

## Care at Calving

### **Calving Care**

*Trouble-free calving starts before drying off, not just before calving. Cows should be in a condition score (CS) of 5 (1 to 10 scale) or better at calving. First calvers should be well above CS 5. If cows are too thin and go down for any reason, they can be difficult to get up again, and thin cows don't produce as well, don't conceive as quickly, the eggs they produce just after calving are weaker so less likely to hold at conception, and their production and fat tests are lower. Thin first calvers have difficulty competing with mature cows.*

*If mature cows are too fat, they are more inclined to go down with milk fever, and sometimes take a long time calving. Fat cows and those fed too well in the last three weeks before calving can have bigger calves, with the associated calving difficulties, but this normally applies only to excessively over-conditioned cows.*

*It is difficult and expensive to add condition during winter, so cows being milked seasonally should be dried off before they get too much below the required calving condition, with the aim of gradually increasing their condition until calving. Cows on a declining plane of nutrition at calving will be going against nature and are more likely to have problems. Autumn and early winter limiting of pasture, and buying the most economic feed, may be necessary to achieve a rising CS prior to calving.*

### **Cast Animals**

*Animals heavily in calf can get cast very easily. When we bought our first farm the pastures were all as rough as .... Quite often cows would get cast in a hole so we had to patrol the herd regularly. After cropping and regrassing the paddocks in a smooth condition the problem almost disappeared. Sheep can do the same thing. Standing up for a large four legged animal is not easy.*

*as it cast problems, bloat (most animals blow soon after death), hunger including too little feed over a period, unfit, too thin, over-fat, lack of sodium (which aggravates hypothermia) and other mineral shortages, lack of shelter, or was it some other problem you have, or just a coincidence? Some cows and people just die, but stress can bring it on sooner.*

*Your description could mean that it was in a hole.*

*In one of our cyclones (Bola in 1987 odd - we don't get many in winter, but have had two this summer), cows out all night in metre deep water died when the temperature was well above freezing, possibly 8°C.*

*I'm sure that had they been getting adequate minerals, especially salt, few would have died in one night. Salt helps our body in both cold and hot weather. If one suddenly goes to the tropics one can feel worn out, faint or even sick. One salt tablet and in ten minutes one feels better.*

*In extreme cold, exercise is also important, as it is for all cows pre-calving (anti-natal classes!).*

*Many old timers here know that cows wintered on hills where they have to work for their pasture calve with fewer problems than those on small breaks of long grass.*

### **Assisting Calving**

*If an animal hasn't calved within half an hour of trying, check to see if the newborn (or two) is coming back end first, has a leg or legs folded back, or has some other complication. Use thin gloves and a disinfectant. Wash thoroughly afterwards.*

*If unsuccessful in finding and correcting the problem within minutes, phone for your vet. It is very difficult for a vet to help a worn out over-tired animal to give birth and the longer any problem is left, the harder it is to fix.*

*Fit healthy animals give birth much more easily than over-fat or over-thin animals or barned ones which have had no exercise.*

*It is natural for cows to eat their placenta although not all do so. Some people say that it*

contains items reported to be good for the newly calved animal, others say that it would be better if it were removed as some cows can suffer from digestive problems because of the undigested lump of tissue inside them and some report that it is often spat out several days later. It has been suggested that it is also a cleaning up process to reduce scents attracting predators. Where there are infections it is important that it is disposed of by the cow and the farmer who should clean that are by inverting the polluted sod.

### ***Increase Rumen Size***

Feeding extra hay for a week or more before calving increases the rumen size and helps allow the cow take in more pasture after calving, when it needs maximum intake to produce heavily and to reduce condition loss.

If this is done, then keep feeding hay after calving to allow a gradual change to pasture over about 10 days to avoid digestive upsets. Don't try to increase the rumen size by feeding extra pasture, because milk fever and very tight udders and sometimes mastitis, can occur. Where cows bag up excessively before calving, it pays to ease the udder by removing a little milk, but not so much as to cause milk fever. In countries where pre-feeding is heavy, farmers have found that it is best not to milk cows out fully for up to a week after calving.

### ***Healthy Calves***

Some calves die within the first month of being born because of malnutrition before birth. This covers not just adequate feed, but good quality feed, with all the necessary minerals. The best calves are those born from cows which have had soluble mineral mixes. Dairy farmers who use products like this for the first time can't get over how healthy their calves are at birth, and how much sheen their skins have, with colours radiating, rather than being dull and lustreless.

Cows which have been on facial eczema zinc treatment since the beginning of the year are likely to be very low in copper, so should therefore have their copper supplemented, by adding dissolved Solminix to the drinking water, hay or silage.

When cows are on maintenance diets of about 6 kg of dry matter/cow/day, they receive only about 0.07 grams of copper/day, when they really need much more, to build up the levels in their own liver, and that of the calf. There is very little copper in milk, so newborn calves don't get much until they start eating. For this reason, calves also benefit when given 2 grams of a good soluble mineral mix each per day for the first few weeks, increasing it to 4 grams at a month, and 10 grams at one year. If your pasture and/or water levels of manganese are high, and many in the Waikato are, avoid feeding a mineral mix containing manganese.

### ***Mastitis at Calving***

If calving paddocks have been used for many years, and the herd has more than 2% of mastitis at calving or soon after, then changing the calving paddock may reduce the mastitis.

### ***Magnesium Before Calving***

Another important point is to supplement magnesium from about three weeks before calving, at the rates recommended for your area. Some magnesium oxides are not as good as others, so make sure that you are feeding a top quality one (55% magnesium), which is finely ground and without impurities.

If these things are done, and your pasture mineral balance is reasonable (not too much potassium), calving should go peacefully, with no more than two or three per cent of cows going down. If your percentage is higher than this, then check everything.

Causmag should be spread on pasture, hay or silage. Sometimes cows avoid eating it, so a good idea is to give them half their magnesium in the oxide form on pasture, hay or silage, and half in the sulphate form in the drinking water. If Solminix is mixed with the Mag oxide, most animals will lick it all up, and if Solminix is added to the drinking water they won't be put off drinking because of the magnesium sulphate flavour. In all cases start magnesium a week or more

before the three weeks to accustom them to the product.

If magnesium supplementation is started too soon before calving at too high a rate, the cows then require even more for the three weeks before calving, because their system becomes inefficient at converting it. After calving, keep the magnesium going until the pasture matures, or all year if magnesium pasture levels are below 0.23% or milk production is above average. Many high producing dairy cows are supplemented with magnesium all year, at a low level, or have their cows get it by using a good soluble mineral mix with the seven most important elements, which includes magnesium.

### **Zinc Too**

Gladys Reid has pointed out that zinc depletion can develop with surprising speed at calving time, as zinc cannot be mobilised fast enough from body stores for body needs under conditions of stress (similar to calcium and magnesium in stress). Under these conditions outside sources of zinc are needed for body requirements.

It is not a case of a dietary deficiency in the true sense, as there is plenty of zinc in the bones and body tissues. It is a case of supply not immediately meeting the demands of stressful labour. She put zinc sulphate in the water troughs of the maternity paddocks, after which cows were chewing the cud right up to calving, and calves were up and sucking in no time at all.

The point needs to be made again that the crash in available zinc in the blood plasma has nothing to do with soils, fertilisers or grass. It is simply that stressful and prolonged calving increases the short term zinc needs, which cannot be mobilised from bone and other tissues fast enough. Good mineral mixes contain zinc.

### **Reducing Ketosis (Acidosis)**

Cows calving in poor condition, and those subjected to sudden diet changes, especially to low energy and low magnesium diets (poor quality sun-less pasture), have a higher risk of suffering acidosis. Anything which puts the cow off her feed can bring on an attack, especially if she is also being underfed.

Feeding 6 grams of niacin per cow per day for two weeks before calving can reduce the incidence of ketosis, and minimise the formation of fatty livers in fat cows. It is important that cows don't lose weight during the dry period, or fatty livers and metabolic problems increase.

Magnesium helps avoid ketosis by preventing the rumen pH from dropping too low, which can cause digestive upsets resulting in poor utilisation of the feed, a decrease in energy intake, and a drop in condition through malnourishment.

### **Symptoms**

The cow can appear off colour, nervous and/or shaky. To identify the cause, smell her breath. If it smells a bit like nail varnish, it is likely to be ketosis. If not it could be staggers.

### **Solutions**

Increase the feed intake, even if it means buying in good quality hay or maize meal. Feed a good quality magnesium. Some are not good, so if problems are experienced, change to a better one. Also feed high energy products like Molvinate.

Avoid overstocking and avoid using high rates of potash, which are the two biggest causes of metabolic problems.

### **First Week of Milking**

It is important for anyone to be able to come into the herd and milk without any instructions. To achieve this it is necessary to have systems relating to each cow's situation regarding colostrum and treatments. It is best to have recent calvers separate from the main milking herd to avoid the possibility of colostrum getting in the milk vat and to know how long each cow has been calved, so paint a dab on the top back left of the leg before the first afternoon

*milking, one on the top right leg before the second afternoon milking and one on the bottom of the left leg before the third afternoon milking. On the fourth afternoon paint the bottom right leg. The next morning tail paint the cows which have four dots and draft them into the milking mob.*

*Also keep records on paper and/or a white board.*

*See Animal Health-Mastitis for identifying treated cows and use the same system for footrot treated ones.*

## **Care at Calving**

### **Prior to Calving**

Trouble-free calving starts before drying off, not just before calving. Cows should be in a condition score (CS) of 5 (1 to 10 scale) or better at calving. First calvers should be well above CS 5. If cows are too thin and go down for any reason, they can be difficult to get up again, and thin cows don't produce as well, don't conceive as quickly, the eggs they produce just after calving are weaker so less likely to hold at conception, and their production and fat tests are lower. Thin first calvers have difficulty competing with mature cows.

If mature cows are too fat, they are more inclined to go down with milk fever, and sometimes take a long time calving. Fat cows and those fed too well in the last three weeks before calving can have bigger calves, with the associated calving difficulties, but this normally applies only to excessively over-conditioned cows.

It is difficult and expensive to add condition during winter, so cows being milked seasonally should be dried off before they get too much below the required calving condition, with the aim of gradually increasing their condition until calving. Cows on a declining plane of nutrition at calving will be going against nature and are more likely to have problems. Autumn and early winter rationing, and buying the most economic feed, may be necessary to achieve a rising CS at calving.

Do everything possible to feed well before and after calving because this is when the eggs from the ovary are set. Malnutrition at calving caused by hunger or sickness will reduce the size of the eggs and weaken them to the extent that they are less likely to survive after fertilisation. Also cows in condition score 5.5 (0 to 10 scale) will cycle and conceive sooner.

As well as supplementing dry cows with balanced minerals, feed should be increased slightly to have the cows on a rising plane of nutrition over the dry period for trouble free calving and good milk production. This is assuming that your cows are not already carrying too much condition. Sort the fat ones and late calvers from the thin ones and early calvers, and feed the thin and early mob better, at the expense of the fat mob.

Springers (fresheners) should be put in a better fed mob on milking type feed just before calving to avoid them going hungry because while calving the others will have eaten all the feed. Hunger at calving can create many costly problems. Feed should be available to springers for most of the day, not just for a few hours after moving the fence or feeding out.

In most areas extra magnesium needs to be fed during the whole lactation to help cows cope with heat and cold, and for a month or more before calving, so feed extra magnesium then increasing it gradually to the full rate two weeks before calving. See Elements in Soils Plants & Animals-Magnesium.

Don't feed extra calcium prior to calving or the digestive system becomes lazy and then after calving doesn't provide enough for the sudden high requirement of milk so cows can go down with milk fever. Colostrum has twice as much calcium (and most elements) as ordinary milk, so this drain on the cow's system and the requirement for milk production lowers calcium levels until the cow starts mobilising it.

### **Increase Rumen Size**

Prior to drying off the quantity of feed is reduced to reduce milk production and to save

feed. After drying off the amount fed is kept low for a few weeks to reduce the possibility of cows making milk and having to be milked. Once all are completely dry the feed should be increased gradually until calving after which cows should be fully fed.

To reduce the incidence of milk fever, acidosis, ketosis and edema (See Animal Health) avoid over-feeding, especially on good pasture. If available, increase good quality hay and/or silage gradually a few weeks before calving to expand the rumen size so that cows can take in more pasture after calving, when it needs maximum intake to produce heavily and to reduce condition loss - good cows will always lose condition for a month or more after calving. Don't try and expand the rumen with too much pasture during the few weeks just before calving or the incidence of milk fever can increase and bagged up tight udders and sometimes mastitis, can occur. If hay or silage are fed before calving then keep feeding them after calving to allow a gradual change to pasture over about 10 days to avoid digestive upsets.

The balance varies on every farm depending on the breed (Austrian Pinzgauers don't get milk fever), the herd (metabolic problems in all breeds vary within herds depending on the breeder's selection criteria over the years), cow condition (fat ones are more prone) quality of pasture, amount of clover, mineral content of pasture and water.

See Feeding - Prior to Calving

In New Zealand skilled "pasture only farmers" with no hay, silage or grain, but could grow forage crops, achieve the expansion of the rumen without problems, but many don't do anything about it. They change their cows from allocating them about 10 kg/day (450 to 500 kg cow) of pasture dry matter until calving to offering them about 18 kg/day the day after calving. However it takes a cow a few weeks to expand the rumen size to be able to consume the full amount.

Feeding extra hay and/or silage for seven to ten days before calving increases the rumen size and helps allow the cow take in more pasture after calving, when it needs maximum intake to produce heavily and to reduce condition loss.

If this is done, then keep feeding the hay and/or silage after calving to allow a gradual change to pasture over about 10 days to avoid digestive upsets. Avoid sudden all changes in feed and mineral supplements because doing so can cause scours, loss of condition, abortions, production drops, and/or bring on milk fever and grass staggers.

Don't try to increase the rumen size too much with highly nutritious clover based pasture for a month before calving by feeding too much, because milk fever, very tight udders, and sometimes mastitis, can occur.

Fully feed after calving, but avoid getting on too fast a rotation, until the spring flush arrives when a one to two week rotation is ideal, depending on the fertility of soils and type of pastures. A one week rotation might sound too fast and one might imagine cows eating short (80 mm) yellow pasture (which is bad), but if a fat rotation is started when the pasture is longer and not grazed to short, they will be going in at about

Feeding most of the day's ration just before dark rather than in the morning apparently encourages calving during daylight hours.

Where cows bag up excessively before calving, it pays to ease the udder by removing a little milk, but not so much as to cause milk fever.

Feed good quality magnesium before and after calving.

### **Just Before Calving**

Obviously the aim is to minimise miss-mothering and deaths at calving. Animals are inclined to seek safe, secure and sheltered places to give birth, so in a paddock many end up close to a fence or ditch. If calving can be in a safe and sheltered paddock close to the home or dairy losses can be reduced. In 1,000 cow and larger herds this is not easy, but should still be planned for.

Another point is that animals which are hungry at parturient will be torn between seeking feed and seeking a suitable place to give birth, so feed them adequately so that they are not busy grazing when the time comes so give birth in the middle of the grazing mob which can cause an-

other animal to walk on the new-born.

### **Assisting Calving**

If an animal has been trying to give birth for half an hour check to see if the newborn (or two) is coming back end first, has a leg or legs folded back, or xxxxxxxx ask vet.

Use thin gloves and a disinfectant.

If unsuccessful in finding and correcting the problem within minutes, phone for your vet. It is very difficult for a vet to help a worn out over-tired animal to give birth and the longer any problem is left, the harder it is to fix.

Fit healthy animals give birth much more easily than over-fat or over-thin animals or un-fit barned ones which have had no exercise.

### **After Calving**

Don't worry if the cow doesn't eat her placenta because it appears to be a habit carried down to avoid predators scenting it and attacking the calf, rather than for nutritional purposes. Ruakura staff have observed placentas rotting in the rumens of fistulated animals several days after eating them, however, it should be removed or buried completely to avoid the spread of diseases such as Neospora by dogs, hawks, etc.

Once the calf is strong enough and has had a drink, move them and other calved cows to the parlor to check for mastitis and reduce the udder pressure of cows which have tight udders. Don't milk out too much or milk fever can be more likely to occur.

If after a day a small amount of placenta is seen hanging from the uterus or puss exudes, the cow may not have cleaned correctly. Attend to this or get your vet to do so. The longer this is left the harder the cow will be to get in calf, and if infection sets in, milk production will drop and the cow will suffer. Very few healthy fit grazing cows with adequate mineral (especially selenium) levels have this problem.

A problem is that a cow before calving has reduced feed so a reduced rumen capacity aggravated by the calf, so after calving the sudden production of large volumes of milk 'bred into cows', puts an immediate strain on them, however well fed she might have been before and after calving. As we all know, even the best pasture has ample protein, but insufficient energy. Once the typical large bodied New Zealand cow gets going she can eat 20 kg of dry matter - even if it is extremely wet with dew or rain and up to 85% moisture (normally 75% moisture or 25% dry matter). However, she can't do that on the day after calving, and even if she could, her rumen and digestive system would not be able to source the energy it needs. What many dairyman are now doing is drenching cows with a high energy source such as monopropylglycol at the first milking after calving, and some give 50 mls/cow/day until mating. Molasses fed in the bails by ball lick troughs also helps and is advisable until the pasture firms up in early summer. Obviously minerals are also essential. Some give vitamin A, D & E before calving.

### **Healthy Calves**

Some calves die within the first month of being born because of malnutrition before birth. This covers not just adequate feed, but good quality feed, with all the necessary minerals. The best calves are those born from cows which have had soluble mineral mixes. Dairy farmers who use products like this for the first time can't get over how healthy their calves are at birth, and how much sheen their skins have, with colours radiating, rather than being dull and lustreless.

Cows which have been on facial eczema zinc treatment since the beginning of the year are likely to be very low in copper, so should therefore have their copper supplemented, by adding dissolved Solminix to the drinking water, hay or silage.

When dry cows are on maintenance diets of about 6 kg of dry matter/450 kg cow/day, they receive only about 0.07 grams of copper/day, when they really need much more, to build up the levels in their own liver, and that of the calf. There is very little copper in milk, so newborn calves don't get much until they start eating. For this reason, calves also benefit when given 2 grams of a

good soluble mineral mix each per day in their water after the first week, increasing it to 4 grams at a month, and 10 grams at one year. If your pasture and/or water levels of manganese are high, and many in the Waikato are, avoid feeding a mineral mix containing manganese.

### **Mastitis at Calving**

Where cows bag up excessively before calving, it pays to ease the udder by removing a little milk, but not so much as to cause milk fever. If calving paddocks have been used for many years, and the herd has more than 2% of mastitis at calving or soon after, then changing the calving paddock may reduce the mastitis.

### **Magnesium Before Calving**

Another important point is to supplement magnesium from about three weeks before calving, at the rates recommended for your area. Some magnesium oxides are not as good as others, so make sure that you are feeding a top quality one (55% magnesium), which is finely ground and without impurities.

If these things are done, and your pasture mineral balance is reasonable (not too much potassium), calving should go peacefully, with no more than two or three per cent of cows going down. If your percentage is higher than this, then check everything.

Causmag should be spread on pasture, hay or silage. Sometimes cows avoid eating it, so a good idea is to give them half their magnesium in the oxide form on pasture, hay or silage, and half in the sulphate form in the drinking water. If Solminix is mixed with the Mag oxide, most animals will lick it all up, and if Solminix is added to the drinking water they won't be put off drinking because of the magnesium sulphate flavour. In all cases start magnesium a week or more before the three weeks to accustom them to the product.

If magnesium supplementation is started too soon before calving at too high a rate, the cows then require even more for the three weeks before calving, because their system becomes inefficient at converting it. After calving, keep the magnesium going until the pasture matures, or all year if magnesium pasture levels are below 0.23% or milk production is above average. Many high producing dairy cows are supplemented with magnesium all year, at a low level, or have their cows get it by using a good soluble mineral mix with the seven most important elements, which includes magnesium.

### **Zinc Too**

Gladys Reid has pointed out that zinc depletion can develop with surprising speed at calving time, as zinc cannot be mobilised fast enough from body stores for body needs under conditions of stress (similar to calcium and magnesium in stress). Under these conditions outside sources of zinc are needed for body requirements.

It is not a case of a dietary deficiency in the true sense, as there is plenty of zinc in the bones and body tissues. It is a case of supply not immediately meeting the demands of stressful labour. She put zinc sulphate in the water troughs of the maternity paddocks, after which cows were chewing the cud right up to calving, and calves were up and sucking in no time at all.

The point needs to be made again that the crash in available zinc in the blood plasma has nothing to do with soils, fertilisers or grass. It is simply that stressful and prolonged calving increases the short term zinc needs, which cannot be mobilised from bone and other tissues fast enough. Good mineral mixes contain zinc.

### **First Week of Milking**

It is important for anyone to be able to come into the herd and milk without any instructions. To achieve this it is necessary to have systems relating to each cow's situation regarding colostrum and treatments. It is best to have recent calvers separate from the main milking herd to avoid the possibility of colostrum getting in the milk vat and to know how long each cow has been calved, so paint a dab on the top back left of the leg before the first afternoon milking, one on the

top right leg before the second afternoon milking and one on the bottom of the left leg before the third afternoon milking. On the fourth afternoon paint the bottom right leg. The next morning tail paint the cows which have four dots and draft them into the milking mob.

Also keep records on paper and/or a white board.

See Animal Health-Mastitis for identifying treated cows and use the same system for footrot treated ones.

In countries where pre-feeding is heavy, farmers have found that it is best not to milk cows out fully for up to a week after calving.

Metabolic problems increase just before and for a week or so after calving. Cows calving in poor condition and those subjected to sudden diet changes, especially to low energy and low magnesium diets of low clover content poor quality sun-less pasture, have a higher risk of suffering acidosis. Anything which limits her feeding such as getting to a rationed paddock late because of trying to get to her calf, late out of the parlor, being in season or bad weather which discourages grazing, can bring on an attack, especially if she is also being underfed.

Feeding 6 grams of niacin per cow per day for two weeks before calving can reduce the incidence of ketosis, and minimise the formation of fatty livers in fat cows. It is important that cows don't lose weight during the dry period, or fatty livers and metabolic problems can increase.

Magnesium helps avoid ketosis by preventing the rumen pH from dropping too low, which can cause digestive upsets resulting in poor utilisation of the feed, a decrease in energy intake, and a drop in condition through malnourishment.

If metabolic problems are not common then continue with your system rather than change or buy remedies which are not needed. However, if a few show signs of clinical problems, others are suffering. so the system must be improved by increasing feed intake, even if it means buying in good quality hay or grain. Feed a good quality magnesium. Some are not good, so if problems are experienced, change to a better one (usually, but not always, more expensive). Also feed high energy molasses based products.

Avoid overstocking and avoid applying high rates of potash and/or nitrogen to pastures, which are the biggest causes of metabolic problems.