

# GOOD MANAGEMENT AT WEANING

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**R**egardless of how much milk you are feeding calves or what age calves are at weaning, if the rumen is not ready, calves are in for a challenging transition period. The development of the rumen is important to ensure a smooth transition from milk feeding to an adult diet at weaning without setbacks in growth rates or digestive upsets. Weaning can be a stressful time for calves as they change from a liquid diet of predominantly animal protein sources to a solid diet of vegetable protein sources and calves can also become stressed from changes in housing due to a new environment, competition in new groups, and other general husbandry practices like vaccinations. Weaning will be more successful if your calves are only exposed to one stressor at a time.

When a calf is born, the rumen is very small and undeveloped. To encourage early development of the rumen, the calf needs to start eating calf starter concentrates and drink water. Calves only begin to eat considerable amounts of starter concentrates from 3 weeks of life onwards. The amount of starter calves will eat depends on the amount of milk fed, therefore, as the calf gets older, a balance is required between feeding enough milk for growth but ensuring enough starter intake to promote rumen development. Thus, the time of weaning is somewhat dependent on the feeding regime. For a calf the intake of calf starter concentrates is the single most important factor for the development of the rumen. For this reason, it is important that calves have access to clean and palatable starter concentrates as soon as possible, even though they will only eat small amounts in the first 3 weeks. By providing small amounts of fresh concentrate every day, it increases the calf's desire to eat them and you will see when the calves need more. Encouraging concentrate intake from a few days of age stimulates the growth of rumen papilla as a result of bacterial fermentation of the concentrate. For fermentation to take place, the bacteria need a separate source of water, regardless of what milk feeding system is used. It takes 2 to 3 weeks for the bacterial population of the rumen to grow to a number that can efficiently digest concentrate. Concentrates should be highly palatable and of a high nutritional quality. It is best to clean out unfinished concentrates each day and feed to older animals. Calves only need small amounts of roughage, but if fine ground pelleted rations are fed, additional roughage will be necessary for the development of the rumen. The amount of concentrate eaten depends on the amount of milk fed. Therefore, as the calf gets older, a balance is required between feeding enough milk for growth while ensuring enough concentrate intake to promote rumen development.

Calves should only be weaned when they are eating at least 1kg of concentrate per day for three consecutive days. This will avoid a growth check after weaning. This level of intake is usually achieved by eight weeks of age.

When weaning calves, it is recommended to use a gradual or stepwise process. This will allow the calf time to adjust to the lower level of milk and increase solid feed intakes accordingly to prevent post weaning growth checks. It is worth remembering that by law, calves must be over 28 days of age before they can be fed once a day. Where calves are being fed manually more than once a day, the first move is to change to once a day feeding approximately 1 month prior to weaning, allowing calves time to adjust to the new regime and further develop their rumen prior to reducing the total volume of liquid fed. Once they are accustomed to one feed daily and consuming concentrates, reduction in the volume of liquid feed can begin. If feeding milk replacer instead of whole milk, it is important that both the solids content and water content of milk replacer are reduced together. Reduction of milk or milk replacer feeding should ideally be carried out over the course of two weeks, reducing the amount of liquid feed every other day. In automatic feeding systems calves can be fed 3-5 times per day and often larger amounts total daily liquid feeds are also offered. In these systems it is far more difficult to ascertain the level of concentrate feed that any individual calf is consuming, therefore weaning should be as gradual as possible. This involves a weaning protocol of approximately four weeks, reducing the amount very gradually.

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## Why is adequate rumen development important?

Summer Scour Syndrome (SSS) is a relatively new condition, and research is currently ongoing to determine the exact cause, but inadequate rumen development may contribute to the syndrome. SSS is a collection of clinical signs, characterised by scour and rapid weight loss which are not caused by the common infections/infestations of calves at grass. It typically occurs in dairy calves within a month of turnout to grass and up to 12 months of age. Other clinical signs include lethargy, weakness and lack of rumination, which can progress to profound weakness and death. Some calves may develop oral and oesophageal ulceration or ulceration of the muzzle. Not all calves in the group are affected and severity can vary from year to year and farm to farm. The affected calves are usually unresponsive to conventional treatments, only responding to removal from grass. The cause of SSS is not definitively known and multiple theories exist as to what the most likely risk factors are. The one common factor to all cases is a grazing diet (exclusively or partially) in first grazing season calves. An infectious cause has not yet been identified and the disease is thought to relate to nutritional issues, such as when the rumen is insufficiently developed to digest forage. Summer Scour Syndrome is more common in calves grazing 'rich' or 'lush' pastures, typically with a high crude protein (greater than 20%) and low fibre (less than 40%) content per kg of dry matter ingested. Calves are selective grazers and preferentially consume the top, leafier parts of the grass, which contain more nitrates and non-protein nitrogen (NPN). It is suspected that consumption of large quantities of nitrates and NPN by young calves, with immature rumen development might lead to an excessive build-up of ammonia in the rumen. Inadequate rumen development may also lead to an unstable pH for rumen microbes to function appropriately which may also potentially contribute to the syndrome.

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## HOW CAN I PREVENT SUMMER SCOUR SYNDROME?

STEPS TO PREVENTION	WHY?
Review calf rearing process	Discuss with your veterinary practitioner and farm advisors if your calf rearing strategy is optimal. It may be appropriate to delay weaning to at least 10 weeks of age.
Wean calves gradually	Gradual weaning ensures a smooth transition from a milk diet to a forage diet, concentrates should be introduced to calves from the first week in life. Begin weaning up to 4 weeks before removing milk completely and calves should be eating at least 1kg of concentrate daily consistently before weaning. See AHI leaflet on Early Nutrition and Weaning.
When weaning, make no other dietary changes	Other dietary changes will increase stress and take longer for the calf to adjust. For farms with Summer Scour Syndrome issues and depending on the farm facilities and the type of grazing available, it might be worthwhile to consider retaining calves indoors on a concentrate and high fibre diet for at least 1 week after weaning before turnout to pasture.
Ensure calves have high levels of fibre in the diet from stemmy grass or older swards, when first turned out to pasture	Calves need adequate levels of fibre and on farms with Summer Scour Syndrome issues, this may include grazing more stemmy grass covers or providing an additional fibre source (straw or hay). For farms with these issues, calves should avoid grazing reseeded pastures, or paddocks with very leafy (lush) grass for at least 2 months after turnout.
Strip graze calves to encourage consumption of both the leaf and stem of the grass	Calves may prefer more lush grass but may not be able to digest large amounts of it.
Avoid pastures that have had slurry or nitrogen applied recently	Slower growing pastures have less nitrogen and more fibre.

