

Autumn grazing for dairy cows – opportunities for farms and the climate

In the Upper Rhine region, permanent grassland yields an average of between 6 and 8 tonnes of dry matter (DM) per hectare, 15 to 25 % of which is produced after 15 August. However, this autumn grass, which is a high-quality feed, is still too often underestimated in many livestock farming systems. Autumn grazing is an attractive source of feed that promotes feed self-sufficiency while reducing production costs.

Autumn grass: a forage resource not to be overlooked

For several years now, the effects of climate change have been keenly felt on livestock farms in the Upper Rhine region, particularly during the summer months, when extreme temperatures and/or water shortages severely limit grass growth. Following these heatwaves, autumn can be a very favourable season for the recovery and regrowth of meadows (*Figure 1*). In early September, grass growth is influenced by the after-effects of the summer drought and the more or less rapid return of rainfall. Species such as cock's-foot (*Dactylis glomerata*) or tall fescue (*Festuca arundinacea*) are the first to start growing again, long before perennial ryegrass (*Lolium perenne*). This growth can then be substantial, with an average biomass of 15 to 30 kg DM/ha per day. From mid-November onwards, falling temperatures, reduced solar radiation and shorter days restrict further growth.

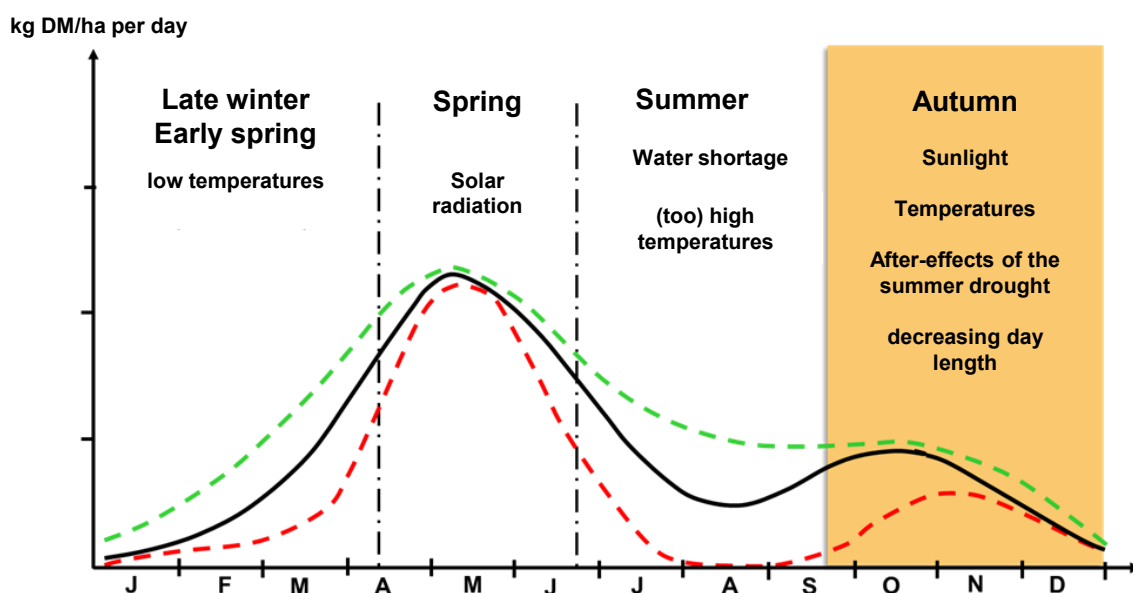


Figure 1: Variations in grass growth over the course of the year and limiting factors (black: average year, green: favourable climatic conditions, red: unfavourable climatic conditions) (Lemaire, n.d.)

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Measurements carried out as part of the grass growth monitoring programme in Alsace confirm this trend: relatively high grass production was recorded in September and October, regularly exceeding 20 kg DM/ha per day between 2020 and 2024 (Figure 2). Autumn 2024 provides a particularly clear example of this, with production peaks in the range of 30 to 40 kg DM/ha per day. These growth rates would, if the herd were fed exclusively on pasture, allow for a theoretical stocking rate of one livestock unit per 0.7 to 0.8 ha.

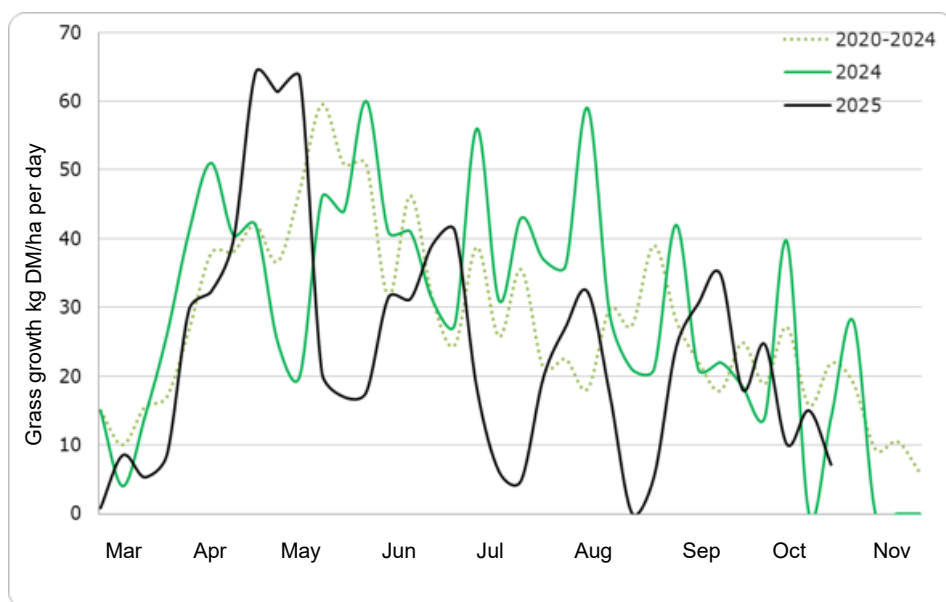


Figure 2: Grass growth curves in Alsace between 2020 and 2025 (Chambre d'agriculture d'Alsace, 2025).

This trend is similar for Swiss grasslands (Figure 3), with biomass in September and October varying between 20 and 50 kg DM/ha per day during the period 2000–2024.

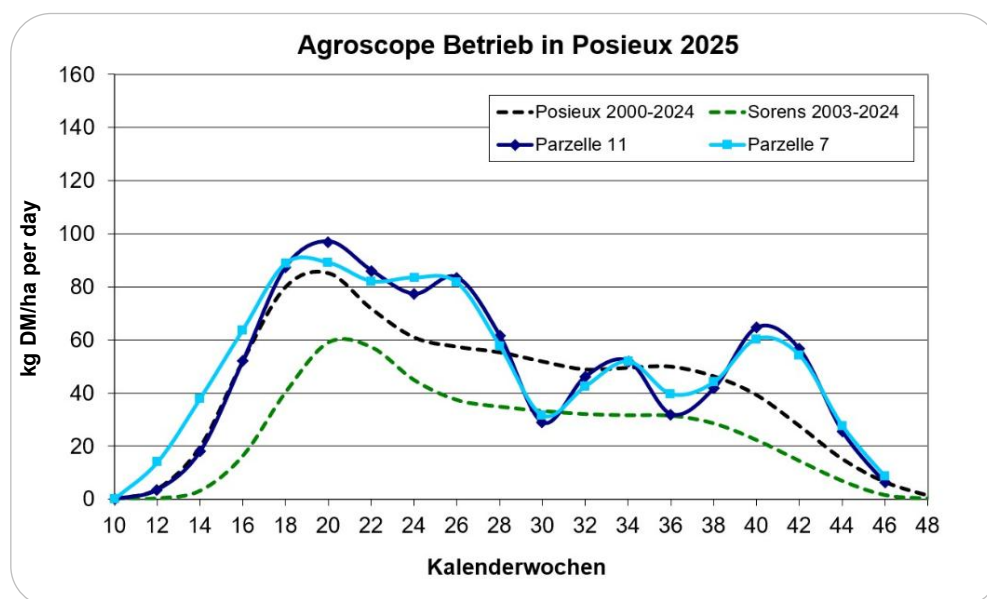


Figure 3: Grass growth curves on pasture land at the Agroscope farm in Posieux (altitude: 650 m) between 2000 and 2025 (Agroscope, 2025)

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Autumn grass: high-quality fodder

Contrary to widespread belief, autumn grass is a high-quality feed whose nutritional values are similar to those of spring grass, but which generally has a higher protein content (Table 1). As it is mainly leaves that regrow in autumn, pasture management is considerably simpler than in spring and the feed value is much more stable.

Nutritional values	Spring (until the end of April)		Autumn (October & November)	
	Posieux (n = 8)	Sorens (n = 8)	Posieux (n = 8)	Sorens (n = 6)
NEL (MJ/kg DM)	6.5	6.3	5.7	6.2
Crude protein (g/kg DM)	230	206	292	260
APDE (g/kg DM) ¹	113	110	113	113
APDN (g/kg DM) ²	153	137	194	173
NDF (g/kg DM)	351	334	272	302
ADF (g/kg DM)	181	182	169	187
vOM (%)	78.4	76.8	70.0	79.5

¹APDE: Metabolisable protein deriving from ruminal available energy; ²APDN: Metabolisable protein deriving from ruminal available nitrogen, in the Swiss protein evaluation system.

Table 1: Average feed value for the years 2024 and 2025 of spring and autumn grass at the Agroscope farm in Posieux and at the organic farm 'Schulbauernhof von Sorens' in Switzerland (Hayoz, 2026).

More specifically, the studies on **the feed value** of grass carried out by Agroscope in Posieux over several years (Figure 4) show that autumn grass has a low cell wall content (≤ 400 g/kg DM), an excellent crude protein content (in the range of 200 g/kg DM) and highly variable sugar contents, which can vary by a factor of two (from 50 to over 100 g/kg DM). These values may vary depending on climatic conditions in autumn (sunlight, temperature) and the management practices applied to the meadow during the summer. Very good forage values are achieved when the grass consists of leafy regrowth following a professionally carried out mowing or grazing. In contrast, significantly lower quality is observed when there is a high proportion of stems and dry grass residues from the summer.

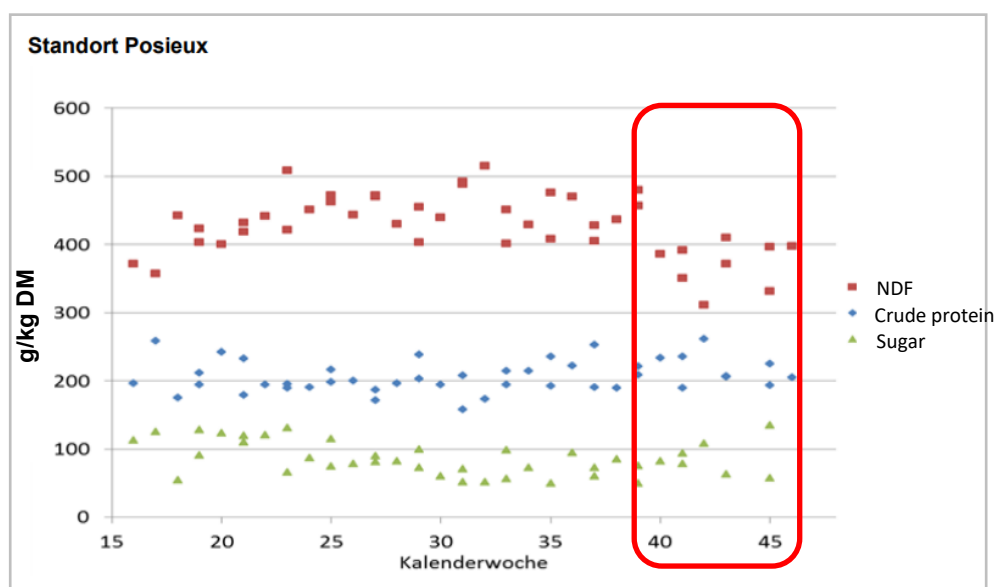


Figure 4: Seasonal variations in NDF, crude protein and sugar content in pasture grass (weekly values over several years in Posieux) (Münger et al., 2021).

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However, particular attention should be paid to mineral supply (Figures 5 and 6). In autumn, a marked decline in the calcium, phosphorus and selenium contents of pasture grass can be observed, which is why an adjusted mineral supplement is required. Conversely, the iron and cobalt contents rise significantly during the same period, meaning that an additional supply of these elements is generally not necessary.

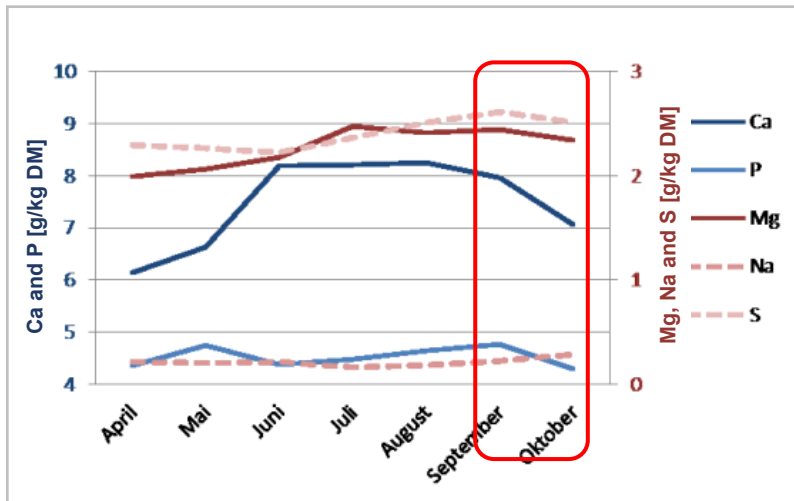


Figure 5: Seasonal variations in mineral content (major elements); (data from Posieux and Sorens between 2008 and 2010) (Münger et al., 2021).

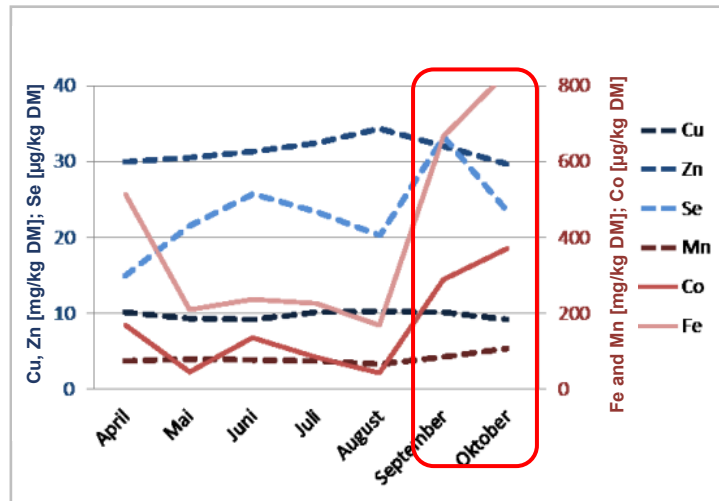


Figure 6: Seasonal variations in mineral content (trace elements) (data from Posieux and Sorens between 2008 and 2010) (Münger et al., 2021).

Autumn grass: greater feed autonomy and lower production costs

Grazing dairy cows on autumn grass can significantly reduce the use of preserved fodder, particularly maize silage (Table 2). For a herd of 80 dairy cows over a two-month period, this equates to a saving of around 2 to 5 ha of maize. The very high crude protein content of autumn grass also makes it possible to reduce the protein feed supplement by approximately 0.5 kg to over 2 kg per dairy cow per day, depending on the proportion of pasture grass.

	0 % grass	25% grass	50% grass	75% grass
Ration for producing 30 l of milk				
Intake of pasture grass (kg DM)	0	5	9	13
Maize silage (kg DM)	17.5	13	9	5
Hay (kg gross)	1	1	1	1
Soya meal (kg gross)	3.2	2	1.1	0.4
Wheat (kg gross)	0	0	1	2
Mineral feed (in g)	260	150	100	100
Effects of the grass content in the ration (autumn grazing, 80 dairy cows – 60 days)				
Savings in maize silage (t DM)		21.6	40.8	60
Savings in soya meal (t gross)		5.8	10.1	13.4

Table 2: Simulation for a herd of 80 dairy cows over a period of 60 days (according to the Chambres d'agriculture des Pays de la Loire, 2008)

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Reducing the proportion of preserved forage and concentrate through grazing has a direct impact on production costs in dairy and beef production. The cost of pasture grass is three to four times lower than that of preserved forage.

In 2021, the Trévarez Research Station (Brittany) investigated the inclusion of autumn grass (September–October) in the diet of dairy cows (Geffroy, 2023). Two groups of cows were managed in parallel: the control group received a standard maize silage-based ration, while the experimental ration (grazing group) contained 5 kg of pasture grass.

- Control group (BAT): 16 kg DM maize silage + 4 kg DM grass silage (bales) + 4.2 kg rapeseed meal
- Pasture group (PAT): 11 kg DM maize silage + 4 kg DM grass silage (bales) + 5 kg DM pasture grass + 2.9 kg rapeseed meal

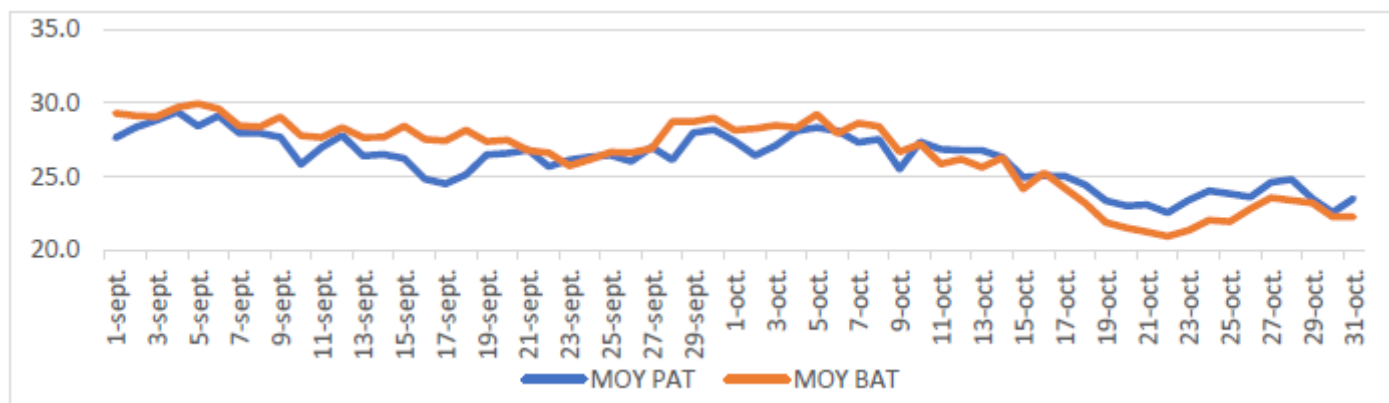


Figure 7: Average milk production of the two dairy herds (MOY PAT: average of the pasture herd, MOY BAT: average of the control herd) Trévarez trial farm (Geffroy, 2023)

The inclusion of 5 kg DM pasture grass enabled a saving of 5 kg DM maize silage and 1.3 kg rapeseed meal as a protein supplement for each cow in this group, without any impact on milk yield (Figure 7). With feed costs of €77 per 1,000 litres of milk for the ‘grazing ration’, the use of autumn grass resulted in additional revenue of around €20 per 1,000 litres of milk compared with the control group’s ration fed in the barn.

Best practices for utilising autumn grass on pasture

To make the most of autumn pasture, there are a few basic rules to follow.

- **Plan for a transition period**

If summer weather conditions have led to a break in grazing and the animals have been fed exclusively on preserved fodder – particularly maize silage – the transition should be made gradually. Over a period of one to two weeks, the amount of preserved fodder should be gradually reduced while, at the same time, the animals' daily grazing time is extended.

- **Limit the amount of feed left in the trough**

If the aim is for the animals to consume as much pasture grass as possible, they should – where possible – be driven out to pasture before being given supplementary feed. The supplementary feed serves merely to supplement the amount of grass available on the pasture and should preferably be provided at the end of the day, after the animals have been brought in from the pasture.

Please note: In damp and cold morning conditions (hoar frost, heavy dew, significant temperature differences between day and night), roughage should be provided before the animals are put out to pasture and the mineral supplement adjusted to avoid the risk of calcium excess.

- **Adjust grazing time to the grass supply and the pasture's carrying capacity**

Where the carrying capacity of the grassland is limited, it is important to restrict the time the animals spend on the pasture. The key benefit of this time management lies in concentrating the feeding period. A dairy cow can consume around 6 to 7 kg of dry matter of pasture grass within 3 to 4 hours, provided she has not previously been fed preserved fodder. Pasture efficiency can be improved by deliberately limiting grazing time.

Feed and concentrate intake in the barn (in kg DM)	0	5	10	15
Minimum grazing time at a height of > 10 cm (in hours)	8–9	5–6	3–4	2
Minimum grazing time at a height of 6–8 cm (in hours)	10–11	7–8	5–6	3–4

Table 3: Minimum grazing time required for adequate grass intake, depending on the height of the grass and the amount of supplementary feed and concentrate provided at the feeding trough (Delagarde, 2008).

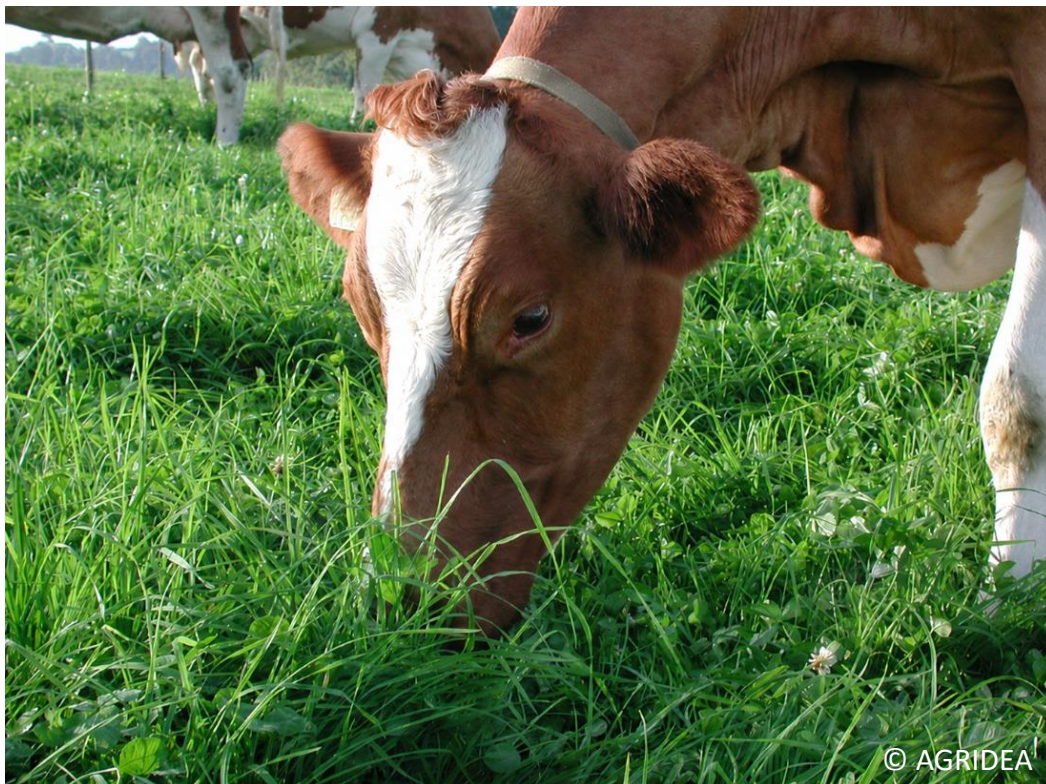
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- **Grazing management**

Just as in spring, good pasture management is crucial in autumn to make the best use of the available grass. Rotational grazing is the preferred method. However, at this time of year it is particularly important not to 'overgraze' the land: a residual grass height of at least 5 to 6 cm must be maintained at all costs. If the grass is cut any shorter, there is a risk that the plants' reserves will be depleted, which hinders regrowth the following spring and allows unwanted species to take hold.

Conversely, if the residual grass height is too high (> 10 cm) at the end of autumn, this can have a detrimental effect on the quality of the meadow: it can lead to patches of bare ground in the spring or mechanically hinder grass growth, as the grass rots and remains lying on the ground, particularly during heavy snowfall in winter. Allowing animals with moderate feed requirements, such as heifers or dry cows following the dairy cows, access to the pasture can help to ensure the meadow is fully grazed.

At the same time, the risk of trampling damage is increased in autumn when conditions are damp. To limit the strain on the sward, the time the animals spend on the plot should be reduced and/or the stocking density significantly lowered (to around 70 to 80 ar per LU). Trampling damage has particularly serious consequences at this time of year, as valuable grasses are usually unable to regenerate due to the climatic conditions. Bare patches are then colonised primarily by weeds or species of low forage value.



The effects of autumn grazing

Grazing on meadows in autumn promotes tillering in grasses and increases sward density the following spring, provided that the rules of good professional practice are followed.

The effects of autumn grazing on grass growth in spring were the subject of several trials in Switzerland and France. The aim of the studies carried out by Agroscope between 2001 and 2004 on temporary grasslands at two sites in the Swiss Mittelland was to investigate the influence of the timing of the final use (from early October to late November) and the type of autumn use (mowing or grazing) on spring grass yield (Mosimann et al., 2006). Under the conditions of the Swiss Mittelland, the timing of the last autumn utilisation of the meadows – whether through grazing or mowing – has a very significant influence on the amount of grass available the following spring. It should be borne in mind that variations between years and sites can be considerable.

In principle, however, it can be assumed that for every kilogram of dry matter utilised between early October and late November, lower quantities of grass will be available in the following year:

- in mid-March, approximately 0.34 kg DM less,
- at the start of April, around 0.45 kg DM less,
- in May, up to 2.64 kg DM less,

provided that the remaining biomass in November is below 300–500 kg DM/ha.

By deliberately staggering the date of the final grazing on individual plots, grass growth in spring can be spread out over time. This allows for better management and control of the forage supply in spring.

In France, several trials were also carried out on the effects of autumn grazing, particularly at the Les Etablères experimental station in the Vendée (Haurez & Joulie, 2003). In these trials, the animals' grazing period was extended until the end of December, i.e. by more than a month compared with the conventional grazing period. With a residual grass height of 5 cm, forage production was maintained in the following spring, meaning that net grass production was slightly higher on late-grazed areas (*Figure 8*). The extended grazing period had no adverse effects on the composition of the pasture vegetation or on forage quality in the following spring. However, using the pasture in late autumn led to a delay in grass growth the following year. Each additional week of grazing in November or December causes a delay of around one day in the start of the growing season the following year. Overall, however, this delay amounts to less than a week.

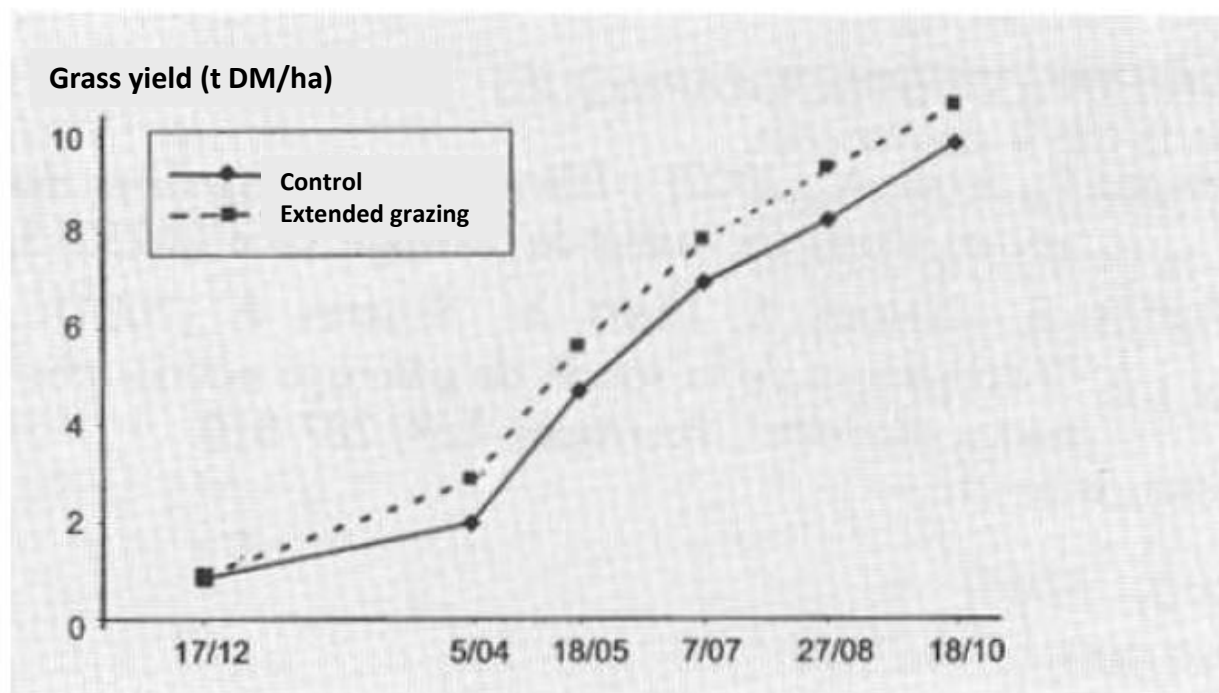


Figure 8: Average cumulative grass production at the Les Etablères experimental station (3-year average) (Haurez & Joulie, 2003).

Summary

Autumn grass, which is often underestimated, is a high-quality source of feed that can help improve feed self-sufficiency and reduce production costs.

Contrary to popular belief, autumn grass has a nutritional value comparable to that of spring grass and is very well suited for use in pasture-based systems. Autumn grazing can reduce both the use of preserved forage and the need for protein supplements, which has a direct positive impact on production costs.

However, for successful utilisation, a few basic rules must be observed: supplementary feeding before turning out to pasture should be kept to a minimum, and the animals' grazing time should be adapted to the available grass supply. To maintain sward quality and the sustainability of the land, rotational grazing with a residual grass height of around 5–6 cm is recommended.

Studies also show that extending the grazing period until the end of November influences grass production in the following spring, particularly if the remaining biomass in late autumn is below 300–500 kg of dry matter per hectare. However, this does not adversely affect the quality of the grass stands or their feed value.

References and technical background

AGRI 53, Chambre d'agriculture Mayenne (2018) : L'herbe d'automne en huit questions

Agroscope (2025): Graswachstumskurven. www.agroscope.admin.ch [Graswachstumskurven](#) (aufgerufen am 17.02.2026).

Cartoux P. (2016) : "L'herbe d'automne: un fourrage de très bonne qualité" *Fiche AUTOSYSEL* IDELE, Chambres d'agriculture, INOSYS Réseaux d'Elevage

Chambre d'agriculture d'Alsace (2025): Courbes de croissance de l'herbe en Alsace entre 2020 et 2025.

Chambres d'agriculture Pays de Loire – ARVALIS Institut du végétal (2008) : "L'herbe d'automne : un fourrage à valoriser par les troupeaux laitiers"

Delagarde R., Pérez-Ramirez E., Delaby L., Peyraud J.L., (2008): "Adaptation comportementale et ingestion des vaches laitières soumises à une restriction du temps d'accès journalier au pâturage" *3R*, 15, 323-326.

Delagarde R., (2018) : Valeur de l'herbe pâturée *Guide pâturage : 100 fiches pour répondre à vos questions* RMT Prairies Demain

Deleau D., (2015) : "Prairies: valoriser l'herbe d'automne au pâturage" www.arvalis.fr [Exploiter la pousse des prairies à l'automne pour le pâturage | ARVALIS](#)

Geffroy K., (2023): "Valoriser l'herbe d'automne permet de produire tout en maîtrisant ses charges dans un contexte de changement climatique" *Chambres d'agriculture de Bretagne*

Haurez P. & Joulie A., (2003): "Le pâturage d'automne-hiver des vaches allaitantes en Vendée" *Fourrages*, 173, 93-96.

Hayoz, B. (2026): Durchschnittlicher Futterwert von Frühlings- und Herbstgras der Jahre 2024 und 2025 in Posieux und Sorens, Agroscope. Persönliche Mitteilung von F. Schori vom 18.2.2026.

Lemaire, G. (o.J.): Variabilité de la croissance d'une graminée au cours de l'année et facteurs limitants, INRA.

Mosimann E., Jeangros B., Lüscher, A., Lobsiger M. & Hofer, C. (2006): Utilisation des pâturages d'automne. *Revue Suisse Agric.* 38 (5), 231-236.

Münger A., Schori F., Schlegel P. (2021): Fütterungsempfehlungen für die Milchkuh. In: Fütterungsempfehlungen für Wiederkäuer (Grünes Buch), Kapitel 7. Hrsg. Agroscope Posieux.

Pottier E., D'Hour P., Havet A., Pelletier P. (2001): "Allongement de la saison de pâturage pour les troupeaux allaitants", 167, 287-310.

Programme Herbe et Fourrages Centre : (2014) "Guide du pâturage"