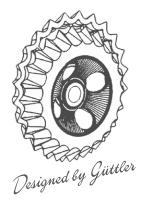
Professional pastureland maintenance from Güttler



GreenMaster

The 5-in-1 system for pastureland and cultivation!





Ensuring the very best pastureland!





Curiosity and patience lead to innovative solutions!

As a specialist in cultivation, we could never have dreamt of a day when we would also be able to set standards with regard to pastureland. What we originally set out to do was to test a trailed roller and because of a lack of free agricultural crop land, we tested it on pastureland. Only afterwards did I notice the "hoof print" left behind by our roller. This aroused our curiosity. After a challenging, but very enriching initial period, in 2005 we exposed the GreenMaster. Today, we provide a system that covers all areas of professional pastureland care, from rejuvenation and new seeding right through to after-care, so that you can be sure that you will achieve the very best pastureland all year round!

> Designed by Güttler

Güttler: the roller pioneer

"Re-compaction and soil structure" – this has been the Güttler motto for more than 35 years! When Fritz Güttler developed and patented the prism rings[®] in 1976, the

guiding principle was the primary idea of creating the ideal soil structure for a seedbed. The sheep's hoof effect of the Güttler rollers has since become a well-known concept. Since then, the prism roller has been further developed and is nowadays probably the most effective tool to create an ideal seedbed: firm and fine underneath, loose and crumbly on top.

The key part of our range: the Güttler prism roller





Distribute grass seeds (with broadcast seeder) and roll into the turf using the Güttler roller.

Over-seed and roll in!

The Aulendorf State Institute and Research Centre for Livestock Farming and Agriculture compared this procedure with a special drill machine (slit seeder). The result:

"Despite a lower seed rate, the Güttler roller performed just as well as the slit seeder!"



Flat roller: The extremely high individual weight can lead to a lack of air in the roots, which stagnates growth.



The "golden hooves" effect

The famous sheep's hoof effect makes the difference!

305 prism points per square metre:

- Greatly stimulates the tillering of grass
- Controls broad-leaf weeds
- Incorporates grass seeds directly into the turf
- Creates the required soil contact (selective exertion of pressure)

Result:

- Thick, durable turf
- Consistent, high quality grass yield

Retain precious pastureland crops for years with the prism roller.

The HarroFlex pastureland harrow: aerating and dethatching



Despite increased effectiveness, the HarroFlex is the most compact, multi-purpose pastureland harrow on the market.

Achieve more with fewer, but more robust tines

The number of tines a pastureland harrow requires depends on which tasks it must carry out. Traditional pastureland harrows must comply with two requirements that are totally contradictory in terms of the design of the tines:

1. Over-seeding

By using as many flexible tines as possible, the turf is opened as much as possible with circular tine movements. The grass seeds are distributed between the tines into the open soil. Finally, to achieve the necessary soil contact, the ground should be rolled.

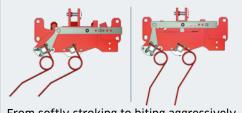
2. Dethatching

Dead grasses and common panicles must be removed so that repair seed receives light and air. In order to achieve the optimal effect, use the most rigid tines possible that will bite with the required sharpness.

With the design of the traditional harrow, it is important to find

Thanks to the GreenMaster, the Güttler roller utilises its golden hooves effect to distribute the repair seed effectively and reliably into the soil and to ensure soil contact at the same time. This means that the HarroFlex only needs to fulfil a single demand, namely to ensure that the turf is effectively dethatched and aerated. Significantly fewer, but much more robust tines with 12 mm Ø and 7.5 cm tine spacing provide the necessary bite for this task.

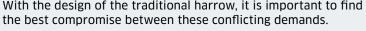
Adjustable tine design



From softly stroking to biting aggressively

Rapidly and easily adjusted

Its wide adjustability range and simple operation ensure optimum effectiveness. Even with a 7.50 m working width, four actions are all it takes to adjust the tines.





Levelling board This is used to level molehills. Positioned above the spindles, it is shaped like a parallelogram, so it is able to adjust to the ground and is protected against overloading.

Ripper board

(for heavy soils with severe thatching, can be retrofitted) Double tines made from 12 mm sprung steel double the number of tines, without making the machine a centimetre longer. Will also level molehills.

The HarroFlex harrow and roller can be quickly attached



Step by step to create a complete system

Customers already using Güttler roller for cultivation, can add the HarroFlex harrow and seeder at any time.



Modular system

Whether the HarroFlex harrow and Güttler roller is 3.0 or 7.5 m wide, they can be quickly detached using the quick coupling and 2 bolts. This means that the HarroFlex and the roller can be used as mounted machines in their own right!

The pneumatic seeder is simple and robust!



Achieve more with less seed:

the seeder distributes seed precisely and in close proximity to the soil. The rate depends on the surface and distribution is less vulnerable to the wind. The machine turns precisely – like a drill machine. Seed quantities for grass: Approx. 60 kg/ha as standard, up to 250 kg/ha if desired. Tank capacities:

200/410 l and 600 l Two dosing rolls (grass and cover crops) are included as standard, additional rolls are available if required.



Proven reliability:

- Precise and robust
- Easy to operate
- Without electrics (unless requested)
- Alternative feed rolls available on request

The spring treatment for your pastureland



Harrow, roll and over-seed in one pass

Giving your pastureland the best possible start in spring:

- Level molehills and manure
- Aerate the turf remove old thatch
- Over-seed, close holes
- Re-establish soil contact



Distributing manure using the GreenMaster 300

Holes in turf must be closed quickly



Holes often appear in pastureland at the end of winter, and are caused by:

- Over-wintering
- Damage done by mice
- Molehills
- Damage to grass caused by machine traffic

The GreenMaster rectifies damage like this quickly and efficiently in a single pass:

- By levelling
- Creating fine soil for seeding
- Optimally distributing grass seeds
- Re-establishing seed to soil contact
- · Stimulating existing turf to tiller

Ensuring pastureland is always high-quality



Over-seeding at the right time

Intensive use and the natural ageing process of grasses leads to a slow decline in the grass stock, which is why re-seeding must take place regularly and seed must be given a chance to grow.

The late summer or early autumn tend to be the best times of year to over-seed:

- The old turf is no longer growing as rapidly as in spring, so there is less danger that the over-seed will become suffocated.
- The water supply is more reliable than in spring. At the very least, the plants can rely upon dew being formed at night.
- The soil is warmer than in spring
- The young seed is not as frequently exposed to the passage of vehicles, as over-seed sown in spring.
- Pastureland enters the winter in a good condition

Depending on the region, over-seeding can take place up until the end of September. Did you know that young rye grass that has established itself is more resistant to winter than old rye grass? Reseeding grass without the risk of adverse weather is simply not possible! If there is already sufficient moisture for the seeds to germinate, but the next 4 weeks remain dry, hot and windy, nothing can be done and even the very best technology cannot help. One way to overcome this is to subdivide the annual quantity of seed you plan to sow, sowing some of the seed in spring and the rest in the late summer. That way, you will significantly reduce the risks caused by adverse weather!

For example: With a seed rate of 5 kg/ha of rye grass and a thousand seed weight of 2.5 g, you will have at least 200 seeds per square metre.



Common panicles – an increasing problem



An often unrecognised problem

- Soil compaction leads to a lack of oxygen in the root zone.
- Precious grasses fall out.
- The roots of common panicles immediately migrate into the opened holes.
- Common panicles slowly dominate.

The surfaces look green, but on closer inspection problems appear:

- Initially, the crop and forage quality still appear fine.
- Then, however, the yield drops off.
- Feed intake is reduced, as the livestock do not like the dull, fusty taste of common panicles.



Soil compaction is almost unavoidable. It damages precious grasses and creates favourable conditions for common panicles.

The shallow rooting common panicles can be effectively removed from dry soil thanks to the "biting" design of the HarroFlex. Because mainly heavy soils are involved, harrows equipped with many lightweight flexible tines tend to be at a disadvantage.

The first harrow with a "powerful" bite



Common panicles are picked up by the harrow, raked and removed. Finally, grass is sown.

Recondition around 20% of your pastureland each year – in 5 years, the task will be complete. You can retain your pastureland in its reconditioned state by means of regular care and reseeding.



This is not the third cut, but common panicles! People are often surprised by the amount: 25 m3/ha of common panicles is not uncommon. You must remove it at all costs!



Precious grasses root deeply into the soil and are well anchored in the soil. There is no danger that you will harrow out the rye grass, along with the common panicles! The over-seed is then able to establish itself in the gaps. This picture shows the grass, 3 months after reconditioning – success!

GreenMaster - more than meets the eye!



Repairing damage caused by wild boars:

The soil is harrowed cross-ways several times, at speeds of between 9 to 12 km/h.

The soil should be dry and crumbly, and not turn into mud. Over-seed, so long as no more frost is expected.



Level any damage caused by wild boars with the power harrow ... and immediately over-seed with the prism roller[®].



Maintenance of sports fields: what works for pastureland ... can't be wrong on sports fields.

The 5-in-1 system for maintaining pastureland and cultivation!



One machine – 5 applications!

- Roll winter seeds exposed to high levels of frost promptly in spring, encourage tillering
- Establish undersown crops in corn or grain
- Combat European corn borer

- Roll before and after seeding
- Establish cover crop
- Pastureland maintenance all year round including new seeding



Stimulate winter seeds growth, establish undersown crops in spring cereals.

Roll before and after seeding.



Seed roller in front:

- Balanced axle loads
- Soil protection
- Improved field emergence



Combat European corn borer much more effectively, using less fuel. Corn stubble is folded and broken.

GreenMaster 300 and GreenMaster 300 Alpin



GreenMaster 300 as rear unit:

Weights (complete with levelling board)

• With 45/50 cm Ø roller = approx. 1,700 kg

• With 33/38 cm Ø roller = approx. 1,300 kg We recommend the lighter 33/38 cm roller for alpine conditions. Each rear unit can be converted to the "Alpine" version!

Seeder:

- 200 I tank capacity = approx. 50 kg grass seeds
- Electric fan
- For a large seed volume and coarse seeds: PTO, hydraulic or twin electric fan available on request

GreenMaster 300 Alpin

Weights:

- Front: HarroFlex = approx. 500 kg
- Rear: 33/38 cm Ø roller + seeder = approx. 750 kg Balanced weight distribution, low centre of gravity, secure operation.



Combat European corn borer, establish winter greening



Cultivate triticale

Cultivate triticale with the GreenMaster

Establish undersown crops in autumn or spring cereals and in addition stimulate growth

GreenMaster 600 Alpin





Ground contouring:

Each of the two 3-metre folding elements is supported by two gauge wheels and adapts itself to the contours of the ground. The heavy duty harrow tines pass over the ground, levelling the unevenness of the soil.



Balanced weight distribution



Transport positions: Field of view approx. 120 cm wide

GreenMaster 600 Alpin

Weights:

• Front: HarroFlex = approx. 1,500 kg

• Rear: Matador 610 S + seeder = approx. 2,600 kg Balanced weight distribution, low centre of gravity, secure operation.

- Hydraulic folding on 2.5 m transport width
- 410 | seeder (= approx. 100 kg grass seeds)
- Hydraulic fan

Favoured by agricultural contractors: Multi-purpose use, year-round efficiency, rapid amortisation



For maize seed in the front

Combating European corn borer

Undersown crops in maize or cereals, cultivate cover crops

GreenMaster 640 and 770



GreenMaster 640

- HarroFlex harrow 6.0 m = 1,500 kg
- Master 640 trailed roller = approx. 3,350 kg
- 660 I seeder (approx. 150 kg grass seeds) incl. mounting kit and step = 350kg
- Transport width: HarroFlex: 2.5 m, roller: 3.0 m

GreenMaster 770

- HarroFlex harrow 7.5 m = 1,600 kg
- Master 770 trailed roller = approx. 3,800 kg
- 660 I seeder (approx. 150 kg grass seeds) incl. mounting kit and step = 350kg
- Transport width: HarroFlex: 2.5 m, roller: 3.0 m

CUSTOMER FEEDBACK:

Hansa Agrar, Zeven:

"We purchased our first GreenMaster 640 back in 2008 in order to offer provide an effective, professional pastureland maintenance service to our agricultural clients. The GreenMaster concept was well-received by our farmers, so much so that we purchased more machines and now currently have six GreenMasters in operation.

As well as pastureland maintenance in spring, we have also provided a service since 2009 to control European corn borer, while at the same time establishing autumn cover crop. The machines are working very well. We can manage several hundreds of hectares a year per machine."



Combating the European corn borer

Three of the six GreenMasters owned by Hansa GmbH.

GreenSeeder 600 and 750



GreenSeeder 600 / GreenSeeder 750

- Transport width 6.0 m/7.5 m transport width 2.5 m
- Approx. 1,400 kg/1,550 kg (with levelling board)

Provided as standard:

- Robust 12 mm harrow tines
- 4 gauge wheels
- Warning boards with lights

Optional extras:

- Levelling board
- Ripper board
- 200 I pneumatic seeder (with step)
- Coupling frames to attach to a Mayor or Master rollers

Do you already own a Master 640, 770, 820 or a Mayor 640?

If so, simply attach the GreenSeeder and away you go!





GreenSeeder 600 with Mayor 640attached / 100 bhp tractor

2.5 m transport width



Re-compaction and soil structure - our guiding principles

Güttler is the pioneer of re-compaction. When Fritz Güttler developed and patented the prism rings[®] in 1976, the guiding principle was the primary idea of creating the ideal soil structure for a seedbed. The sheep's hoof effect of the Güttler rollers has since become a well-known concept.

The Güttler roller with the golden hoof.

Designed by Güttler

We are not just mechanical engineers: you and your crop farming requirements are our primary concern. It is precisely because we understand the needs of crop farming that we are able to manufacture the necessary technical solutions. So why not take advantage of our many decades of experience?

The name Güttler stands for quality that you can count on in machine and crop production!



Avant and Duplex **Front Press** Produces an improved seedbed with fewer passes and less diesel. Conserves the tractor, device and soil!

Mediana

This medium-weight seed roller from Güttler protects both the tractor and the soil. Perfect for root crops, vegetables grain and rapeseed. for front and rear!



Matador, the multifunctional device for front and rear, for fields and pastureland, incorporating a strong front sowing roller, a pastureland roller at the rear. Used to combat the European corn borer.





Simplex prism roller[®]

The solution when it comes to power harrowing: made from synthetic materials, the Simplex is up to 50% lighter, making it unique in the world! Non-contact scrapers and easy to pull!

Mayor, Master and **Magnum trailed rollers**

For the perfect seedbed: protects against capping and erosion, protects the soil, unbeatable selfcleaning! Excellent on pastureland.

SuperMaxx[®]

Double the ground coverage and half the fuel consumption. The yearround device for level stubble processing, weed control, mixing in slurry and seedbed preparation.



Healthy crops – reliable yields!