use. If feeding on ad-lib by auto-feeder, this is generally done by abrupt weaning at 4-5 weeks provided lambs are a minimum 13kg, are in good health and body condition, and are eating solid feed and ruminating. When on a restricted feeding system (i.e. bottle fed) and they have reached about 12kg, reduce feeds from 3 x daily (3 x 350mL) to 2 x 350mL per day for a week (not before week 3), then 1 x 350mL a day for a week and then wean.

LAMB AND KID GOAT HEALTH

Identifying infection

Lambs and kid goats are susceptible to some common infections. It's important to identify warning signs of illness and know how to control and prevent infectious diseases should they arise. If in doubt, consult your veterinarian.

CAUSE	POSSIBLE SYMPTOMS	RECOMMENDATIONS
Abdominal pain	<ul style="list-style-type: none"> Grinding teeth (usually a sign of pain) 	<ul style="list-style-type: none"> Check for scours and/or bloat Check fiber intake - is the lamb/kid goat getting enough
Bloat	<ul style="list-style-type: none"> Swollen stomach, lethargic 	<ul style="list-style-type: none"> Refer to page 14
Dehydration	<ul style="list-style-type: none"> Sunken eyes When pinched skin will not return back to normal quickly 	<ul style="list-style-type: none"> Identify cause Rehydrate (refer to page 13)
Infected tag	<ul style="list-style-type: none"> Ear will be red, cut, infected Ear could be hot and swollen 	<ul style="list-style-type: none"> Remove any foreign matter Apply antibiotic (purple) spray Hot & swollen, treat with antibiotics
Foot injury / scald	<ul style="list-style-type: none"> Lame Reluctant to stand 	<ul style="list-style-type: none"> Remove any foreign objects Spray foot with antibiotic spray If severely lame, treat with antibiotics as directed by your vet
Infected naval	<ul style="list-style-type: none"> Swollen / lump Weeping / pussy 	<ul style="list-style-type: none"> Treat with antibiotics as directed by your vet
Infectious agent	<ul style="list-style-type: none"> Reluctant to drink Scours 	<ul style="list-style-type: none"> Refer to page 9
Respiratory infection	<ul style="list-style-type: none"> Coughing Rapid respiration or shivering 	<ul style="list-style-type: none"> Check for cold or wet conditions (draughty or poor ventilated shelter) Treat with antibiotics as directed by your vet
Scours	<p>Nutritional: Faeces pale in colour, can be yellow and softer than normal</p> <hr/> <p>Infectious: Dull animal, high temperature, faeces foul smelling and may contain mucous or blood</p>	<ul style="list-style-type: none"> Refer to page 10

NUTRITIONAL SCOURS

Nutritional scours are usually a result of poor-quality milk/milk replacer, poor mixing of milk replacer or over-feeding. High energy diets and pasture can also result in nutritional scours in older lambs and kid goats

Prevention

- Maintain clean and hygienic conditions within the lambing/kidding area, the rearing shed and all personnel working with the animals.
- Ensure footwear is clean and only use gumboots dedicated to the facility
- Walk through the foot bath and refresh this with a sanitiser daily
- Remove or cover clothing that has been in contact with other livestock since it was last laundered and use dedicated overalls that are kept within the facility
- Ensure hands are clean and gloves are always worn when handling the animals
- Sterilise all equipment regularly
- Avoid overcrowding of pens

Infectious Scours

Infectious scours (bloody, foul-smelling) is almost certainly something serious and will require vet assistance and/or laboratory testing for an accurate diagnosis. If this is the case, we would recommend contacting your local vet as soon as possible.

NOTE

Scours can cause lambs/kid goats to lose a large amount of fluids each day. It is important to ensure these animals are well hydrated.

- Remove any lambs/kid goats suffering from scours from the pen and place in isolation (clean, warm and dry)
- Treat affected lambs with Novolyte (refer to page 24), kid goats with a suitable electrolyte, and supply milk replacer as recommended
- If the lamb/kid goat has recovered it can leave isolation and return to a self-feeding group
- If the lamb/kid goat has not recovered at day four, seek veterinary advice

INFECTIOUS AGENTS

INFECTIOUS AGENT	POSSIBLE SYMPTOMS	RISK
E-COLI	<ul style="list-style-type: none"> Occurs at <10 days of age Salivate and have a cold mouth 	<ul style="list-style-type: none"> Provide good environment conditions Practice good hygiene Incidence is decreased by good colostrum intake
ROTOVIRUS	<ul style="list-style-type: none"> Occurs at 10-14 days of age Scouring; very liquid and yellow Depressed and dehydrated 	<ul style="list-style-type: none"> Provide good environment conditions Practice good hygiene Incidence is decreased by good colostrum intake
CRYPTOSPORIDIUM	<ul style="list-style-type: none"> Occurs at 5-10 days of age Scouring; very liquid and yellow Animals maybe feeding and active 	<ul style="list-style-type: none"> Provide good environment conditions Practice good hygiene Incidence is decreased by good colostrum intake
SALMONELLA	<ul style="list-style-type: none"> Occurs at any age Scouring; very liquid and yellow Animals <1 week of age may not show clinical signs and sudden death can occur 	<ul style="list-style-type: none"> Provide good environment conditions Practice good hygiene Incidence is decreased by good colostrum intake
COCCIDIOSIS	<ul style="list-style-type: none"> Susceptible and 1-4 months of age Scours are watery and may contain blood or mucus (but not usual) Clinical signs usually occur following times of stress e.g. transport, weaning or changes in feed Can be sub-clinical which results in lack of weight gain 	<ul style="list-style-type: none"> Provide good environment conditions Practice good hygiene Incidence is decreased by good colostrum intake
PINK EYE	<ul style="list-style-type: none"> Infected eye will be pink on the outside. Eye will weep and 'wink' and is often half-closed 	<ul style="list-style-type: none"> Follow veterinary advice if the eye appears cloudy. This is likely to include an antibiotic Wipe with a clean cloth (do not use the same cloth between lambs as infection can spread)
SCABBY MOUTH	<ul style="list-style-type: none"> Crusts form on the lips, nose and ears 	<ul style="list-style-type: none"> Spray with Aerotet purple spray (or iodine) Wear gloves while handling animals as humans can also be infected

INFECTIOUS AGENTS

INFECTIOUS AGENT	POSSIBLE SYMPTOMS	RISK
PNEUMONIA	<ul style="list-style-type: none">• Animal will appear hunched• Droopy ears and dull eyes• Breathing is laboured and short	<ul style="list-style-type: none">• Isolate the animal as pneumonia may be infectious• Treat with antibiotics and anti-inflammatories as directed by your veterinarian• Provide electrolytes in case of dehydration
ENTROPION	<ul style="list-style-type: none">• Either the lower eyelid or both eyelids will be rolled in causing redness and weeping	<ul style="list-style-type: none">• Roll eyelid out• Pinch the lower eyelid firmly to cause swelling• If this is unsuccessful talk to a vet re. injecting 0.1mL of saline solution into the lower lid• If the eye is cloudy, treat with Eye Ointment



REHYDRATION DURING SCOURS

Lambs & kid goats suffering from scours lose fluids and salts and don't absorb the sugars they need for energy. This can cause alarming weight loss and dehydration. Therefore, lost fluids and salts must be replaced as soon possible to maintain energy.

- Feeding a good quality oral electrolyte (such as Novolyte - refer to page 24), at therapeutic levels during the diarrhoea and recovery period, is the most efficient way to ensure optimum health
- Oral electrolytes are lower in energy than milk, so milk feeding should be continued during the scouring period
- Allow at least 2 hours between feeding milk and electrolytes as the electrolytes can interfere with milk curding in the stomach

SYMPTOMS	TREATMENT:
<ul style="list-style-type: none">• Hunched over with a hollow stomach and prominent hip bones• When pinched, skin will not relax back to normal quickly	<ul style="list-style-type: none">• Feed electrolyte as advised by the manufacturer (Novolyte - refer to page 24)• Make the lamb/kid goat identifiable so it can be retrained onto teat• Tube feed if lamb/kid goat refuses to suckle electrolytes



BLOAT IN LAMBS AND KID GOATS

Abomasal bloat is caused by a build-up of bacteria in the stomach (abomasum). *Clostridium perfringens* type A and species of *Sarcina* bacteria have been found in the stomachs of affected animals.

The sugars found in the milk ferment as the bacteria multiply, creating excess gas production. Also, the stomach becomes more acidic which is damaging to good bacteria. Bloat occurs because the gas cannot escape the abomasum. Sadly, death is rapid and unpleasant.

Lambs and kid goats with abomasal bloat will have a swollen belly and will be dull and lethargic. Abdominal pain (colic) and teeth grinding (sign of pain) is common. Onset can be rapid, within 30 minutes of feeding and sometimes death is the first sign (i.e. found dead).



Risk factors

- Occurs most commonly at 2-4 weeks of age
- Overfeeding (larger quantities than recommended) or infrequent milk feeding e.g. twice daily
- Incorrect mixing ratios of the milk replacer. Mix according to label instructions as diluted milk can cause lambs to gorge, especially on automatic feeders
- Feeding milk that is too hot or cold. Milk replacer should be fed at 38°C. When *Sarcina* bacteria are present feeding cold milk can help.
- Feeding too rapidly (e.g. when teats are damaged or have a large hole)
- Poor hygiene (e.g. when bottles/teats and other milk feeding equipment include automatic feeder hoses are not kept clean). Regardless of milk feeding system, good sanitation is a must for all equipment.
- Cheap or poor-quality milk replacers (milk replacers based on milk proteins - not plant based proteins - are recommended as the protein in skim milk (casein) is slowly released vs. the protein in whey which is fermented more rapidly)
- Clostridial bacteria have been implicated in abomasal bloat so vaccination for clostridial perfringens type C & D is recommended (based on US literature).

Tips for preventing bloat

- Always follow good hygiene practices
- Avoid overfeeding
- Add probiotics, ideally from a quality probiotic supplement such as Biosupport (refer to page 25), to the milk.
- Milk can also be yoghurtised by adding one packet of probiotic natural yoghurt powder to 10L of warm milk. Keep the mix in a bucket with a lid at 38°C (e.g. in hot water cupboard) until the mixture thickens, and then keep in the fridge for up to 7 days. Add this mix to the milk at a ratio of 1:7 (1-part yoghurt to 7-parts milk) and feed cold (room temperature). Yoghurt milk should not be introduced until after 7 days of age.

TREATING ABOMASAL BLOAT:

- Dissolve as much baking soda as possible in 10mL of water and administer orally (e.g. with a syringe). This helps to neutralize the acid
- Deflation and de-rotation of the abomasum could be attempted by your vet by piercing the abomasum with a needle under local anesthetic
- Contact your vet for further advice

Prevention is the best medicine, as it is estimated that 75-100% of cases die!



PRODUCT RANGE

NZAGBIZ

The NZAgbiz milk replacer range has been designed for young animals being reared in New Zealand conditions from carefully selected local ingredients, most of which are sourced from Fonterra. Once formulated, all products are thoroughly tested to ensure they meet our high-quality standards before entering the marketplace.

“WE ARE FOCUSED ON PROVIDING TRUSTED NUTRITION FOR YOUNG ANIMALS TO THRIVE”

Each product has been carefully designed, for the appropriate species and a specific purpose, by our nutritional experts and is backed by reputable scientific research.

With NZAgbiz you can be sure your young animals are receiving optimal nutrition. From ingredients to formulations, manufacturing to testing, NZAgbiz high standards are never compromised.

That's the NZAgbiz difference

COLOSTRUM

Lambs and kid goats are born with an immature digestive system and with no ability to fight against disease-causing organisms. This means that lambs and kid goats depend totally on colostrum for immune protection in the first 6 weeks of life. Therefore, it is of utmost importance that lambs and kid goats receive plenty of high-quality colostrum right after birth.

Lambs and kid goats should be fed at least 15% of their body weight in good quality (day 1) colostrum or Jumpstart within the first 12 hours after birth. In nature, a mix of colostrum and milk feeding would naturally be continued until 4 days after birth. When hand rearing this can be mimicked by ensuring the lamb or kid goat has received colostrum (day 1-2) and then “transition milk” (day 3-4) before a milk replacer is introduced.



JUMPSTART



TYPICAL ANALYSIS

Total Protein	43%
Immunoglobulin G	9%
Fat	27%
Lactose	24%
Minerals	6%

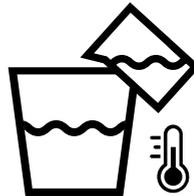
Jumpstart Full Cream Colostrum is a replacement colostrum powder designed as a natural supplement for new-born animals. It provides IgG antibodies that are essential to form the immune system of young animals.

- Contains 9% Immunoglobulins (IgG's) which are the initial building blocks of health and immunity in ruminants.
- Contains vital growth performance nutrients Vitamin A, E and Niacin
- Soluble, good mixability and curd
- Made from high-casein protein and high-fat cream powder
- Formulated as a complete first feed, meaning no mixing with milk is required

MIXING RATE



130g of Jumpstart



made up to 1L
with warm water
(approx. 38°C).

LAMB AND KID GOAT MILK REPLACERS

Following the colostrum period, the infant animal should be fed a milk replacer designed for that species. Fortunately, research has shown that infant animals can thrive on a good quality milk replacer.

Types of milk replacer

It must be emphasized that whole milk consists of two important types of proteins - caseins and whey proteins. Caseins are the large protein complexes that form a curd and are needed to make cheese curds. Whey proteins, on the other hand, are small proteins in milk that are released in whey during cheese making.

- A Whole Milk Powder (WMP) based milk replacer, such as Anlamb, contains a nutrient profile almost identical to raw whole milk, with a high milk casein component. It also provides milk fat as the primary fat source - milk fat is the only fat that contains butyrate, which is important for rumen development.
- Whey-based milk replacers contain only whey proteins (no caseins) and is therefore non curdling. The fat is usually a mixture of cheaper plant oils.



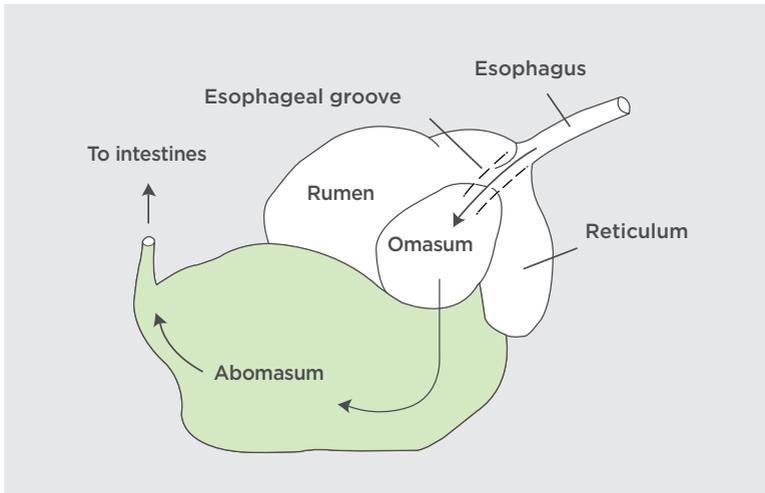
No Curd



Good Curd

Why is curding so important?

The natural way an infant ruminant digests milk is by having it curd in the abomasum – the ruminant’s fourth stomach. When an infant ruminant drinks milk or milk replacer, it bypasses the rumen and enters the abomasum. Here it is split into whey and casein which curds by natural rennet and enzymes. Whey is a watery substance that is quickly passed through the intestines and digested whereas the curd is a solid, yoghurt-like substance that stays in the abomasum and is digested slowly over time.



Scientific research has demonstrated that milk replacers made from whole milk powder, with no vegetable protein added, compared to a milk replacer containing whey and vegetable proteins can;

- Increase growth rates
- Reduce infections and antibiotic treatment

McCoard SA, Ryrie J, MacDonald T, Hea SY, Khan MA, Stevens D. Growth and health of lambs artificially reared with casein- or whey-based milk replacer. International Symposium on Ruminant Physiology, 3-6 September 2019, Leipzig, Germany (poster presentation).

ANLAMB



TYPICAL ANALYSIS

Protein	26%
Fat	26%
Lactose	38%
Moisture	3.5%
Minerals	6.5%

Anlamb is specifically formulated from New Zealand-sourced milk powder to supply lambs and kid goats with the nutritional requirements for optimal growth and development.

As lambs and kid goats are often difficult to hand-rear, they require the finest-quality raw materials for growth.

- Suitable from day 4 through to weaning*
- Nutrient profile almost identical to raw whole milk, providing lambs and kid goats with the very best start to life
- 26% protein primarily from NZ sourced whole milk powder, no added vegetable protein, providing essential nutrition for growth
- 26% fat from dairy sources, the only fat that contains butyrate, which is important for rumen development

- High casein component for a strong curd, like nature intended, for initial digestion in the stomach and improved nutrient supply & uptake
- Contains essential vitamins and minerals required for early growth and development
- Soluble and easy to mix
- Contains no Coccidiostat so is safe for all label species

*can be used in conjunction with Jumpstart Full Cream Colostrum (Refer to page 19) from day 2-4, if good-quality colostrum is not available.

Mixing rate varies by infant animal species.

Refer to the table on page 28 for further information on feeding guidelines.

ANKID



TYPICAL ANALYSIS

Protein	22%
Fat	24%
Total Carbohydrate	44.2%
Moisture	2.8%
Ash	6.8%
Fibre	0.2%

Denkavit specialists have used their extensive knowledge and experience in young animal nutrition to develop this balanced product. They have also succeeded in combining a great flavor with outstanding growth results and a high degree of safety in their products.

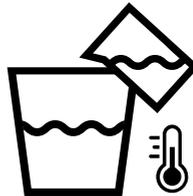
Ankid is dairy based milk replacer with added vitamins and minerals to enhance vitality. Besides this, Ankid contains several health supportive ingredients, like an organic acid, essential oils from natural oregano and prebiotics, all to enhance animal performance.

- Special blend of dairy proteins
- Specially developed to fit demands of kid goats – highly palatable
- Prime quality dairy components
- High degree of safety
- Suitable for multiple concentrations in virtually all feeding systems

MIXING RATE



175g of Ankid



made up to 1L
with warm water
(approx. 38°C).

Refer to the table on page 28 for further information on feeding guidelines.

NOVOLYTE ELECTROLYTE



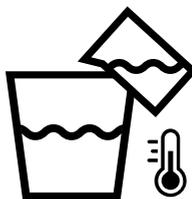
TYPICAL ANALYSIS

Energy	70kJ/100mL
Total Sugar	70% w/w
Sodium	45mg/g
Chloride	53mg/100g
Potassium	16mg/g

Scientifically formulated in conjunction with leading NZ veterinary scientists, to provide energy and a combination of essential salts to assist with calf rehydration. It contains high-grade ingredients in a dry powdered formulation that is soluble and therefore easy to mix.

- Balanced solution that contains optimal sodium levels to restore fluid and electrolyte losses
- Contains alkalising agents like acetate and propionate to help with the sodium absorption in the intestines and to correct acidosis in scouring calves, without exerting negative effects on milk clotting and emptying of the abomasum
- Has a high Strong Ion Difference (SID) which also helps the calf to recover from blood acidosis due to scours
- Supplies energy in the form of dextrose and lactose to aid rehydration and to provide an energy source to the calf

MIXING RATE



10g made up to 200mL with warm water (approx. 38-40°C).

Feed up to 5 x 200mL doses per day (max 1L/day).

For further guidance on lamb rehydration during scours refer to page 13

BIOSUPPORT PROBIOTIC

TYPICAL ANALYSIS

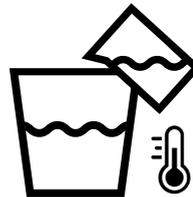
Bifidobacterium Animalis	>10 ⁹ /g
-----------------------------	---------------------



A powerful probiotic suspended in dry milk powder, designed by NZAgbiz and the Fonterra Research & Development Centre, to enhance the immune system and promote gut health of young animals.

- Aids gut health and animal well-being
- Freeze dried powder format to retain good bacteria. The good bacteria lie dormant until introduced to liquid, meaning no good bacteria degradation
- Suitable to add to liquid milk or milk replacer from new born age
- Bacterial count of one billion good bacteria per gram
- Good solubility and flow properties
- 100% dairy milk powder
- Readily digestible
- 18-month shelf life

MIXING RATE



1g/L of warm milk
(approx 38°C).



USAGE GUIDE

PRODUCT USAGE GUIDE

LAMBS	Day 1	Day 2-4	Day 5-13	Day 14-21	Day 22- weaning
Jumpstart	●	●			
Anlamb		●	●	●	●
Biosupport	●	●	●	●	●
Novolyte	●	Use when required - see page 24			

KID GOATS	Day 1	Day 2-4	Day 5-13	Day 14-21	Day 22- weaning
Jumpstart	●	●			
Ankid/ Anlamb		●	●	●	●
Biosupport	●	●	●	●	●

ANLAMB BOTTLE

Anlamb bottles are manufactured from durable recycled polyethylene and come with their own lamb teat. Feeding measures on the side of the bottle ensures that the lamb receives the correct amount of LMR from day 1 one to weaning. Anlamb bottles are available from all leading rural supply stores.



FEEDING GUIDELINES

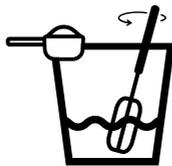
Anlamb - Lamb & kid goat

ANIMAL	LAMB			GOAT KID		
MIXING RATE	200g/L			160g/L		
Age of animal	Feeds per Day	Milk per Feed (mL)	Grams per Feed	Feeds per Day	Milk per Feed (mL)	Grams per Feed
1 day	6	As per Jumpstart instructions		6	As per Jumpstart instructions	
2-4 days	6	150mL	30g	6	150mL	24g
5-7 days	4	250mL	50g	4	250mL	40g
8-21 days	4	350mL	70g	3	450mL	72g
22 days to weaning	3	350mL	70g	2	500mL	80g



1

Measure half the volume of warm water required for feeding



2

Add the required amount of ANLAMB and mix thoroughly



3

Top up with water to full feed volume required



4

Test milk is approx. 38°C before feeding

Ankid

MIXING

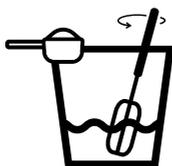
Suggested feeding rate and volume - mixing rate 175g/L

Age	Feeds per Day	Milk per Feed	Grams per Feed
1 day	6	Colostrum or as per Jumpstart instructions	
2-4 days	4	150mL	26g
5-7 days	3	200mL	35g
8-14 days	3	250mL	43g
15-21 days	3	350mL	62g
22 days to weaning	2	475mL	83g



1

Measure half the volume of warm water required for feeding



2

Add the required amount of ANKID and mix thoroughly



3

Top up with water to full feed volume required



4

Test milk is 38-40°C before feeding

CONSIDERATIONS WHEN FEEDING MILK REPLACER

- Mix milk powder prior to feeding, but not the day before as settling can occur and milk can be affected by bacterial growth
- Store opened bags of milk powder in a dry, cool, rodent-free environment to avoid contamination or spoiling
- Mix powder thoroughly in fresh, clean, warm water
- Use a digital thermometer to ensure correct temperatures (38-40°C)
- Warm milk should be used as energy will be consumed heating cold milk up to blood temperature for digestion
- Rinse and clean all equipment after every feed and disinfect equipment regularly
- Ensure teats are not damaged, to minimise rapid consumption of milk, or blocked causing feeding issues and bullying within the group
- Increase feeding levels in stages, making changes over time to allow young animals to adjust and to avoid health issues such as nutritional scours
- To avoid digestive troubles, consistency of feeding is important, in terms of time, concentration and daily allowance
- When using automatic feeders ensure they are set up correctly to avoid over feeding, unless a true ad-lib system is adapted. Ensure they are cleaned and calibrated weekly.
- NZAgbiz milk replacers can be used in automatic feeders, including on-demand (ad-lib) feeders and those with controlled intakes
- Ensure that clean water and good-quality solid feed is always available (e.g. concentrate starter diets, forage-based starter diets, good-quality pasture)



FURTHER READING

1. McCoard SA, Cristobal-Carballo O, Knol FW, Heiser A, Khan MA, Hennes N, Johnstone P, Lewis S, Stevens DR. Impact of early weaning on small intestine, metabolic, immune and endocrine system development, growth and body composition in artificially reared lambs. *J. Anim. Sci.* 98(1). Doi:10.1093/jas/skz356 (2020).
2. Cristobal Carballo O, Khan MA, Knol FW, Lewis SJ, Stevens DR, Laven RA, McCoard S. Impact of weaning age on rumen development in artificially reared lambs. *J. Anim. Sci.* 97:3498-3510 (2019).
3. Stevens D, Knol FW, Nieper BA & McCoard SA. Post-weaning performance of East Friesian cross ewe lambs grazing ryegrass or plantain-based pastures after rearing on two contrasting diets. *J. NZ Grasslands* 79, 49-54 (2017).
4. McCoard S, Sales F & Sciascia Q. Invited review: Impact of specific nutrient interventions during mid-to-late gestation on physiological traits important for survival of multiple-born lambs. *Animal* 11, 1727-1736 (2017).
5. Jensen AC, Khan MA, Knol FW, Peterson SW, Morel PCH, McKenzie C, Stevens DR, McCoard SA. 2017. How does feeding meal affect growth of artificially reared East Friesian-cross dairy lambs? *Proceedings of the New Zealand Society of Animal Production* 77:13-17
6. Nieper BA, Khan MA, Ganesh S, Knol FW, Peterson SW, Stafford KJ, Stevens DR, McCoard SA. 2017. The effects of early access to meal on the behaviour of artificially reared dairy lambs. *Proceedings of the New Zealand Society of Animal Production* 77: 18-22.
7. Steele MA, Penner GB, Chaucheyrae-Durand F, Guan LL. 2016. Development and physiology of the rumen and the lower gut: Targets for improving gut health. *J. Dairy Sci.* 99:4955-4966.

CONTACT US

For nutritional and technical advice or sales enquiries, talk to us today.

NZAgbiz Customer Service Centre

T: 0800 809 011

E: nzagbiz@fonterra.com



NZAGBIZ

NZAGBIZ LIMITED | 0800 809 011 | NZAGBIZ.COM

NZAgbiz Limited, PO Box 844, Hamilton 3240