



EQUINE

Health From The
Ground Up

2016

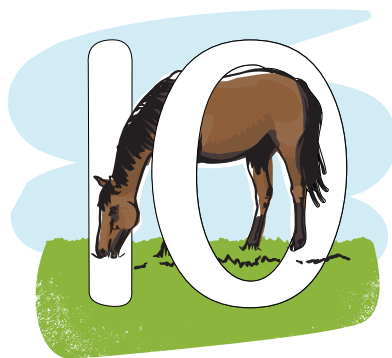
COTSWOLD
Grass Seeds
— DIRECT —

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“‘Designer forage’ for horses is a really clever, groundbreaking idea that should make a real difference to current best feeding practice for horse owners and breeders. At least 80% of the horse’s diet should be forage and there is no doubt that its quality and content can have a significant impact on their health, wellbeing and performance. Cotswold Seeds Equine is a very exciting prospect.”

Dicky is an FEI official treating vet at Badminton and Blenheim Horse Trials, and was a clinic specialist in the onsite equine hospital at the London 2012 Olympic Games. Now a Director of the B&W Equine Group, he completed a three year residency and Masters degree in equine internal medicine at The Marion DuPont Scott Equine Medical Center in Virginia, USA. Prior to this he worked for three years in equine hospitals in the UK and NZ. He is a Diplomate of the American College of Veterinary Internal Medicine and a Royal College of Veterinary Surgeons (RCVS Recognised Specialist in Equine Internal Medicine).

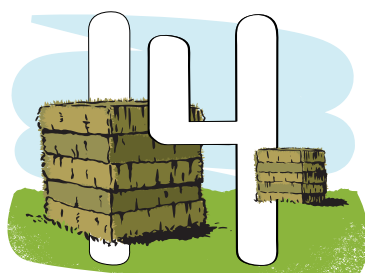
Seed Mixtures



Grazing



Surface



Hay/Haylage

The importance of pasture

In the wild, horses have free access to a wide range of species within the pasture they graze. They can roam freely to forage for specific plant species that will naturally provide them with the macro and micro nutrients, minerals and vitamins that they need. It is generally believed that wild horses had the ability to self-medicate by choosing different plants at different times of the year according to their requirements.

Due to domestication the horse seems to have lost that innate ability and they are reliant on their owners getting it right for them. It has become increasingly popular to do this by feeding concentrates and supplements. Whilst this can help address some of the shortfalls in the pasture it is not the only way of tackling this issue. Getting the species within the pasture correct in the first place should minimize the need for concentrate supplementation. This is important because there are a number of health issues that can be directly related to pasture management, nutritional content of the pasture and time spent eating grass or conserved grass (hay or haylage). These include laminitis, developmental orthopaedic disease, gastric ulcers, colic, respiratory diseases, mud fever, stereotypical behaviour and wormer resistance.

The prevalence of some of these issues has notably increased in the last few decades. The reason for this is multi-faceted but could include the increase in land prices forcing stocking rates to increase. The rule of thumb for stocking rates is one to one and a half acres per horse however this does not take into account the land, the breed, age or purpose of the horse. Another problem is, more often than not, land used for horses was originally cultivated for production grazing animals, which have very different nutritional requirements to the horse.



By getting the right mix of grass, legume and herb species for your land and your horse's needs, the aim is for your horse to gain the majority, if not all, of its nutritional requirements from forage, relying less on concentrates and spending more time out in the field whatever the weather. Whilst the nutritional content and medicinal qualities of these species will depend on how you manage the pasture it is undoubtedly the healthiest option for your horse.

Welcome

Cotswold Seeds was founded forty years ago and supplies 10,000 farmers and landowners with bespoke grass seed mixtures. Our technical experts, with their solid base of experience, help to create bespoke combinations tailored to each of our customer's specific needs.

UK farmers spend £80 million on wormers each year but they've come to realise that this can be hugely reduced by using plants instead, since mixes containing sainfoin, birdsfoot trefoil and chicory have natural anthelmintic properties. Results from current research, such as the LegumePlus project, are very positive from a veterinary point of view, demonstrating that farmers can use more anthelmintic plants to reduce costs and produce healthier animals.

The advent of the Pasture-Fed Livestock Association has brought about a change within farming. Pastures that contain a more natural diverse mix of plant species have lowered production costs through extending the grazing season and decreasing or, in some cases, eliminating the need for concentrate feed. The farming industry has also been able to cut costs by using nitrogen fixing plants, thus reducing the need for expensive fertilisers.

Increasingly we are seeing similar needs within the equestrian industry and our growing awareness of the benefits to horses of pasture feeding has led us to expand our range of products for this sector. Taking a more holistic approach we aim to help horse owners and carers improve pasture quality and in turn improve their horse's health.



Linking good health to pasture

Laminitis

The research into laminitis can be very complicated and some of it is conflicting, however there are a number of things that you can do to minimise the risk of your pony or horse initially succumbing to laminitis or having a reoccurrence of the disease:

- Ensure your sward includes a diverse mix of species that are low in Non Structural Carbohydrates (NSC)
- Restrict early morning grazing as NSC content at its highest
- Maintain short, leafy swards either through grazing or topping – this ensures the plants utilize the NSC rather than store it
- Try and have a shaded grazing area – research shows that NSC content is lower
- Soak hay before feeding so that the soluble sugars will leach out

The right grazing species help

Both the Equine Pasture and Natural Pony Paddock mixtures are specifically designed for laminitics and horses requiring a diet less rich in NSC. Neither mixture contains ryegrass which has been linked with laminitis.

Gastric Ulcers

Research demonstrates that gastric ulcer prevalence is significantly higher in domesticated horses than wild horses. This can be linked to many management issues but one of the main factors is that, as a trickle feeder, acid is continually secreted into the stomach and if there is a period of fasting ulceration can occur within the horse's stomach. A high grain diet has also been linked with gastric ulcer prevalence, therefore ensuring your horse has access to forage for the majority, if not all its nutritional requirements, will minimise the risk of gastric ulcer formation.

Pasture helps

In order to have your horse or pony out on pasture for as much time as possible you need a persistent, hard wearing nutritionally balanced sward which is suited to your horse's requirements. Our staff can help you determine which mix is suitable for your particular need and advise you on how to manage that sward to ensure it has continuity.

Equine Pastern Dermatitis

Equine Pastern Dermatitis, more commonly known as mud fever is a common problem that is often difficult to treat. The cause of mud fever is usually attributed to a bacterial pathogen and wet and muddy conditions are generally associated with the development of the condition.

Good, thick swards help

Whilst we cannot control the weather or the presence of the causal bacteria, we can help you establish a strong sward that is less likely to suffer from poaching. This will therefore minimise the muddy conditions associated with the development and exacerbation of mud fever.

Developmental Orthopaedic Disease (DOD)

The term DOD is used to describe most growth disturbances in young horses. Problems such as Osteochondrosis, Osteochondritis Dissecans (OCD), Angular Limb Deformity, Phytitis, Subchondral bone cysts, Flexural Limb Deformity (contracted tendons) and Cervical Vertebral Malformation (Wobblers) have all been linked to nutritional deficiencies. Whilst feeding concentrate supplementation can usually address these problems it would be a healthier option to try and ensure that the pasture for the mare in the final trimester (when 60-65% of foetal growth occurs), the foal at foot, the lactating mare and the weanling have the correct nutritional content.

Pregnant Mares in final trimester: The most important nutritional factors in this stage of pregnancy are higher protein, mineral and vitamin A requirements. Research has shown a direct link between copper deficiency in mares final trimester and increased incidence of DOD in the resultant foal.

Lactating mares: The mare needs to provide about 3% of her bodyweight in milk each day throughout the first 3 months of lactation. Her protein requirements are high, as are calcium and phosphorous needs.

Weanlings to Yearlings: Protein is key to the growth and development of youngstock and requirements are high at this stage of the horse's life. Trace mineral requirement such as zinc, copper, manganese and selenium are also higher at this time in comparison to later in life. Ensuring the youngster has the right balance of calcium and phosphorous to support bone development is key.



Mineral rich grass swards help

The Broodmare and youngstock mixture contains a range of palatable species selected specifically to meet the requirements of final trimester and lactating mares as well as weanlings and yearlings. Cocksfoot, Yarrow and Sainfoin are all high in copper content as well as trace minerals, and Sainfoin is a high protein legume with a high calcium content. If your mare is in her final trimester during winter then the Stud mixture for hay will help take care of her nutritional requirements. We also have a final trimester herbal ley which includes palatable herbs which could be sown as a strip and kept for winter grazing.

Colic

Colic is a general term used to cover abdominal pain within the horse. There are many different types of colic and many different causes of colic. Some are unavoidable whereas there are research based steps that you can take to minimise the risks of your horse developing colic such as:

- Provide a consistent diet that is made up of at least 60% forage
- Keep concentrate consumption to a minimum
- Make any dietary changes gradually
- Always have fresh, clean water available
- Feed high quality hay or haylage
- Avoid feeding on the ground in sandy areas
- Control parasites

High forage diets help

By ensuring your sward contains a diverse mix of species that helps meet the nutritional requirements of your horse, you will be able to limit the concentrates that you have to feed. If you choose a mix that contains sainfoin you will also be helping to keep parasites under control as this legume is a natural anthelmintic.

Stereotypical Behaviours

Stereotypical and redirected behaviours such as wind-sucking, crib biting, weaving and box walking have long been associated with lack of forage and lack of free-roaming exercise. Research has linked the development of these behaviours strongly with management of the foal at weaning amongst other factors later on in life. It is strongly recommended by experts that weaning should take place in the paddock and that weanlings should be kept out at grass after weaning. Crib-biting, windsucking and weaving are also linked to a significant increase in the risk of recurrent colic. To limit the risk of your horse developing stereotypical behaviours:

- Manage your horse from the paddock as much as possible
- Provide a calm environment where the horse can display natural behaviour patterns
- Provide social contact
- Avoid creep feeding foals on concentrates where possible
- Ensure weanlings are out at pasture during and after weaning process

Robust pasture helps

The main aim is to ensure your pastures are able to provide your horses with sufficient nutritional requirements and a strong enough sward to withstand the display of their natural behaviour patterns. This is achievable by either choosing one of our standard mixes or our highly knowledgeable staff will be able to advise you on a mix that is suitable for your land and horse's needs. The weanling herbal ley is also specifically designed to provide your foal with the nutrients it requires so the need for concentrate creep feed is minimised.

Wormer Resistance

Resistance to the three main classes of anthelmintics (wormers) for small strongyles is a major concern to the industry. The health issues related to worm burdens include weight loss, chronic colic, diarrhoea and a life threatening inflammation of the large intestine. Management practices to reduce worm burden and limit wormer resistance would include:

- Include faecal egg counts in your management system and act according to the results
- Administer wormer according to weight of the animal
- Include species in your sward that have natural anthelmintic effects such as chicory, sainfoin or birdsfoot trefoil
- Avoid overstocking
- Regularly remove droppings from paddocks
- Rotate paddocks or co-graze with sheep or cattle to break the life cycle
- Harrowing in dry and hot conditions only

Some plants help reduce worms

Sainfoin, chicory and birdsfoot trefoil are all proven to have natural anthelmintic properties both in fresh and conserved form.

Respiratory Disease

Recurrent Airway Obstruction (also known as either heaves or Chronic Obstructive Pulmonary Disorder) in horses is linked with horses being stabled, bedded on straw and being fed hay. The management advice for horses with RAO is to turn out onto pasture and avoid feeding hay if at all possible.

Extending the grazing season helps

To ensure your paddocks have sufficient grazing all year round the sward needs to include a mixture that contains species that will complement each other in terms of growing season. Although the mixtures we supply are designed to address specific requirements each mix has been developed to have as long a growing season as possible within those parameters. However there are mixtures that will provide a longer growing season than others. Speak to a member of the team to advise you considering your specific requirements.

How to improve pasture

Over-seeding

Overseeding can be a very useful, low cost way of improving existing pasture, which may have become thin and tired with age or damaged through over-grazing.

One of the most important considerations when thinking of overseeding is that the existing sward is a competitive environment for any new seed to establish in. This is because the existing grasses have a developed root system and leaf area which puts it in direct competition with new seedlings which must develop a robust root structure in order to survive. We usually look to the ryegrass species, often perennial ryegrass, when we think of an overseeding mixture, this is because ryegrass seed compared to other species is the largest and most competitive, which gives it the best chance to survive and thrive in an existing sward. It is understandable that some owners would prefer to use non ryegrass species if laminitis or other health issues are a problem. Be aware that non ryegrass species like Timothy, cocksfoot or the fescues used in an overseeding situation can be less competitive, reducing the likelihood of a successful establishment.



Overseeding is also a situation in which other species can be added to a sward, this includes legumes like white clover, as well as forage herbs like chicory, burnet and sheeps parsley. But the same principle apply in that these species can sometime struggle to establish in an existing sward.

There are several key rules which should be followed when preparing a pasture for overseeding, to ensure the establishment rate is as high as possible:

- Cut or graze the field before overseeding to reduce the competitiveness of the sward.
- Harrow the ground with chain-harrows or light spring tines, which helps to remove the dead thatch in the base of the sward and provide space and soil contact for the new seeds.
- Broadcast or shallow drill the new seeds, depending on the machinery available, ideally just before rain is forecast to ensure adequate moisture for germination.
- Roll the new seeds directly after sowing to ensure good seed to soil contact and lock in moisture.
- Once the seedlings start to germinate, do not graze the area for 5-6 weeks, while the seedlings are vulnerable as this may cause damage. Once this time period has passed, graze lightly to avoid over grazing.

See page 16 for our over-seeding mixtures.

Reseeding

Reseeding is the most reliable way to create a productive, useful pasture. It involves re establishing a new grass sward, by cultivating the ground and starting from scratch. You may consider reseeding if the existing pasture has become tired with low productivity, especially as some species have a limited lifespan and may fade away in time, allowing indigenous grass and weed species to enter the sward.

If a full reseed is planned on a piece of ground that has been in grassland for many years, it may be useful to carry out a soil test. This will give a good indication of the key nutrients available (Phosphate, Potash and Magnesium) and the PH of the soil. The average cost of a basic soil sample is around £60 for 6 samples to be tested. Soil sampling before a reseed is important because it ensures that the key nutrient levels and pH are available for reliable establishment and growth.

A seed bed is usually created by ploughing up the existing sward or another cultivation technique. The seed bed is then usually worked into a finer tilth with several more cultivation passes. A fine, firm seedbed is very important as this will provide the maximum seed to soil coverage, which will again ensure the best possible establishment.

The seed can be sown onto the prepared seedbed in a variety of methods, which will depend on the machinery that is available; these vary from broadcasting seed on the surface and harrowing and rolling it into the surface, or seed drills which scratch the soil surface and distribute the seed evenly.



After sowing the seed the ground should be well rolled to create a firm seed bed, which helps to lock in moisture and provide good anchorage for the plant roots. A firm seedbed is especially important in equine use because it reduces the amount of damage caused by the horse hooves.

The horses should not be allowed to enter or graze the area for at least 5-6 weeks after reseeding, because the young seedlings are vulnerable to damage from trampling and overgrazing. Once this time period has passed, the area should only be lightly grazed, again to avoid damage to the new plants.

General Grazing Seed Mixtures

Horses requirements are sometimes different to that of sheep and cattle. These mixes have been created specifically with equine needs in mind.

MINERAL RICH NATURAL PONY Paddock SEED MIX

Code: MIXPP



This is another non-ryegrass mix which contains a wide selection of traditional grasses and herbs, such as meadow fescue, cocksfoot, meadowgrasses, ribgrass, burnet, yarrow and sheeps parsley which lift valuable trace elements from the soil and provide a healthy, balanced diet. Research links consumption of ryegrass with an increased risk of laminitis so by avoiding ryegrass the pasture offers the horses and ponies a pasture rich in nutrients and minerals but not in sugars. This type of mixture is slower to establish than those with ryegrass, but the resulting turf is dense and more resilient. Sow no later than mid September.



BASIC HORSE PASTURE SEED MIX

Code: MIX7



This is our standard mix which provides a fast establishing dense turf for grazing or the occasional cut of hay. Along with meadow fescue, creeping red fescue, Timothy and smooth meadowgrass it does also contain ryegrass so would not be suitable for horses or ponies that are prone to laminitis or Equine Metabolic Syndrome.

LOW ENERGY EQUINE PASTURE SEED MIX

Code: MIX13



This is a more persistent, non-ryegrass mix providing good quality, diverse forage with a low sugar content. Containing plants including Timothy, various fescues, crested dogstail, smooth stalked meadowgrass and bentgrass, it will take a little longer to establish than a ryegrass based mix, but will provide a dense, resilient turf with balanced forage for grazing and hay.

Stud Grazing Seed Mixtures



PROTEIN PACKED BROODMARE GRAZING SEED MIX

Code: MIXBM



This mix would suit paddocks used for broodmares throughout the year but specifically it is aimed at mares during conception and lactation. The mix is higher in protein than our standard mixes and contains plants such as cocksfoot, creeping red fescue, Timothy, sainfoin, lucerne, white clover, birdsfoot trefoil and sheeps parsley, these being high in Iron, vitamins A and C and which has been linked with an increase in fertility in other animals.

NUTRIENT BOOST FINAL TRIMESTER SEED MIX

Code: MIXSTF



This mix can be sown in a strip or as a whole paddock. It has been created specifically to meet the nutritional requirements of mares in their final trimester. The mix is high in protein and also contains herbs such as sheeps parsley, chicory, sainfoin, burnet forage and yarrow, ensuring the mare has a supply of essential nutrients and minerals, including copper via the yarrow plant. Deficiencies in copper during the final trimester have been linked with Developmental Orthopaedic Disease.

CONSTANT ENERGY WEANLING AND YOUNGSTOCK GRAZING SEED MIX

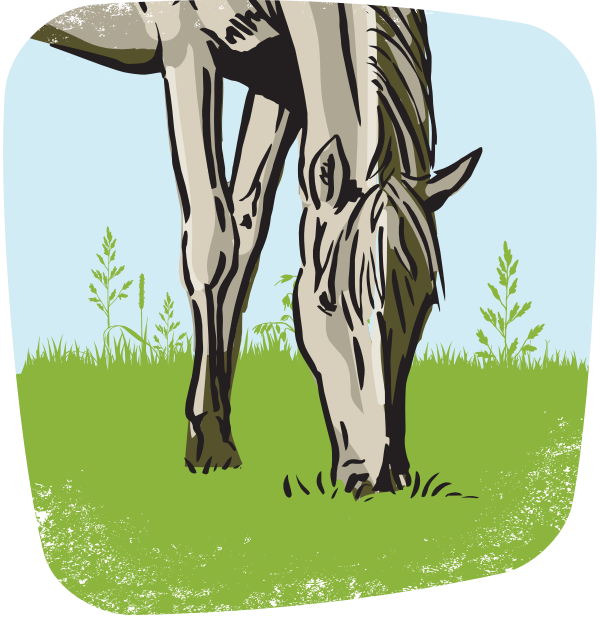
Code: MIXSWY



This mix has been specifically designed to provide consistent energy supply throughout the season. It includes fescues, smooth stalked meadowgrass, Timothy and sainfoin, making it high protein and yet not too high in overall energy. The inclusion of herbs such as yarrow and sheeps parsley ensures the pasture is rich in nutrients and minerals such as calcium which is essential for strong bone development.

call us on 01608 652552

Specialist Grazing Seed Mixtures



These mixtures have been created to meet the needs of specific groups of horses.

If you are going to have multiple groups of horses with differing needs grazing the same land it would be advisable to ask our team for the most suitable grazing mix to meet all your requirements.

HIGH CARB COMPETITION GRAZING SEED MIX

Code: MIXCOMP



This mix meets the nutritional requirements of high performance competition equines. Containing species such as Timothy, smooth stalked meadowgrass and crested dogtail with forage herbs including burnet, yarrow and sheeps' parsley, as well as providing the necessary energy output from the productive ryegrasses, it sustains horses at pasture all year round.

LOW ENERGY RETIRED AND REHAB SEED MIX

Code: MIXRR



This mix includes low energy grasses such as meadow fescue, Timothy and meadow grass together with yarrow which improves blood supply and circulation to peripheral blood vessels making it excellent for conditions such as laminitis, navicular and rheumatic conditions.

A note about the cost of mixtures

As ryegrasses are so widely used in agriculture they are naturally less expensive. Therefore the mixtures that contain other grasses instead of ryegrass are more expensive but this is not a reflection of the quality of that mix.

Surface Seed Mixtures

Good grass surfaces are key for exercising horses safely and effectively.

High sowing rates create dense turfs which withstand heavy equine usage. The species chosen ensure a uniform surface and maximum cushioning for the horses without affecting performance if managed correctly.



HARD WEARING RACECOURSE, GALLOP AND CROSS COUNTRY

SEED MIX

Code: MIX8

This mixture of 50% creeping red fescue together with dwarf perennial ryegrass and smooth stalked meadowgrass is very dense and resilient, the spreading grasses that fill bare patches.

GOOD LOOKING QUALITY FINISH ARENA

SEED MIX

Code: MIXQFA

This mixture of 55% dwarf perennial ryegrass together with slender creeping red fescue and smooth stalked meadowgrass has been designed as a hard-wearing exercise surface which will provide a fine, aesthetically pleasing finish.

GOOD LOOKING

POLO PITCH

SEED MIX

Code: MIXPOP

A resilient turf that has been designed to stand up to the demands of the sport. Smooth stalked meadowgrass helps reduce slipping during tight turns and catstail quickly regenerates new shoots if damaged by wear and tear.

Sowing rates of surface seed mixtures

Sowing rates for these mixtures are higher than grazing or hay mixtures. We recommend a minimum sowing rate of 50 kg per acre (125 kg/ha). This rate can be increased to 100 kg per acre (250 kg/ha) for faster establishment.

call us on 01608 652552

Hay/Haylage Seed Mixtures

LOW ENERGY
TRADITIONAL HAY MAKER
SEED MIX
Code: MIXHM



This traditional hay meadow mix of perennial ryegrass, meadow fescue and Timothy is very long lasting, and although slower to establish than a straight ryegrass ley, it will go on to provide good quality, bulky hay crops with low disease levels for many years. Once cut it can be used for aftermath grazing.

For most horse owners preserved forage forms a vital part of the horse's diet throughout winter or when a horse is stabled.

Hay can be made from any of our grazing mixtures but we have developed some mixes that are beneficial for both the horse and farmer. The legume based mixes (lucerne and sainfoin) provide a higher protein hay or haylage than grass hay and have the added benefit of fixing nitrogen into the soil for farmers. The choice between hay and haylage will depend on your horses requirements and personal preference.

Seed Mixture Choice

The seed mix you choose is very important because not all seed mixtures are the same, and every situation will be slightly different. For example some mixtures may exclude grasses with a high sugar content if laminitis or other health conditions are an issue, while other seed mixtures may contain a high proportion of herbs to bring up nutrients from depth and make them available to the animal.

This is where we can help!



HIGH CARB

HARD HORSE HAY SEED MIX

Code: MIX9



This mix of Italian ryegrasses is devised specifically for the production of hay or haylage. Lasting two years, and with good disease resistance it produces a consistent sample of hard hay. Although it can be grazed, this is principally a cutting ley. Sow in autumn to provide stemmy hay the following spring. Spring sowings result in soft, leafy grass unsuitable for hay production until the following year.



PROTEIN PACKED

LUCERNE SEED

Code: MARSH



Lucerne should be grown as a four or five year temporary ley. For specialist use it is made into hay for the equine market where it is known as alfalfa. The use of culture to provide the correct type of bacteria to initiate nodulation so ensuring nitrogen fixation is considered essential for lucerne. Mix with seed on the day of sowing.

PROTEIN PACKED

SAINFOIN SEED

Code: SAI




On the right ground this is a superb crop. Lasting for four years or more, it provides one very large cut of hay or haylage and aftermath grazing for sheep. Sainfoin is a traditional crop which was primarily used to feed working horses and may well have its role re-invented for the equine market today.

Repair Seed Mixtures

QUICK-GROWING TRACK AND ARENA REGENERATION SEED MIX


Code: MIXTR



A fast-establishing mixture of ryegrass, creeping red fescue, crested dogstail and meadowgrasses which provides a thick grass cover for use on poached areas or to improve pasture quality.

QUICK-GROWING PASTURE OVER-SEEDING SEED MIX

Code: MIXOSH



A long duration mixture of ryegrasses for over-seeding grazing pastures where more forage is required.


Overseeding can be a useful, low cost way of improving existing pasture, which has become thin and tired with age or damaged through over-grazing or use as outlined in more detail on page 8.

To recap, several key rules should be followed when preparing a pasture for over-seeding, to ensure the establishment is as good as possible:

- ▶ Cut or graze the field before over-seeding to reduce the competitiveness of the sward.
- ▶ Harrow the ground with chain-harrows or light spring tines, this helps to remove the dead thatch in the base of the sward and provide space and soil contact for the new seeds.
- ▶ Broadcast or shallow drill the new seeds, depending on the machinery available, ideally just before rain is forecast to ensure adequate moisture for germination.
- ▶ Roll the new seeds directly after sowing to ensure good seed to soil contact and lock in moisture.
- ▶ Once the seedlings start to germinate, do not graze the area for 5-6 weeks while the seedlings are vulnerable, as this may cause damage. Once this time period has passed, graze lightly to avoid over-grazing.

QUICK-GROWING Paddock and Gateway REPAIR SEED MIX

Code: MIXPAD



A fast-establishing mixture of ryegrass, creeping red fescue, crested dogstail and meadowgrasses which provides a thick grass cover for use on poached areas or to improve pasture quality.

Aesthetics of grazing forage and presented forage

We have all been brought up to think that good grazing needs to look aesthetically pleasing; the sward should be homogenous and a strong green in colour. Hay should smell sweet and contain few stalks.

This thinking is rapidly becoming outdated and we in the equine world need to change our mindset.

The reversion back to more traditional leys that contain a diverse mix of species is healthier for the horse and for the environment but it is not always the most appealing on the eye. The majority of current equine pastures contain a high level of perennial ryegrass that look uniform in colour and appearance however the ryegrass rich pastures lack drought resistance, vital trace minerals and are high in sugars.

Sainfoin and lucerne hay are naturally more stalky than pure grass hays and challenge our traditional views on what the horse finds palatable, however they are more nutritious, can actively benefit the horse from a health point of view and are a source of natural fertiliser for your land.



call us on 01608 652552

Pasture Management Advice

Overstocking

Overstocking is a common problem which can lead to poor pastures. It is one of the main causes of high worm burdens and can be the reason pastures lack nutritional content to support the horses on it.

Avoid overstocking by:

- Rotational grazing, split paddock and rest areas
- Have a sacrifice paddock – this can be used as a starvation paddock or if your land needs to rest
- Plant wide variety of species to maximise forage production

Compaction

Compaction is also a common problem in equine pastures because of the nature of the animal's hoof conformation. Compaction leads to stressed plants whose roots cannot access the nutrients, water and air necessary to grow. Compaction will also lead to poor drainage which can end in poaching and death of the plants.

Avoid compaction by:

- Aerating soil either by sub-soiling if very bad or soil slitter
- Avoiding overstocking
- Avoid heavy machinery going on pasture land as much as possible
- Including species with deep roots that will help keep the soil aerated

Parasite Control

The horse's natural way of keeping its worm burden down is to create latrine areas, however when we overstock or when there is a shortage of food, the horse grazes closer to these latrine areas and therefore ingests worm larvae.

Minimize worm burden by:

- Avoid overstocking
- Regular removal of droppings
- Test new horses before introducing to groups, worm if necessary
- Rotational grazing
- Grazing cattle or sheep
- Include plant species that have anthelmintic properties in your sward such as sainfoin, birdsfoot trefoil and chicory (only include chicory if you haven't got horses ponies with insulin resistance).

Weed Control

Not all weeds are bad for the horse but they do need to be kept under control otherwise they can take over. Some are positively good for the horse such as dandelion which contains high levels of trace minerals as well as vitamin A, B, C and D. Chickweed is high in copper and vitamin A and wilted nettles have been linked with improvements in sweet itch and allergic conditions. There are some weeds that are poisonous and must be rigorously controlled such as ragwort.

Minimise weed growth by:

- Topping before the weed goes to seed
- Ensure the health of your soil, poor soil often encourages weed establishment
- Reseed bare patches in your pasture

Poor Drainage

Many equine pastures suffer from either water logging or poached areas, this can be avoided in some cases but is dependent on soil type, topography and ground water table. If the land is compacted the drainage will be compromised so do read the above section on compaction. Growing seasons of grasses can be shortened by poor drainage as fields have to drain sufficiently:

- Address soil compaction issues
- Introduce field drains with a mole plough if needed
- Ensure drainage ditches are kept clear
- Include deep rooting plant species in seed mixtures

Fertiliser Use

Ideally fertiliser use would be kept to a minimum and only used in conjunction with results from a comprehensive soil analysis. By sowing the right species for your land and managing your paddocks there should be little requirement for fertiliser.



COTSWOLD SEEDS

Cotswold Seeds was founded in 1974 and deals with over 10,000 farmers throughout the UK. The company has a specialist interest in grass and legumes and offers advice on growing and managing these crops to those working in the livestock, arable and horticultural sectors. The company is also involved in a wide range of research projects across the EU.

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