



Sheep & Goat Briefs

The latest Information
on Sheep & Goat Nutrition



ISF Products for Sheep & Goats

By Pedro Nogueira

Introduction

The Sheep and Goat industry is a growing sector in animal production. Genetic improvements of these species have resulted in larger mature sizes, greater lamb and kid numbers, and higher milk production. It is important that nutrition follow this trend of higher production animals. ISF products for sheep and goats were designed with this in mind, providing animals with optimum levels of vitamins and minerals. In addition, the ISF line of special feed additives can be combined with the base products whenever a special need should arise, providing the customer with a complete line of sheep and goat feeding options. Herbs and Spices flavoring have been included in all the ISF products with the name Herbageum to help improve palatability and rumination.

Small ruminants require energy, protein, vitamins, minerals, fibre and water. Energy (calories) is usually the most limiting nutrient. Deficiencies, excesses, and imbalances of vitamins and minerals can limit animal performance and lead to various health problems. Fibre (bulk) is necessary to maintain a healthy rumen and prevent digestive upsets. Water is the cheapest feed ingredient, yet often the most neglected. Dry matter intake - as a general rule of thumb, sheep and goats will consume 2 to 4 percent of their body weight on a dry matter basis in feed. The exact percentage varies according to the size (weight) of the animal, with smaller animals needing a higher intake (percentage-wise) to maintain their weight. It's important to maximize dry matter intake. To do this we must pay attention to some very important aspects, like:



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Inside this Issue...

ISF PRODUCTS FOR SHEEP & GOATS

By: Pedro Nogueira

The right combination for a healthy herd...



Yeastpro

ISF Yeastpro is a highly specialized supplement containing optimum levels of yeast culture, Organic Zinc, Niacin, and Vitamin E. Other trace minerals, fat soluble vitamins, B-vitamins, sugars and herbs and spices flavouring round out this excellent product for sheep & goats.

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- Supply good quality forage
- If it is not a TMR (Total Mixed Ration) diet, feed the forages first followed by the grain
- Feed the grain in small quantities throughout the day. If possible only 200-300 grams/meal or less
- Always have free choice forage, unless you use a TMR ration
- Always change diets and feeds slowly
- Don't forget to have good quality water available at all times

It is essential that all lambs and kids drink colostrum; It's their life insurance. Feed around 0.25 L in the first 2 hours of life.

Don't forget to prepare the energy reserves of the animals for breeding. This is called "flushing" and consists of an increase in energy 3 weeks before until 3 weeks after breeding time. This can be done with extra grain (200 to 400 grams/hd/d). The objective of this increase before breeding is to have more eggs and hence more kids and lambs born. The reason for continuing to increase energy after breeding is to help increase the chances of the survival of a larger number of those eggs. If the animals are already fat there is no need for flushing.

There are many disease conditions for which sheep and goats may need to be vaccinated. Most veterinarians recommend flocks should be vaccinated at the very least for clostridial diseases, specifically enterotoxaemia (type C and D) and tetanus. Talk to your veterinarian about a good vaccination program.

Sheep and goats are very susceptible to worms due to their close grazing behavior and slow-to-develop immunity. Goats are more susceptible than sheep when forced to graze (versus browse). The parasites that cause the most damage to sheep and goats are stomach worms and coccidia. The most important time to deworm a sheep or goat is prior to (or at the time of) parturition. When a ewe/doe lactates, her immunity to parasites is compromised. She is also the primary source of infection to her newborn lambs/kids. Deworming ewes/does prior to turning them out to spring pasture is also a good idea because it helps to reduce the contamination of the pasture, as the worms resume their life cycle with the onset of good weather.

Don't graze sheep on land fertilized with swine manure. Swine manure can have a very high copper content. Some of this copper will end up in the forage and will be ingested by the sheep potentially causing toxicity problems.

Feeding Ewes and Does according to production phase

We can consider that there are 3 different production phases:

1. **From lambing/kidding until the end of the 2nd month of lactation** – this is the most demanding phase in terms of nutrients. The animals mobilize their body reserves and lose weight. They must have good quality forages during this phase and the amount of grain should be increased gradually until the maximum amount



allowed. If your forages are not very good and you have to rely more on grain, don't grind the cereals or grind them very coarsely, and/or replace a part of it with some non forage fibre feeds, like beet pulp or soyhulls. Remember that small ruminants are very sensitive to acidosis and digestive problems, so don't overfeed grain. Forages can be dry or ensiled, but silages must be of high quality to avoid problems with *Listeria* (see more about this ahead).

During this phase ewes and does should eat 30 grams/hd/day of **ISF Sheep Specific** or **ISF Goat Specific**, respectively. These minerals were designed having high milk producing animals in mind and will help them milk better and maintain good health. They have salt so you don't need to have free choice salt or be concerned with adding extra salt.

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Four other ISF Specialty Products can be employed during this phase along with the mineral mentioned above, they are:

- * **ISF Yeastpro** – The nutrients and ingredients in **Yeastpro** make it the ideal supplementation for this phase of production. **Yeastpro** has yeast, to help maintain a better rumen environment, as well as organic zinc and niacin and is also reinforced with vitamins. **ISF Yeastpro** should be fed at 25 to 50 grams/hd/day.
- * **ISF Superlac** – If you have really high producing animals or your animals are losing too much body condition and you can't increase the amount of grain to avoid acidosis, **Superlac** is the product you should use. It has the same ingredients as **Yeastpro** plus a source of high energy by-pass vegetable fat. By-pass fat not only provides energy but adding by-pass fat to sheep and goat diets may promote an increase in milk butterfat. This is especially true in the beginning of lactation. **Superlac** should be fed at 100 to 200 grams/hd/day. This product requires a period of adaptation due to its different smell and taste. Plan to adapt the animals for about 10 days. If you feed with a TMR, add small quantities of **Superlac** to the TMR every day until the desired amount. For example if you plan to feed 200 grams/hd/day then start with 20 grams/hd/day and add 20 grams more each day during 10 days. If you feed during milking time, in the parlour, do the same as above. In this case you can also leave a bag of **Superlac** open in the parlour for some days before you start feeding it.
- * **ISF Bufferpac** – Whenever ewes and does are eating a good amount of grain there is the risk of digestive problems, **Bufferpac** may help prevent this problem. It contains a combination of buffers designed for high production animals. **Bufferpac** should be fed between 40 to 60 grams/hd/day (you can use it in combination with **Yeastpro** or **Superlac**).
- * **ISF Rumen By-Pass Pack** - This new product is a 50% CP product, with a combination of several sources of by-pass protein, mainly high quality fish meal. The interest of this product is twofold: on one hand it is a source of high quality protein, which can be used to balance diets with poor quality protein sources (example: "caramelized" hay, where part of the protein is unavailable to the animal, wet haylage, where part of the protein may be in a very soluble form, similar to urea). Dairy animals, in particular, normally have a positive response to quality by-pass protein, in terms of improved milk production. On the other hand, research has shown that the type of fat present in fish meal may have positive effects in reproductive function. This can increase the number of eggs produced and result in more lambs or kids per ewe/doe. This product is recommended for high production animals, for example during the first 2 months of lactation and also during breeding time, as part of the flushing program. It can be fed at 50 to 100 grams/hd/day.

2. **From the 3rd month of lactation until the last 6 weeks of gestation** – after the peak, production starts to decline. As such, requirements are lower in this phase. It is time to recover body condition lost in the beginning of lactation. As production drops you should increase forage and reduce the amount of grain. Also if you have lower quality forage (by lower we mean with less energy and protein, not moldy) you can use it now, saving the best forages for the first phase and the close-up animals. You can also reduce the amount of the mineral **ISF Sheep Specific** or **Goat Specific** to 20 grams/hd/day, unless the animals have any source of stress (heat, moldy forage, overcrowded, etc.). In that case continue feeding the 30 grams/hd/day as in the first phase. This will help maintain a strong immune system. You can stop using the Specialty Products referred on the first phase, or use it on individual animals with special needs or still with high production.



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3. The last 6 weeks of gestation – The requirements increase a lot again during this phase due to fetal growth. Dry matter intake may drop as much as 20% hence the importance of having good forage during this phase. Depending on the quality of the forages and the body condition of the animals, you should start feeding from 200 to 600 grams of grain/hd/day 6 weeks before lambing/kidding (remembering it is best not to feed more than 200-300 grams per meal or less). The quantity of grain should be increased until it reaches around 50 % of the quantity they'll eat at peak lactation and you should start feeding them the same feeds as the ones they will eat after lambing/kidding, to adapt the animals to the new tastes and smells and the rumen bugs to digest the different feeds. Pay attention to excessive body condition or thin animals. Both conditions can predispose the animals to pregnancy toxemia or ketosis. Separate animals based on body condition and feed to avoid getting them too fat or too thin.

Milk production after lambing/kidding is greatly dependent on the dry matter intake at lambing/kidding. The objective in late gestation should be to keep a good volume of forage in the rumen. Save good quality forages for this phase. Studies show that the intake of an extra 100 grams of dry matter per day in late gestation corresponds to an extra 120 grams of milk after lambing/kidding.

You should feed the **ISF Sheep Specific** or **Goat Specific** at 15 grams/hd/day on the first phase of the dry period and increase to 20 grams during the last 6 weeks of gestation. At this time you can also start supplying **Yeastpro** at 50 grams/hd/day to help the rumen adapt to the higher amount of grain and to help reinforce the immune system. If White Muscle Disease has been a problem your Veterinarian may suggest increasing the levels of vitamin E and selenium in the dam's diets. This could be done with **ISF Vitamin E & Selenium** at 17.5 grams/hd/day. All the selenium in this product is in a highly available organic form. Your Veterinary is the best person to help you with this issue.

Nutritional diseases in sheep and goat production

The following table shows some of the most common nutritional diseases in sheep and goats and some preventive measures to help avoid them.

Problem	Causes	Preventive measures
Low milk butterfat	Lack of structure in the diet; too much grain at each feeding; grain being fed before forages; incorrect drainage of the udder.	Feed enough effective fibre in the diet; distribute grain in several fractions; give the forage first and then the grain; milk completely. Feed ISF Superlac .
Pregnancy toxemia or ketosis	Energy deficiency before lambing/kidding; stress (long walks, grouping).	Supply adequate energy; avoid sudden changes in the ration; avoid stress.
White muscle disease	Ration deficient in selenium and vitamin E; ration too high in unsaturated fatty acids (unsaturated oils like corn or soya oil, or young grass).	Supply selenium and vitamin E to the ewes/does through mineral supplementation with ISF Vitamin E & Selenium , or through injection, according to Veterinary advice.
Enterotoxaemia (Overeating disease)	Disease caused by bacteria (<i>Clostridium perfringens</i>); diet too rich in high energy feeds (young grass, grain, milk); sudden change of the diet; stress (cold, grouping animals, veterinary interventions).	Avoid excessive feeding; supply hay with young grass; avoid sudden changes in the ration; avoid stress; review vaccination program with veterinarian.
Listeriosis	Bad quality silages (pH > 5, wet).	Feed only high quality silage. Use ISF Silo Guard® II to help preserve the quality of your forages.
Colostrum deficiency	A major cause of death in newborns is starvation; lack of ingestion of adequate quantity and quality of colostrum.	Feed enough colostrum to newborns; milk out and tube feed, if necessary; cow colostrum can be used for newborns.

DRYING POWDER FOR ANIMAL HOUSING



Using drySTART on André & Sylvia Turcot's Dairy Milking Goat farm in St Wenceslas, Quebec.

André & Sylvia run a 270 head dairy milking goat operation. They are able to increase production to 320 goats during the Spring. At this time, they average 2.4 litres of milk per goat, an average fat content of 4.2%, and a protein rate of 3.58%. André & Sylvia started using drySTART on their farm in November, 2008. Here's what they have to say:

"We strive to maintain a healthy environment on our farm, especially in the nursery pens. The kids are more susceptible to humidity, poor air quality and the accumulation of ammonia. During the winter, it is often difficult to maintain a healthy environment because the buildings cannot be ventilated as well as in the summer months. We started using drySTART to see if we could decrease the ammonia levels and keep the pens dryer. We are very pleased with the results. We apply drySTART three times a week in the nursery pens and have noticed a real improvement in air quality. drySTART helps control humidity and ammonia. It leaves a pleasant odour in the air, and above all, we notice that it helps maintain a healthy environment for our animals."

Sylvia & André Turcot
April 9, 2009



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the **START** **line**™

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Feeding the replacement herd

The objective of a good replacement program is to have a uniform growth and development of the lamb ewes and kids so we can have the first lambing/kidding at around 12 to 14 months of age. This should start from the beginning with enough colostrum being fed to the animals, starting in the first 2 hours of life and through out the first 24 hours. To prevent spreading CAEV (Caprine Arthritis and Encephalitis) colostrum should be heated at 56°C for 1 hour using cow's milk, colostrum is also acceptable if it is heat treated and pasteurized to prevent other neonatal infections.

For dairy animals (Saanen, Alpines), we should aim for a strong average daily gain (ADG) from 0 to 4 months of age, especially during the first 2 months (180 to 200 grams/hd/day). From 2 to 4 months, ADG should be 150 grams/day. After this age, ADG should be reduced to about 100 to 110 grams/hd/day until breeding and continue with a lower ADG (100 grams/hd/day) until lambing/kidding.

Although it is difficult to indicate a precise weight at weaning, because it varies with breeds, lamb ewes and kids should have a minimum weight at weaning of about 15 kg.

Ideally the animals should be weighed at 3 key periods:

- birth
- weaning
- before breeding

The results of these weights can then be compared to standard growth curves. These weights are important to:

- adapt nutrition if needed
- make these decisions: cull, breeding, weaning ...

For example, birth weights allow us to be aware of the difference in weights between animals and are also a good indicator of the nutrition of the mothers during the last weeks of gestation. Weight at 50 days is also important because it helps to decide about weaning and also helps in creating uniform lots of animals. Weighing also helps to calculate average daily gains. These numbers can help you in decisions such as culling females that had low ADG during the milking phase.

One quick note about Coccidiosis: Coccidiosis is the most common cause of diarrhea in lambs and kids between 3 weeks and 5 months of age. This is particularly true if the animals are housed in confinement. This parasitic disease is most likely to affect young animals shortly after weaning because of the stress of being suddenly separated from their mothers. Talk to your veterinarian about the best way to control this disease and what medications should be used if needed. Good husbandry practices are the best preventive measures against coccidiosis. Regular removal of manure and wasted feed, not feeding on the ground, designing feeders and water systems that minimize fecal contamination, providing a clean source of water, cleaning water tanks and feeders regularly, making sure that watering systems do not leak and that sufficient sunlight enter buildings are some examples of those practices. During winter it can be particularly difficult to keep bedding clean and dry. As a Kenpal customer you can use **drySTART™** to help dry the bedding area. **drySTART™** is a drying powder that can be applied on the floors. It can help reduce moisture and ammonia and potentially provide a healthier environment to these young animals.

During growth we should use **ISF Sheep Specific** or **Goat Specific** for ewe lambs and kids just varying the amount according to their weight. The recommended feeding rates are as follows:

From weaning until 20 kg BW (Body Weight):	5 grams / hd / day
From 20 kg until 30 kg BW:	10 grams / hd / day
From 30 kg until 40 kg BW:	15 grams / hd / day

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Feedlot Fattening Lambs and Kids

If the objective of the farm is feedlot fattening animals, ISF has now specific feedlot minerals for this purpose:

ISF Lamb Feedlot and **ISF Kid Feedlot**. These minerals are adapted to the typical high grain finishing diets, mainly to prevent the incidence of urinary calculi or kidney stones (also called Water Belly). The high calcium content of these minerals helps increase the ratio between calcium and phosphorus. On the other hand, the high content in salt promotes higher water intakes. This helps to dilute and eliminate potential stones that lodge in the urinary tract and prevent normal urination.

Another problem that may occur with high grain diets and some types of feeds high in sulphur (for example corn distiller's grains) is polioencephalomalacia (polio, cerebrocortical necrosis, circling disease). This is a neurological disease that is characterized by a variety of symptoms, like dullness, star gazing, blindness, loss of motor coordination, paddling and muscle tremors or seizures. It is caused by a Vitamin B1 (thiamine) deficiency. **ISF Lamb and Kid Feedlot** minerals have thiamine in its composition, to help prevent this condition.



Forage Quality

One last word about forage quality. Sheep and goat diets should be based on high quality forages. Many producers fear feeding ensiled feeds to these animals due to the possibility of listeriosis. Listeriosis is a bacterial disease with symptoms that include depression (inactivity), weakness, paralysis of the tongue and jaw, blindness and drooling. Animals lack co-ordination, lose their appetite, walk in circles and push their heads against fences and other objects. Listeriosis is associated with wet silages and/or moldy silages and/or haylage or balage. The bottom line is that to feed ensiled feeds to sheep and goats you have to do a good job of managing these feeds. The advantage is that you will have more flexibility in forage harvesting than with hay and it also gives you the potential to harvest higher quality forages. For example corn silage can be a very good source of energy for high producing animals. Along with good management practices when doing silage (cut fine, pack well, cover as soon as possible, etc) you may use **Silo Guard® II** to help keeping forage quality and retain more dry matter. **Silo Guard® II** can be used for hay, haylage and corn silage, and is available in a ready-to-use form, dry or liquid.

Summary





Nutrition is one of the keys to raising healthy animals. Well-fed livestock are more resistant to disease and parasites. It is important to feed balanced diets, always make gradual feeding changes, especially when increasing the amount of grain in the ration. Minerals and vitamins are an important part of this balance. ISF's line of products can help you produce healthier and more productive animals.

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Josef Durrer started milking 100 Saanen goats in 1999. His farm, located in Notre Dame de Lourdes, is close to Quebec City. Today he milks 270 goats with an average production of 840 L per lactation. Because he lives in a relatively cold area for corn production, Josef has concentrated his efforts on producing high quality hay, dry and wrapped (at around 25 to 30% moisture). He knows that goats like good feed, so he developed his own seed mixtures to achieve high quality hay. This is the only forage the goats eat. They also get a complete feed in the parlour. Replacements kids only get 2nd cut hay. Their development is good and they are kidding around at 12 to 13 months of age.

In order to keep the quality of his hay, Josef started using Liquid Silo Guard II in the year 2000, and he has not stopped ever since. Here is his opinion: "I use Silo Guard II in my hay, dry and wrapped, because it is a guarantee of keeping its quality. Silo Guard II helps me by obtaining quality hay for my goats, without mould. I believe that I get more milk per goat due to Silo Guard II use."

Josef Durrer
Nortre Dame De Lourdes, Québec



WE APPRECIATE YOUR BUSINESS



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