

# The best forage.

Healthy animals. More success.



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**PÖTTINGER**



# Forage quality is the key to your success.

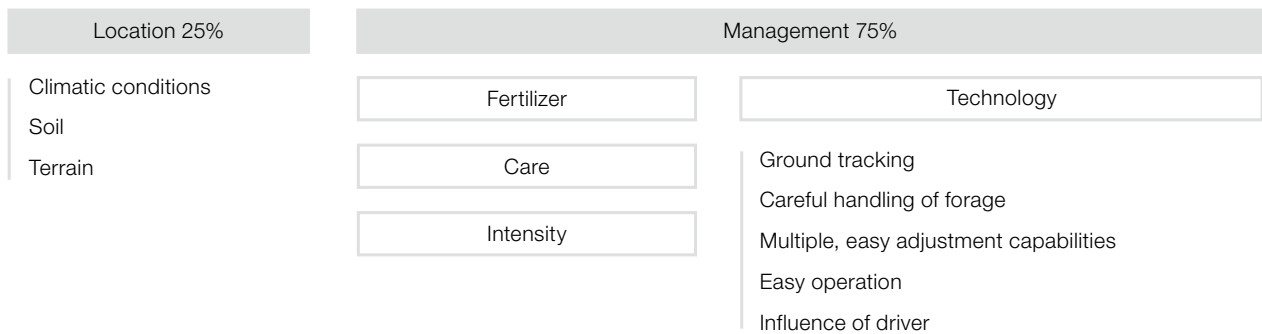
## **How best base forage affects milk and your business**

Better forage keeps animals healthier. Healthier animals produce more milk. And more milk means more success for your business. As a farmer you will already know that at every stage it is worth improving the quality of base forage as far as possible. The bottom line is that the highest quality base forage is the cornerstone for healthy livestock and decent profit in your business. But what can you do in practice to improve your forage? There are a number of key factors that influence quality. These include the location, farm management, harvesting technology and the skill of the driver during harvest. Find out over the following pages how and to what extent you can optimise these factors.



Our Happy Cow stands for healthy and happy cows. That's because cows remain healthy and produce more milk if they are fed the best base forage. This increases their yield, and in turn makes you happy too. A happy ending for everybody!

**What are the influence factors for the best forage?**



## Good base forage is no coincidence!

Better base forage quality reduces concentrate costs and promotes livestock health. If the forage is tasty and has the right structure then animals will eat more of it and ruminate more efficiently. In addition to high energy and protein content, trace elements also promote high milk yield.

**Read on to find out more about the main factors that influence the quality of base forage:**

### 1. The location

Approximately 25 % of the success of a farm business depends on its location. The achievable base forage volume is a result of precipitation, climate and ground quality. Each location has its own climatic characteristics, which farmers are able to make the most of with some ingenious farm management. In Allgäu (Bavaria), for example, they manage 5 cuts per year, while in Finland only 2 hay harvests are feasible – but with suitably large volumes each cut.

### 2. Farm management

How well you manage, plan and make decisions, influences the quality of your base forage by up to 75%. These examples show what you can achieve with the right farm management.

**Fertilizer:**

Fertilizer must be tuned precisely to each scenario in order to achieve optimum results and a dense crop. Because suitable farmyard manure keeps the clostridia content low, it can prevent butyric acid forming in silage. Butyric acid can cause major health issues in livestock and is present in 75% of all silage at 3 g/kg dry matter, with values of up to 12 g/kg dry matter no rarity.

**Care:**

High yield harvesting and good silage is only possible with targeted grassland repair sowing and levelling of molehills. A dense and strong grass sward is the basis for clean harvesting.

**Cutting time:**

Especially the first cut should be chosen to achieve a low raw fibre content, optimum energy content and tastiness of the forage.

### 3. Harvest technology

Output alone is not enough. The correct use of harvesting machinery is the prerequisite for bringing in protein-rich forage. You can also prevent dirt from entering the animals' forage. By improving the way harvesting technology is implemented, you can greatly reduce the level of contamination.

### 4. People

In addition to applying the right harvesting technology, the skill of the driver also has a significant effect on the quality of the forage. That is because each working step from mowing to ensiling must be performed professionally - and that needs a great deal of experience and attention to detail.



# Best base forage quality. More success in the shed.

Tasty and clean forage.  
The basis for your success.

## Best forage preparation

Tasty forage with an optimum structure increases forage intake and is the best preparation for the rumen.

## Best nutrients

In addition to high energy and protein content, trace elements are also required for high milk yield and healthy livestock.

## Less concentrates

Better base forage quality reduces concentrate costs and promotes livestock health.

## Healthier animals

Healthy cows return a higher milk yield and improved fertility. Lower vet costs and longer utilisation increase your financial success.

## Better milk yield

High quality base forage increases milk yield. This is a decisive factor in dairy cattle management.

## More profit

Around 50% of the production cost for a litre of milk is attributed to forage costs – your reason for getting everything right during base forage harvesting.

## Better quality of life

Farmers with the best forage quality achieve a higher profit from their dairy business. That makes base forage a sound start for a successful future. Healthy animals need less time and resources. Benefit from more free time!



# Base forage quality – under scrutiny

What do agricultural experts and vets say?



Dipl-TA Dr. Michael Neumayer,  
Neukirchen am Großvenediger

## **Don't feed your animals dirt.**

"There are many reasons why high raw ash content prevents economical milk production. Best base forage is required if cows are to remain healthy, fertile and produce a lot of milk. The base forage should be as free as possible of contaminants such as earth and sand. These contaminants - shown as 'raw ash' in this feed composition analysis - cause undesirable side effects. The function of the reticulum-rumen system is reduced. The yield ability, health and fertility of dairy cows suffers as a result."



Ing. Reinhard Resch,  
Research Institute Gumpenstein

## **Clean harvesting is the key to high quality base forage.**

"Soil and farmyard manure are breeding grounds for harmful micro-organisms. These micro-organisms reduce the quality of forage conserves through excessive decomposition of valuable nutrients such as sugar, proteins, vitamins, etc. They are also responsible for temperature increase in silos, the formation of butyric acid and decay. Every possible quality-improving measure needs to be implemented to ensure contamination-free, quality base forage is brought from the meadow into the cowshed."



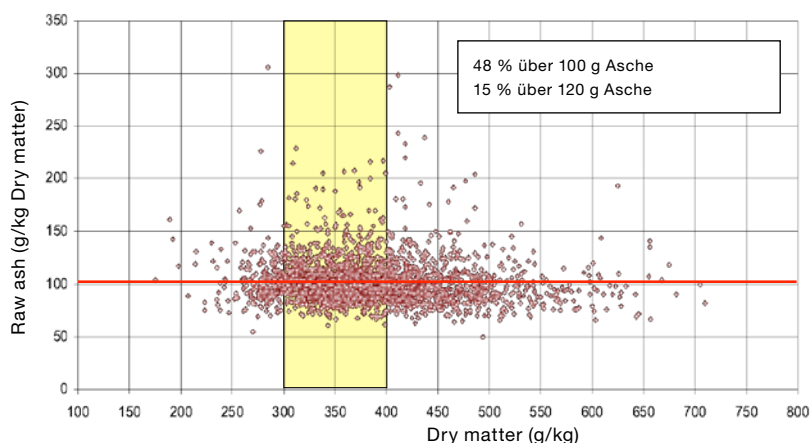
Dipl. ECBHM Dr. Johann Gasteiner  
Research Institute Gumpenstein

## **The best forage promotes the highest yield.**

"Clean base forage has a special significance for healthy livestock from several points of view. Ruminants consume essential raw fibres on demand, effectively preventing many illnesses related to the metabolism, especially over-acidification of the rumen. Only quality, flawless base forage is attractive enough to be consumed in sufficient quantities. Health hazards such as yeast fungus, mould and myriad undesirable bacteria multiply especially rapidly in low quality base forage. This poor quality base forage is not only consumed at a much lower rate, it also carries serious risks: lower milk yield, diarrhoea and loss of nutrition, fertility loss, increased infection rates with mastitis and cell count problems in the milk. Special attention should therefore be paid to the supply of quality base forage."

## Raw ash content in grass silage

(Silage project 2003/05/07/09)



Test report on raw ash content in grass silage (data: silage project 2003/05/07/09), Ing. Reinhard Resch, Gumpenstein Research Institute

## How to make money by producing clean forage:

Lactation days / Year	310 days
Yield per hectare	7500 kg DM/ha
Dry matter (DM) consumption grass silage per day	12 kg DM/Day
Reduction in raw ash due to optimum forage harvesting	1 %

Higher energy content with cleaner forage	
Dry matter (DM) consumption grass silage in lactation time	3720 kg
Higher energy content with cleaner forage	0.1 MJ NEL / kg dry matter
Higher energy concentration absolute per day	1,2 MJ NEL
Energy requirement for one litre of milk, 4% fat	3,17 MJ NEL
Higher milk production absolute per day	0,38 l
Higher annual milk production per cow	117 l

Higher forage consumption with cleaner forage	
Increase in forage consumption per 1% raw ash (RA)	0,2 kg/Tag
Increase in forage consumption per day	0,2 kg
Energy concentration of grass silage	6,2 MJ NEL / kg TM
Increase in energy consumption (absolute)	1,24 MJ NEL / Tag
Increase in milk production	0,4 l / Tag
Higher milk production over entire lactation	121 l

Higher milk production per cow and lactation	238 l
Milk price earned per litre	0,34
<b>Total benefit in Euros per cow and lactation</b>	<b>81 €</b>

There's not much you  
can do about the weather  
and ground ...







## ... Forage quality can be improved with advanced harvesting technology.

What does harvesting machinery have to do to create the right conditions for high quality forage? What is important is that they unite the right ground tracking and forage protection while offering high functionality that is easy to use.

### Optimum ground tracking

The better the ground tracking and lower the pressure on the ground during mowing, the lower the level of dirt entering the forage. During tedding, a jockey wheel enables precise adaptation to contours - even at higher driving speed. On the rake, tandem chassis in conjunction with additional jockey wheels ensure that the forage remains free of contamination at the same time as protecting the sward. A pick-up with perfect ground tracking is the final step towards best forage.

### Harvesting and processing to protect the forage

It is worth making sure that harvesting technology is implemented to operate as carefully as possible. Base forage rich in protein can only be harvested using the right harvesting machinery operated by skilful drivers. Output alone is not so important.

### High functionality

All machines in the harvesting process should be designed to deliver excellent ground tracking and forage protection. These systems should be easy to adjust and as convenient as possible to operate so that drivers can work efficiently and carefully.



# PÖTTINGER mowers. Ground tracking at its best.





Hydraulic lower linkage arm

## GROUND TRACKING

### ALPHA MOTION – a worldwide success story

- Supporting frame and guide arms react to every undulation.
- Large springs ensure uniform movement of the mowing unit with a vertical travel of 500 mm.
- These front-mounted mowers have an extremely low drag resistance and protect the sward.
- For tractors between 70 and 360 hp – regardless of model and size of front hitch.

## CROP PROTECTION

### Conserve forage with EXTRA DRY conditioner

- The new, rounded conditioner hood ensures smooth, protective forage flow to the rotor.
- The forage is placed in a loose and airy blanket – accelerating the drying process.
- It is easy to adjust the conditioning intensity.

## EASE OF OPERATION

### Advantages through functionality

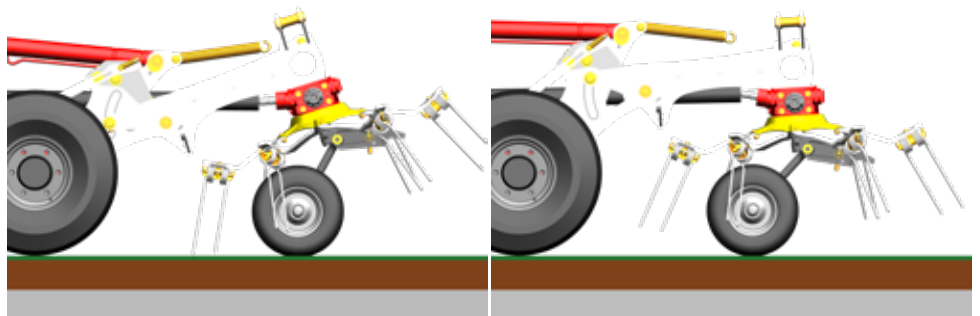
- The hydraulic lower link arm ensures simple coupling without having to adjust the linkage struts on the tractor.
- The main frame is always correctly positioned so that ground pressure alleviation is always ensured.
- High clearance at headland (50 cm inside) and during road transport.

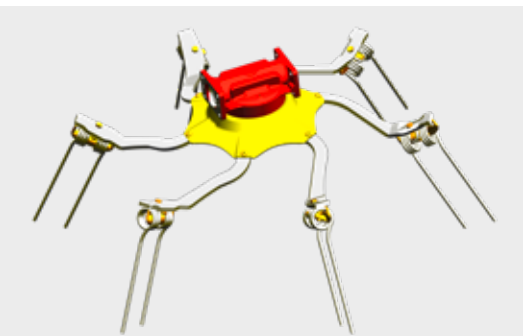
## TIPS FOR DRIVERS

### Tips for drivers

- Set the pressure of the cutter bar on the ground infinitely-variable depending on the condition of the ground and the conditioner or swath formers fitted.
- Simply increase the pressure on dry, hard soils so that the cutter bar does not fluctuate at high driving speeds.
- Reduce the pressure on damp, soft ground to protect the sward and avoid forage contamination.

# PÖTTINGER Tedders. Perfect tine guidance.





DYNATECH rotor



Fence-line tedding device



MULTITAST wheel

## GROUND TRACKING

### The multi-talent for clean forage

- What works well during raking is right for tedding too: The MULTITAST wheel ensures perfect ground tracking.
- This jockey wheel keeps to an exact working height and follows the contours.
- Output and operating speed can be increased considerably as a result.
- No tools are required to adjust the jockey wheel and an anti-wrap guard is standard.

## CROP PROTECTION

### Conserve forage with DYNATECH rotors

- The tine arms have a specially swept-back shape.
- As a result the tines move in a sweep action, handling the forage softly.
- The unequal lengths of the tines make a significant contribution to improving the distribution quality and extending the service life - an essential contribution to clean forage.

## EASE OF OPERATION

### LIFTMATIC PLUS – there is no better way of working headlands.

- Before being raised, the rotors are positioned horizontally using a hydraulic cylinder and then lifted. The tines do not touch the ground during lifting or during lowering.
- In addition, the high headland position of 90 cm clearance prevents the tines from penetrating or scraping the ground.
- The forage remains clean and the sward is protected.

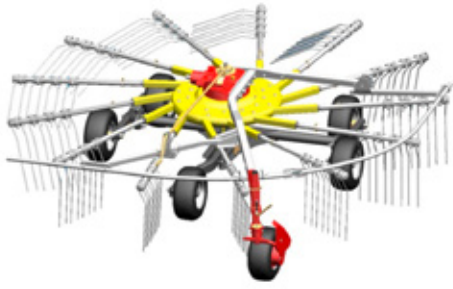
## TIPS FOR DRIVERS

### Tips for drivers

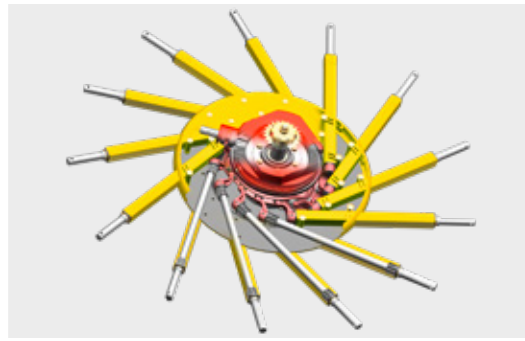
- Match the speed to the driving speed so that all the forage is picked up and put down again without damage.
- Avoid high rotor speeds! High rotor speeds can cause considerable losses due to disintegration, especially in wilted forage.
- Take your time setting the height – if this is not set properly then contamination will enter the forage.

PÖTTINGER rake  
with MULTITAST for a top result.





MULTITAST wheel



TOPTECH PLUS rotor unit



## GROUND TRACKING

### MULTITAST takes control.

- Raking is a decisive influence on how much contamination enters the forage.
- The tine sweep the forage carefully away from the sward without touching the ground.
- The MULTITAST wheel right in front of the rotor in combination with wide rotor axles enables exact guidance over bumps in the ground.

## CROP PROTECTION

### TOPTECH PLUS rotor unit

- The large-diameter cam track is designed for smooth and precise cam roller guidance.
- Adjustable cam tracks ensure an exact match to all forage volumes.
- The rugged control shafts and rugged tine arms resist extreme twisting and bending as well as stress applied by large quantities of heavy forage.

## EASE OF OPERATION

### Masters of ground tracking

- The 5 and 6-wheel chasses on the inside of the rake arc and the cardanic rotor suspension guarantee precise guidance of the tines over bumps.
- The result is tidy raking work at the same time as protecting the sward.
- Because the tandem axles are adjustable, the angle of the rotors can be adjusted precisely to the operating conditions in just a few minutes.
- The leading Multitast wheels, tried and tested a thousand times, ensure that the tines do not scratch the ground on even the roughest terrain.

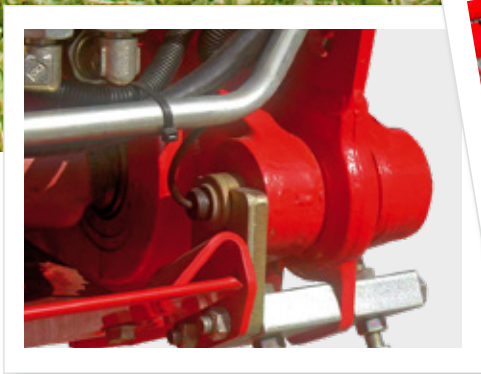
## TIPS FOR DRIVERS

### Tips for drivers

- Match the rotor speed during raking to the driving speed so that all the forage is raked into an airy swath. If the rotor speed is too high it will cause considerable disintegration losses, especially in dry forage, leading to a reduced protein content.
- Make sure you set the tine height accurately. The more precisely the tines sweep above the ground, the lower the risk of contamination.
- Avoid scraping tines because they will throw up dust, causing dirt to enter the forage and will also damage the sward.
- A ground tracking feature near the rotors prevents damage to the sward.



# PÖTTINGER loader wagons. Performance and forage protection.



Load sensor



Tracking roller



Pendular pick-up







EASY MOVE



AUTO CUT – Vollautomatische Messerschleifeinrichtung direkt am Ladewagen.

## GROUND TRACKING

### Ultimate ground tracking

- Height-adjustable 16 x 6.5-8 trailed jockey wheels ensure perfect ground tracking.
- Two jointed support arms ensure the pickup has complete freedom of movement, even diagonally.
- A spring also alleviates the pickup weight so less pressure is exerted on the ground.
- A support roller can also be fitted behind the pick-up if required for even better tracking on soft ground.

## CROP PROTECTION

### Automatic loading that protects the forage

- PÖTTINGER loader wagons with automatic loading systems are characterised by the smooth power applied during loading without torque peaks.
- A sensor in the front grating ensures that even with wet, heavy forage the loading rotor does not 'mash' the crop under excessive pressure.
- The sensor mounted in the roof of the wagon measures the loading status of the wagon and relieves the driver of having to check the level of the chamber. This significantly improves the filling efficiency of the loading chamber. The scraper floor can also be manually controlled, however.
- On rotor wagons with transmission and ISOBUS, a load cell is used to measure drive torque. All settings can then be matched ideally to the crop.

## EASE OF OPERATION

### Cutting edge advantages with AUTO CUT and EASY MOVE

- Proven innovations invented by PÖTTINGER: The AUTO CUT knife sharpening system enables convenient knife sharpening directly on the loader wagon.
- The result: reduced maintenance requirements while guaranteeing long-lasting optimal cutting quality with lower energy consumption and increased output.
- EASY MOVE – it's just so simple The entire knife bank is simply pivoted out alongside the wagon.

## TIPS FOR DRIVERS

### Tips for drivers

- Make sure that the pick-up is adjusted to that it lifts the entire forage swath without losses.
- This ensures that no valuable base forage is left behind in the field, the sward is protected and contamination is minimised.



# Are you harvesting successfully too?

High quality of life for the farmer.



## Take responsibility for your forage quality!

Clean, tasty base forage is the cornerstone of an efficient dairy business. From mowing to harvesting using the best technology correctly, you are already in control. PÖTTINGER helps you to improve the quality of your forage positively and sustainably.

## Insist on the best forage!

Healthy cows return a higher milk yield and improved fertility. In addition you save on vet costs and benefit from your livestock for longer - also from a financial point of view.

## Increase your milk earnings!

High quality base forage increases milk yield. And that is what dairy farming is all about, after all.

## Optimise your profit!

Feed accounts for around 50% of the production costs for each litre of milk. It is really worth doing everything right during base forage production.

## Win time for yourself!

Best base forage is the cornerstone of your success, because it generates more profit and keeps your animals healthy. That not only saves you money, but also valuable time, which you can use for some well-earned relaxation.



Are your livestock being fed quality forage?



Trust in PÖTTINGER.  
Harvest success.

**PÖTTINGER Landtechnik GmbH**  
Industriegelände 1  
4710 Grieskirchen  
Austria  
Phone +43 7248 600-0  
Fax +43 7248 600-2513  
info@poettinger.at  
www.poettinger.at

