

# XtraBlatt

## A CLEAN LIFT

Forage quality series  
Part 3

### AUSTRALIA

Agriculture  
“Down Under”



**SENNEREI  
GUNZESRIED**  
More than just cheese



A self-propelled long-term favourite, trail blazer, world record holder and pearl of the Krone BiG line: Since the very first model in 1996 more than 3,500 BiG M machines have left the assembly line. In 2021 the model series celebrates its 25th anniversary.





## DEAR READERS,

By the time you read this issue, the end of the corona pandemic should hopefully lie within our grasp. Nevertheless, some of the regular measures we've had to come to terms with since March 2020 will probably remain. For instance, the ordering of more products online. Or Zoom and Teams still being used for at least some meetings and schooling sessions. Maybe we'll be shaking hands less often, too. And not being irritated so much over the day-to-day trivialities that gave us "blood pressure" pre-pandemic.

But still, we in Krone, as well as probably the entire farm machinery sector, recognise there's unfortunately one blood pressure heightening factor impossible to eliminate in the short term: the past and present delays in machinery assembly and delivery caused by pandemic disruption of component supply chains. Such material holdups feature not only items such as microprocessors, but even timber. The market for this material indispensable as packaging for the delivery of our machinery has been swept bare worldwide. We sincerely regret these delays and we're doing everything we can to limit them as much as possible!

The timber situation serves as a good example of the numerous challenges within our society, indeed overall on our planet, pushed into the background by the corona pandemic but now back with us again with the old disruptive potential.

To these belong climate change and the necessary measures to reduce the speed of global warming. Hereby, agriculture can and will supply an important contribution, for instance through expansion of regenerative energy – a measure that hopefully will in the future be more and more supported by government policies.

Additionally, our present situation demands less use of natural resources and more sustainability in industrial production. In this direction, there are effective fine-tuning screws already in-place. For example, new ideas in machinery development and ways of ensuring longer working life of components such as sensors. Among the most important aims are practice-oriented digital service concepts ultimately leading to more efficient application of your Krone machinery – and to used machines offering a second, or even third, working lifetime. You'll come across many of these themes while reading this issue. I wish you interesting insights thereby.

A handwritten signature in blue ink that reads "Bernard Krone". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

Yours sincerely, Bernard Krone



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RMT are the initials for boom mower service in Central, Lower? From this mower through to mowing and agricultural thermal? Not at all. The enterprise will be reporting on how also works with a 3000 and other large-scale machinery.

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**STRENGTHS OF INDUSTRY**

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Every machinery maker is only as good as the service it gives. In this sense, the service is a benchmark. The industry is working to ensure that service is not just a benchmark, but a way of life.

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With the arrival of the new 3000, the industry is looking for a clean lift. The new 3000 is a game-changer for the industry.



**THE NEW PRESIDENT**

With the arrival of the new 3000, the industry is looking for a clean lift. The new 3000 is a game-changer for the industry.

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What do you think of that when Australia comes to mind? The industry is working to ensure that the other end of the world is not just a mind, but a way of life.



**REFINANCING**

What do you think of that when Australia comes to mind? The industry is working to ensure that the other end of the world is not just a mind, but a way of life.

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Pressing straw into pellets has its price – but also offers a real added value. The industry is working to ensure that the sustainable economy is not just a price, but a way of life.



**A NATURAL CYCLE**

Pressing straw into pellets has its price – but also offers a real added value. The industry is working to ensure that the sustainable economy is not just a price, but a way of life.

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It's a group of mowers that has been in the market since 1956 and has become a benchmark. The industry is working to ensure that the mower power is not just a group, but a way of life.



**1,000 MACHINES SOLD BY 2020**

It's a group of mowers that has been in the market since 1956 and has become a benchmark. The industry is working to ensure that the mower power is not just a group, but a way of life.

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USED MACHINERY

# THE SECOND LIFETIME



**Farm machinery trade-ins used to represent real problems for dealerships – and quickly end in a cost trap, too! Things tend to be different now, though. So what are the chances nowadays for giving trade-in machinery a second, or even a third, working lifetime under new owners? XtraBlatt asks the experts.**



**A** wee treasure, or a cash-consuming nightmare? Assessing the worth of used farm machinery has always been something of an art – and definitely not an action where across-the-board values can be confidently applied. “It all depends ...” would be the most realistic opening statement in such cases, and this diffident phrase hits the proverbial nail right on the head. Because any price estimate for used machinery really does depend on the actual product segment. Think of a second-hand slurry tanker handed in in part exchange, or simply being put on the market. There are lots of potential problems here: increasing environmental regulations affecting application methods might mean the spreader is obsolete, for instance. Situations like this can sabotage any sales, at least in western Europe. Maybe a bit easier to sell, but still fraught with uncertainties, are used crop sprayers. “It is not easy to find a redemption price which has a vendor satisfied while still leaving some sort of margin for us as dealers”, points out Heinz Arns.

He’s managing director of the farm machinery dealership Lankhorst with headquarters in Neuenhaus in Grafschaft Bentheim in the far northwest of Germany. This firm with a total 135 employees is established in six locations with a business area stretching from Bentheim southwards almost into the Ruhr Valley.

For used tractors and self-propelled harvesters, the situation is different. The farm machinery industry has been struggling to deliver enough of these machines for some months now. Customer demand is on the increase in general. There is also a fall-off in component availability and delivery, mainly through corona-caused disruption of supply systems. “Farmers currently keen to get their hands on a particular machine might well be best to take a closer look at younger examples of used machinery on the market”, suggests Heinz Arns.





## IMPORTANT NETWORKS

Martin Fehren has come to a similar conclusion in his position as managing director of the Harvest Park (HP) used machinery centre in Emsbüren, also in the north of the country. HP has Maschinenfabrik Krone as majority shareholder. Nowadays, there's growing interest from all parts of the world, he finds. As far as machines are concerned, the six-person "HP" team currently concentrates on silage harvesters, BiG Ms, combines and square balers. In exceptional cases there may be a tractor involved in a deal, if this is definitely wished for by international used machinery buyers as part of a larger trading package. "But by-and-large we keep to large-scale machinery in the harvesting segment. Our work includes the support of Krone dealerships in dealing with such machines which even as used products are high priced. We assist with selling them onwards, so improving dealer liquidity. The amount of capital locked-up in specialist machinery dealerships increases continually. Not everyone is in the position to be able to successfully carry out the sales deals required in this international business", he continues.

The market scenarios of the two companies are therefore different. With Lankhorst, 90 to 95 % of the used machinery taken in exchange comes from the dealership sales and service area. And when selling them onwards, up to 60 % still stay in the home region, although this average can vary widely, depending on machinery category and

age. Heinz Arns: "For instance, older mowers, turners, soil cultivators or other mounted implements are more advantageously marketed out of the region towards south-eastern Europe, and this goes for older tractors too. However, many younger used machines can be sold well here, or further south in Germany."

Lankhorst also sometimes sets out to buy used machinery in other regions. "When one of our customers seeks a certain piece of used machinery that we don't happen to have in our inventory, we help by researching the markets elsewhere or providing contacts to dealer colleagues, whereby we usually stick to Germany in our search", explains Heinz Arns. This aspect of the business hasn't changed so much, he adds, even with the advent of online machinery markets. "Naturally, digital marketing dominates now. This business has also become very internationalised. However, as in the past, used machinery buying continues to have a lot to do with trust. And, at least with high value machinery, the valuations of dealership experts before a purchase decision is of considerable importance."

**"AS IN THE PAST,  
USED MACHINERY  
BUYING CONTINUES  
TO HAVE A LOT TO  
DO WITH TRUST."**

HEINZ ARNS,  
LANKHORST MANAGING DIRECTOR

This last aspect, feels Martin Fehren, is still very much the most important one. The HP network reaches right around the globe. "With the silage harvesters, for instance, we're dealing with a very specialised product. The world market annually features around 3,000 new machines, of which approx. 500 are bought in Germany alone. This means that in part-exchange an estimated 2,000 to 2,200 used machines are involved worldwide





- 1** “Backwards-compatibility” is important for the international marketing of used silage harvesters. This means, for example, that a newer maize cutterbar must fit onto an older machine.
- 2** The same address: established on a shared site direct on the A31 in Emsbüren are the Harvest Park buildings as well as one of the six Lankhorst facilities.
- 3** The Lankhorst workshop team in Emsbüren carry out preparation of machinery for HP too.

with the respective figure in Germany, for example, being around 400. This is not a lot. Much depends on the professional execution of such deals and equally on knowing where the machines can be best sold. Our network contacts are crucial to help us determine the right price”, he emphasises.

Harvest Park annually moves around 65 silage harvesters, 45 combines and 20 square balers – tendency rising. The majority, some 70 %, find new owners in the export market with just under a third staying in Germany. As a rule, the machines come from agricultural contractors where they’re replaced routinely following a predetermined working period. Often, along with dealership interest, large farm businesses enquire for used machines. Says Martin Fehren: “These certainly aim for high throughputs and therefore seek a high capacity machine with acceptable costs and manageable risk.”

## METICULOUS TESTING

Settling on the right price for a part-exchange machine starts with checking it out very carefully. With Lankhorst, this first move is based on a self-designed checklist filled out on the spot by the respective salesperson in dialogue with the buyer of the new machine after a good “lookover” of the trade-in model. First photos are also made to document condition. Both form the basis for the following workshop evaluation. There, two staff members specialised in the used machinery business apply their expert knowledge. Where required, a technical evaluation by the workshop master mechanic also takes place. “Naturally, we are not able to see into the innards of the machine, e.g. into the engine or transmission, and that’s why the procedure needs the long-year experience of all participants”, adds Heinz Arns.

A procedure just like this is also followed routinely by HP, whereby the “checklist” and photo documentation have to be even more comprehensive, according to the

- 1** For Heinz Arns (l. managing director, Lankhorst) and Martin Fehren (managing director, Harvest Park) the marketing of used machinery is not a necessary evil. Instead, trade-in machines represent an important business field.
- 2** Alongside silage harvesters and other products from the BiG line, combine harvesters are also part of the core business at Harvest Park.
- 3** Every machine finds its own market: a large proportion of the machines taken in part-exchange during sales by Lankhorst remain in the region, or at least in Germany.

company. Among other things, this is because, at least during primary acceptance, no one from HP centre is usually able to travel to the dealership in question, says Martin Fehren. On the basis of the paperwork a first estimation of price can then be made and those involved decide if the machine in question should be shipped to the centre. "This is the case with 99 % of the machines. Afterwards we can, during a further inspection, check condition more closely and decide whether there might be extra work needed", he explains.

## CENTRAL LOCATION

The further processing of a used machine always begins for both companies with a very intensive cleaning. At the Emsbüren centre the used machines are grouped according to type because Heinz Arns knows from experience that potential buyers prefer sufficient choice when deciding. "If we have our machinery and implements distributed at all six locations then the chances of sales, at least on a regional basis, would decrease." Another reason for having all the sales at the centre is the good connections with an autobahn with quasi an "own" access road only a few hundred metres away.

It's no coincidence that the Emsbüren location in north Germany is shared for respective used machinery sales by both companies. In fact, the Lankhorst service team of 15 take care of all HP machines as well as their own. And there's also a direct connection in sales, explains Heinz Arns. "Normally we take care of marketing all the used machinery, including the large-scale machines. After all, we already service around 75 BiG Xs in our sales area here.



To this total can be added the complete Krone BiG line, so that we also have a plentiful supply of used machines coming in."

Preparation of machines for resale is an intensive business at the centre. Exterior condition and presentation are naturally important. Further "in-depth" work may, or may not, be carried out there. This depends on customer wishes and machine value. "Especially where they're heading for export to eastern Europe, South America or Asia, our workshop prices may not be competitive with those in the importing land, so repairs might be best undertaken there", explains Martin Fehren. Through the high technical abilities of the HP and Lankhorst teams, it is also possible, depending on respective machine condition, to offer guarantees, at least for certain components, for instance a part guarantee covering the engine for the first harvest year. "This gives the buyer more security. After all, harvesters – and this applies to used ones too - are becoming increasingly expensive."

## A GOOD FUTURE

Key words costs and value highlight the general price development of used machinery and other trends in this business. The subjective view of many farmers and agricultural contractors is that there's an ever-increasing





gap between prices for new and used machinery. “We can show, however, that this is definitely not the case”, clarifies the HP managing director. Neither can he confirm that the ever-increasing number of electronic components in agricultural machinery reduces the chances of international sales. “Quite the opposite, in fact. The digital components make it increasingly easier, even as a used machine buyer, to take full advantage of manufacturer servicing offerings, a factor especially valuable in markets outside Europe”, says Martin Fehren. As an example, he cites the customer portal “mykrone.green” over which a broad spectrum of technical services can be called up. “In the long-term perspective, this will increasingly help us, in the marketing of used machinery, too.”

Talking of “trends”, both managers assume that assessed value of used machinery will increase substantially. “The technology is more and more valuable. Therefore on purely economic grounds, the machines have to be used longer, not only over a so-called second lifetime but maybe, depending on product category, over a third one too”, emphasises Heinz Arns. And Martin Fehren adds: “With this, the importance of used machinery moves increasingly into focus and is certainly no longer a mere by-product of new machinery sales but instead an economically efficient alternative.”

He also reckons that this means machines should be built for more “backwards-compatibility”, in other words, so they can be more easily uprated after their first or second working life. This longer life starts in product development planning alongside the basic work in

functionality, quality and the complete theme complex of operator training, service and/or spare parts supply. Heinz Arns stresses that he finds possibilities for further modifications in machines increasingly important. Here, it should be possible, he says, to refit used machines with newer features and components, or spare aggregates to lengthen operational lifetime or to meet a customers’ special requirements.

“Everything that contributes to lengthening machine working lifetime or to allow it to help work under particular conditions, improves economic efficiency as well as helping to maintain a positive development in used machinery value. In total in this respect, we find ourselves making very good progress. One thing is sure: the earnings per production unit in agriculture will not significantly increase. The marketing might of the food supermarket chains alone, and their influence on producer prices, will not permit this. For this reason, sustainability in agricultural machinery is not only a must on the grounds of environmental protection, but for reasons of economy too”, he concludes.

## “USED MACHINES ARE GOOD ALTERNATIVES FROM AN ECONOMIC POINT OF VIEW”

MARTIN FEHREN,  
HARVEST PARK MANAGING DIRECTOR




## GRASSLAND CARE

# LOBBY FOR THE GREEN



Cows grazing contentedly in lush green meadows. A once common scene on the continent, now making a comeback as year-round housing for dairy herds gives way to more summer grazing again. Scientific support for this year-long trend in Germany comes from the Centre for Grassland, Lower Saxony/Bremen. The reasons for the move to more green are diverse and include animal welfare, added-value dairy products and climate protection.





**C**ows out at grass are part of the traditional farm landscape – an idyll especially attractive to urbanites. But cows spending most of their life out on the fields became less common on the continent due to so-called “process-optimisation” honouring the economic efficiencies of year-round housing with zero grazing and silage. Now though, many dairy farmers have come to recognise that classic pasturing has many advantages, despite the extra work involved. One of these bonuses is

the increased sustainability offered by a grazing system, an aspect readily recognised by a growing number of discriminating dairy product consumers.

Grassland accounts for around 30 % of all farmland in Germany. The greencrop is mainly to feed dairy herds with either animals grazing the fields, or the crops harvested for forage feed. “Discussions on the future of farming up until now have left grassland only a minor role”, regrets Dr Arno Krause, director of the Centre for Grassland, Lower Saxony/Bremen. This institute emerged from a networking project ten years ago and now sees itself as central platform linking all participants in and around grassland. These include chambers of agriculture and agricultural associations as well as government institutions. The centre is simultaneously a driver of research projects on everything to do with grassland. General aim of such projects is improving agricultural utility in this respect, but also aiding wildlife, water and climate protection. With its research and lobbying work, the Centre for Grassland wants to strengthen the standing of this crop in the public perception. But why is this so important?

## MULTIDIMENSIONAL DILEMMA

“The problems confronting grassland and those farming it become increasingly complex”, emphasises Dr Krause. Earlier, factors to react to were mainly technical. For example, too low protein content in forage, or crop insect damage. The farms found technical solutions in the form of fertilisers for better plant growth, or protection sprays. “However, in grassland regions we now find ourselves having to face much more than simply technical problems”, adds the Centre for Grassland director. Challenges are increasingly complicated. One reason: modern society’s requirements from the green countryside tend to oppose the aforementioned technical ones. In particular, themes such as manure application, or the use of so-called “pesticides” are seen in an increasingly critical light by large segments of society, adds Dr Krause. This means compromises are required.

“On top of this we’re recognising that other themes now play a role in the discussions, for instance the safeguarding of water quality, supporting wildlife biodiversity and climate protection. And these contend

Grazing dairy cows and other cattle outdoors has become more popular in recent years.





with one another, too. Seen in the light of such challenges, the problems become very quickly multidimensional, leading not uncommonly to conflicts of interest between all the requirements.” Thus, the need is for optimisation of grassland while utilising it efficiently and still making some money from the enterprise. These are exactly the reasons behind the successful work of the Centre for Grassland in the last ten years, emphasises the director.

## MODERATE WETTING

He sees an example of this approach in moorland conservation measures. When, some years ago, it became generally accepted by policy makers that agricultural or other operations on moorland set free large amounts of CO<sub>2</sub>, it was decided to reintroduce more water to such areas to minimise such emissions. The problem: large areas of grassland had become established on former moorland. Dr Krause: “Were we to take such areas out of farm production, there would be substantial repercussions. With milk production in particular, we would be losing hundreds of millions of euros in added value.”

Naturally, greenhouse gas emissions must be minimised. But the resultant infrastructural collapse within the dairy sector is something no one wants. Therefore, it is extremely important to seek solutions for this conflict of interests. This was recognised as their task by those responsible within the Centre for Grassland, relates Dr Krause. “Might it possibly be sufficient if we were to introduce moderate wetting of grassland areas on moorland regions, thus conserving moorland, but still allowing the areas to be farmed?”

But how wet is “moderate”? What degree of water retention would be feasible, if the areas were still to be farmed? These were questions to which there were no answers at the time. They therefore became the core of scientific interest at the Centre for Grassland. “We started a research project aimed at identifying what such a moderate wetting compromise might look like”, he explains. Introducing higher levels of water would naturally affect insects, mammals and birds. And these resultant changes, too, had to be brought into the complete picture.

## SCIENCE-BASED WATER LEVELS

This project is in the meantime almost finished and has delivered values upon which appropriate water level management can be based. The values were established following year-long trials conducted on rented areas of grassland farms. It remained very important for Dr Krause and his 15-member team that they involved, along with state institutions and associations, the farmers too and in this way reduce existing fears regarding forthcoming changes. “This persuasion work with the farmers, as well as with their association representatives, represented a very large proportion of our work”, explains Arno Krause.

Considering the German federal government announcement that it wants greenhouse gases to be reduced by 30 % before 2030, it is immensely important in this country for agriculture to be appropriately prepared from now on. Achieving the target demands fullest commitment. “Here in Lower Saxony lies 30 % of all low-level moorland in





the republic, and even 70 % of high-level moors. Climate protection measures therefore have a massive effect, particularly on Lower Saxony grassland areas. This makes it all the more important that sound solutions are found for continuing farming on moorland while still protecting it”, emphasises Dr Krause.

The intensive scientific analytical work on biological and chemical correlations in grassland have created an expertise within the Centre for Grassland that is now internationally recognised. This work has also led to discoveries potentially contributing to the solving of current problems, such as that of surplus amounts of animal manure. In this respect Dr Krause cites the realisation that grassland can absorb substantially more nitrogen than land growing arable crops. Trials have established that the thick swards mean the pasture plants can absorb up to 300–400 kg N per year and hectare. One reason is that sward growth continues absorbing nutrients almost year-round. Certainly, these are extreme trials. But their results show that, even with these levels of application, no nitrate leaching into ground water was recorded.

## INTERESTING INDICATIONS

Research at the Centre for Grassland has also resulted in other findings, results that even the scientists themselves had not expected in their respective forms. These included an identified interaction between application of nitrogen and carbon binding in the soil. “The more manure applied on the grassland, the greater the level of carbon fixation in the soil”, explains Dr Krause. A moderate to medium

- 1** Milk from dairy cows grazing pasture over the summer half-year has become an important marketing argument for dairy products.
- 2** Dr Arno Krause is director of the Centre for Grassland Lower Saxony/Bremen.
- 3** Increasing regulation: grassland farms too, must get to grips with a future full of new complex management demands.

application results in up to 2 t CO<sub>2</sub>/year/ha being fixed: a finding in dramatic contradiction to general public opinion with its supposition that more manure directly increases groundwater pollution risks.

To face future challenges, Dr Krause advises arable-type management plans be applied on grassland farms too. He feels that on many of the latter, too much is still left to chance. For instance, soil sampling is carried out regularly on many arable farms, but hardly at all on the average grassland unit. “However, a farmer who collects detailed knowledge of his or her soils in this way is also in the position to undertake appropriate action and thus improve results.” For this reason, he advises decision makers on grassland farms to involve themselves more intensely in their businesses. «



**RMS, TRABITZ, BAVARIA**

# ONE JOB LEADS TO ANOTHER

**RMS are the initials for lawn mower service in German. Lawns? Does this mean XtraBlatt is running out of agricultural themes? Not at all! The enterprise we're reporting on here also works with a BiG M and other large-scale machinery.**

**I**n Trabititz, only a few kilometres from the Grafenwöhr military training grounds in the Bavarian Upper Palatinate, the boom of tank guns can be heard over the Schreglmann farm. Here lies the family business centre, not only for the home farm but also for an agricultural contractor company and RMS GmbH.

“My grandparents worked a typical mixed farm here, with dairy herd and followers”, relates Phillip Schreglmann. “My father Markus and I now run the business. He made his first moves into agricultural contracting very early, mainly by offering combining, silage harvesting and seed

drilling services. When he took over the family farm in 1995, the livestock enterprise was given up. He then began to undertake groundcare work for the US army; initially on a small scale with hand implements and a simple lawnmower tractor. As the jobs became more varied, grandfather stepped in to help when needed, or a few pals from the village lent a hand. By 1998, the enterprise evolved into RMS GmbH, with





a new shareholder Gerhard Thurn and three to four staff. From then on, growth was dynamic. Nowadays, we have 30 people working year-round.”

## SPECIAL MACHINERY

While Markus Schreglmann, with master certificate in agriculture, is managing director of RMS, son Phillip decided to train as a specialist in agricultural service, achieving master craftsman certification. “Looking back, this was exactly the right path to take”, says he. “Especially the training course in Triesdorf through to agricultural service master represents for me a very solid basis when it comes to the planning, calculating and organisation of services and operations. The same applies to investments and staff management. Here, I must give the committed team of specialists at the Centre for Energy & Agricultural Machinery a really big compliment.” Also very important for Phillip Schreglmann is networking with colleagues from neighbouring federal states. Interesting thereby: even with the classic agricultural contracting businesses, work outside purely farming operations increases everywhere.

Some of the machinery fleet is used in all three businesses, a synergy that allows big investments in machinery to remain viable. Meantime, most activity involves RMS work, with arable operations carried out more or less in between. The machinery line-up is very extensive. More on

the farm and contracting side is a range of tractors from 150 to 400 HP, a self-propelled slurry tanker, two 6x6 Tatra Agrotrucks as silage transporters or part of the slurry delivery chain, and three trailers with capacities from 50 to 60 m<sup>3</sup>. There's also the usual line-up of mounted implements for soil cultivation, seed drilling and crop spraying.

RMS uses an additional seven trucks including one with a skip hook-lift system and two articulated rigs. Mainly, these vehicles transport machinery and implements to work locations which can be quite a distance apart. While Grafenwöhr troop exercise ground is only 10 minutes away, Nürnberg airport, another work site, takes more than an hour to reach and other military barracks looked after by RMS are even further afield. There's a range of excavators, from 2 to 18 t gross weight, in the line-up including a Menzi Muck M545 “spider” to which can be attached a range of shovels, forestry and precision mulchers, stump grinders, mowing buckets or gripper jaws. This kit helps RMS attract contracts for work on railway embankments, other steep slopes, around water landscapes or in wetlands.

Additionally in-hand is a range of very different mowers: ten lawnmower tractors, various mowers for large lawns and parklands and two Reform mountainside tractors that go to work either with a mulcher or rotary mower plus vacuum system. A classic example of the already mentioned synergy effect is given by the BiG M and the BiG Pack square baler from Krone. The BiG M is used mainly in RMS operations, mowing some 1,000 ha per year. But another 600 ha of mowing is split between the farm and the contracting business.



Among the most important RMS GmbH customers are airports. Here in Nürnberg, grass mown around the runways is baled as silage.





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## PLANNABLE CONTRACTS

The Schreglmann family farms 300 ha arable and grass with some of the latter supplying substrate for a 900 kW biogas plant. “There’s a lot of uncertainty concerning the future in agriculture but as far as landscape care is concerned, I can safely plan well ahead”, explains Phillip Schreglmann. “In fact, contracts lasting over three to five years are common nowadays, some of them with options for extensions.”

Naturally, here it’s important that the company keeps up with the competition in the worldwide tendering procedures. Phillip Schreglmann: “Clearly we have to tender prices acceptable within the market. But we do have very good cards in the hand when tendering. Firstly, we have long years of experience, know the local conditions very well and can thus precisely cost the work we offer. Secondly, our machinery is extremely diverse. We can handle a wide range of operations. RMS has also won a certification of quality work as member of the Quality Control Association for Woodland and Landscape Care (RAL).”

Basically, customer orders tend not to be given out for individual jobs. Instead, work tends to be in the form of large total packages, e.g. all groundcare work involved for airport surroundings. Or packages covering care of roadsides, ditches, sports grounds, flower beds, bringing out bark mulch, keeping paved areas clean, care of trees, hedges and bushes, as well as seasonal ice and snow clearing. Then there’s also the mowing of several thousand hectares. “For example, the US army manages not just troop exercise grounds but also



whole towns and other communities and the associated infrastructure. To offer a total package for such jobs means every individual operation has to be assessed.”

## EXPANSION AHEAD

There’s a wide variety of customer types. Alongside the US army administration, for example, there’s also the German Institute for Federal Real Estate (BIMA) covering forests, and thus responsible for large areas of the surrounding Grafenwöhr woodlands. Part of the RMS work here is baling silage for feeding the forest’s red deer herd in winter. Further jobs involve care of local community grounds, work for the Nürnberg Landscape Care Association or similar operations for specialised administration groups.

The actual tasks carried out under contract are precisely planned. In most cases, the required mowing passes over





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- 1** Up to 1,600 ha are mowed by the Schreglmann family's BiG M, including around 1,000 ha parkland. Here, the machine is pictured on a federal forestry area.
- 2** The Menzi Muck "spider" excavator is used to tackle special landscape maintenance tasks.
- 3** Markus Schreglmann: farmer, agricultural contractor and managing director of RMS GmbH, with his son Phillip.
- 4** Very special tools are the Tatra Agro trucks with 6x6 drive.

the season in a certain area are predetermined, running from repeated work for top quality lawns and less activity for more extensive care. Sometimes, natural environmental protection is very much part of the job criteria. Another important theme is disposing of the cuttings and other waste. Only very seldom can feed be produced from the cuttings. Sometimes it can be used as substrate for biogas plants. But some is just simply burned. For instance, where clippings are from airport grassland contaminated by fire-extinguishing foam. "Another point at airports is that there, our teams have to work under strict tower administration", explains Phillip Schreglmann. This means that a member of the airport flight control staff must always be present. All work areas are mapped and for each operation the work required, and the destination for the clippings, can all be different.

During the vegetation period from April to end of October there's a steady staff of around 20 employed in mowing.

However, RMS also has a troop almost exclusively working hand equipment such as motor mowers and leaf blowers. Earlier, these tools were mostly powered by petrol engines, nowadays increasingly with rechargeable batteries. With the "energy greedy" tools, backpack systems with sufficient available power are used.

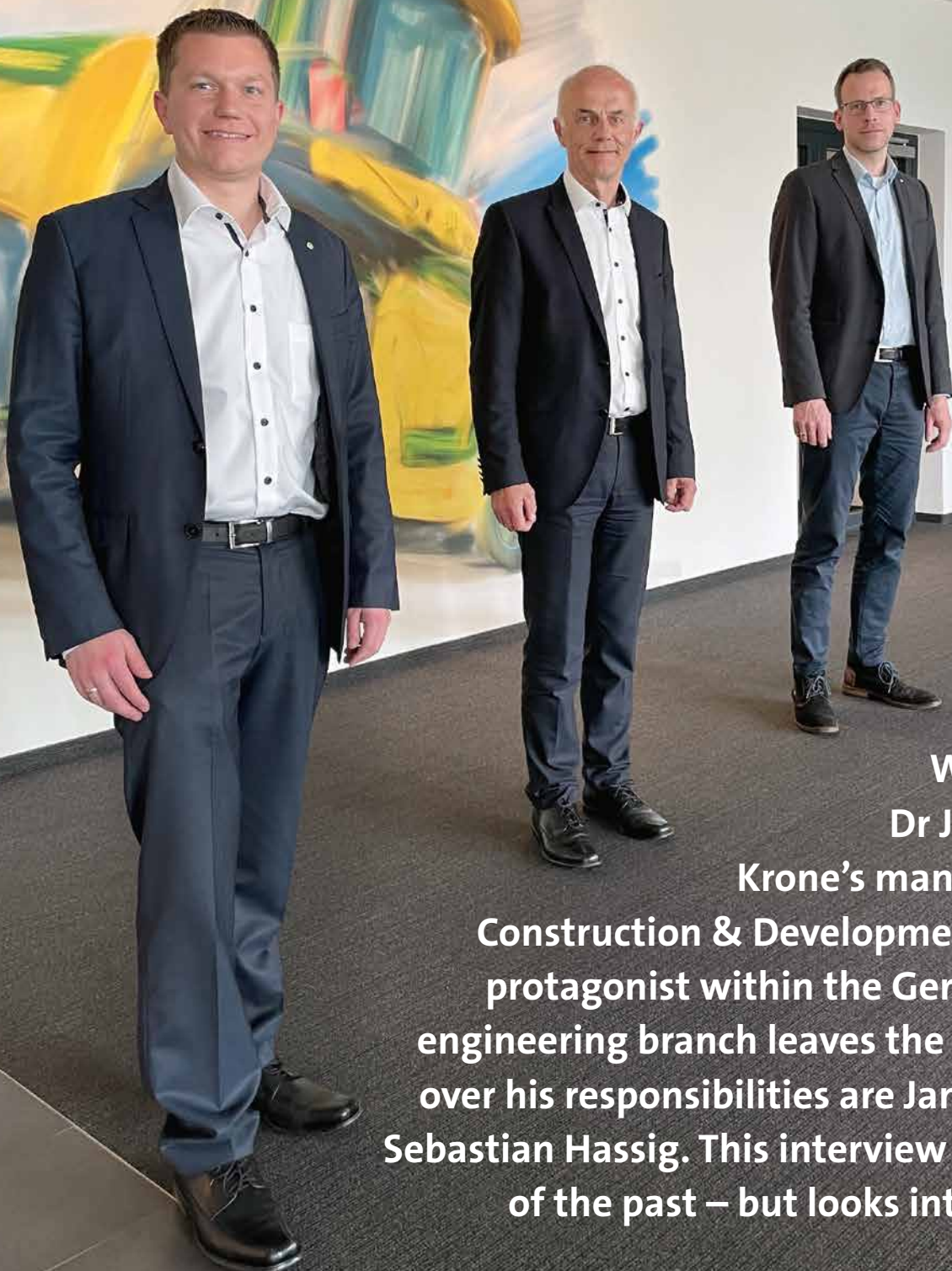
For the future, Phillip Schreglmann continues to see potential in the RMS business field, whether in conventional landscape care or in special maintenance jobs, with the spider excavator for example. After winning a contract, one job often leads to another. In this way, not only does the number of regular customers grow, but also the machinery fleet. And even with the family farm and agricultural contractor business, father and son want to continue growing: "Our beginning was in agriculture, though, and that's where our hearts remain", concludes Phillip Schreglmann.

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**CONSTRUCTION & DEVELOPMENT**

# A DUO TAKES OVER



With the retirement of Dr Josef Horstmann, Krone's managing director of Construction & Development, an influential protagonist within the German agricultural engineering branch leaves the company. Taking over his responsibilities are Jan Horstmann and Sebastian Hassig. This interview reviews 38 years of the past – but looks into the future too.



**A**t the end of July Dr Josef Horstmann begins a well-earned retiral after 38 years with the Maschinenfabrik Krone including 19 of them as managing director, Construction & Development. Taking over his duties starting August 1 is a two-man team. Jan Horstmann, IT specialist in different departments within Krone over the past 17 years, joins Sebastian Hassig the new manager of Construction & Development. A graduate in mechanical engineering, Herr Hassig has held various positions in construction with Krone since 2013. He also brings with him practical experience having earlier worked with an agricultural contractor.

**XtraBlatt:** Dr Horstmann, you'll be handing over your duties within weeks. Why are two managers taking over?

**Dr Josef Horstmann:** *The reason lies in the enormous expansion in the volume of work involved. The construction manager's workload has multiplied many times in the last 20 years. This includes all the external duties that have continually increased, and continue to do so – such as working with associations such as the VDMA, with universities, in committees and working groups. We want to be, and indeed must be, increasingly active in this respect so that we can maintain our networks and be sufficiently armed for the challenges of the future. Neither must the continuous flood of new rules and regulations be forgotten, for instance the Machinery Directive among many others. And last but by no means least, the company's own internal duties. 38 years ago, there were around 48 colleagues in construction and development, now there are over 350.*

*In short: The number and depth of all themes involved have increased so much in the 38 years I've been with Krone that a single person would be more than fully challenged attempting to managing everything optimally. The outstanding team I had around me meant things have worked well so far. But to the background of future challenges, I have championed in internal discussions over*

*some time with Krone senior management the case for a dual lead in Construction & Development. I had the advantage of gradually growing in my job along with all the increasing requirements. Nowadays, though, I don't think this would be possible.*

**XtraBlatt:** Why wouldn't it work?

**Dr Horstmann:** *When I started in Krone there was only the classical mechanical engineering here. One constructor in those days would have developed a complete machine from the beginning to the end. The small amount of electrical equipment, such as cables and lighting, were simply plugged-in and the new machine was complete. When in 1985 I constructed the first hydraulic drive on a forage wagon it represented a great step forward in this discipline. Nowadays, people would laugh at this. But it really did represent a small milestone.*

## **“WE MUST PRODUCE THE WHOLE PACKAGE BETTER THAN THE OTHERS DO AND RETAIN OUR NEARNESS TO THE CUSTOMER.”**

**DR JOSEF HORSTMANN,  
MANAGING DIRECTOR C & D, KRONE**

*The next great step was the first electronics. When the first two electrical engineers joined the team we were often asked: What do you want with them? “Farm machinery and electronics don't fit together – nothing will come of it”, was the feeling voiced at the time by farmers, and by dealers too. What a drama there was when we transferred the hydraulic steering of our forage wagons from the tractor cab to an electronic control box. We heard that no one was going to be able to repair this. And that was only just 30 years ago!*

*From then on, electronics became increasingly important. Then, around 12 years ago, IT*

*entered the scene in a big way. The next task was building this competence into our team. From the very beginning, Jan Horstmann played an important role here. Nowadays, this competence field is a crucial one, and will be even more important within the development team in the future. And this is one of the reasons why it was decided to appoint Jan Horstmann as IT specialist at the head of the department, a clear statement and an important one.*

*This is not to say that the classical mechanical engineering should be neglected in any way. This will remain the basis for every product development. I am all the more delighted, therefore, that it proved possible with the appointment of Sebastian Hassig to have another outstanding specialist from our own company in the management. Both know the company and its machinery very well, so that for a year now we've been able to create a seamless transition.*

**XtraBlatt:** Herr Horstmann, Herr Hassig: What aspects of Dr Horstmann's work especially attract each of you personally?

**Jan Horstmann:** *There are numerous aspects that personally impress and influence me. Included here is his - in absolutely positive sense – doggedness and meticulous care given to projects and their completion. Dr Horstmann unfailingly demonstrates an unwavering aim for the optimal construction solution and a panoramic outlook for good ideas and new concepts. This level of commitment not only comes from Dr Horstmann, it is encouraged in others by all the colleagues in the department. And in every case, it is always with the customer and the market in mind. In our work together this is what has given me the most enjoyment.*

**Sebastian Hassig:** *I've been specially impressed by his calmness and consideration, properties that he never loses, even in stressful phases. And that he always keeps in focus an unbelievably multi-layered number of themes. Not to be forgotten is his down-to-*



earth quality: as often as possible, he's out in the fields with the developers, discussing with customers: always in the centre of any action, always with an open ear for customer questions, but also for their problems and possible complaints, knowing the important points and personally helping to sort them out. Such a strategy seems to have distinguished Krone as a manufacturer from the start. And Dr Horstmann has demonstrated this to us, time and again.

**Dr Horstmann:** This has always been important – and helpful – to me, especially when talking to agricultural contractors. And it's also great fun! For example, I recall with great pleasure an agricultural contractor from near Spelle during a year when the maize crop was ripening very unevenly. He asked: How about developing something that recognises how ripe the plant is? Something with colour sensors? This is the sort of challenge that sends a constructor into deepest thought, although the right idea doesn't always spring to mind immediately. In this instance, I got together with Professor Ruckelshausen from Osnabrück University – and so began our AutoScan project, later emerging as the NIR sensor from Krone. This is just one of the many examples where the input from practical farming ended in future-oriented machinery “made by Krone”, all helping the position of Krone machines on the sales market.

**XtraBlatt:** What does this mean for the future? Where is agricultural engineering heading?

**Jan Horstmann:** Current infrastructure changes lead unequivocally to ever-larger farms and fields. Thus, machinery performance has continued to expand. But there comes a time when the physical capacities of machines reach their limits. Then a performance plus is only possible through improving sequences and processes with smarter electronics, sensorics and automation.

In this direction, we've got lots of ideas and projects, a number of them, in fact, already



Dr Josef Horstmann, with Krone for 38 years of which 19 years were as managing director Construction & Development.

completed, e.g. the load-dependent speed control “ConstantPower” with silage harvesters, the “EasyLoad” automatic, or the NIR sensor that documents crop moisture content and feed constituents at millisecond intervals. In the future there will be still further progress in, for instance, complete steering automation in the field, for instance headland turning management. This means: assistance systems will offer ever-higher performance, whereby further farm machinery functions will be partly or fully automated. Additionally, networking of machines and software solutions, e.g. through the agrirouter, will substantially increase and represent important components of a successful and sustainable agriculture.

**Sebastian Hassig:** Not to be forgotten is the task of making the driver's job less strenuous. Operating the complex machinery and mobilising the available power reserves is a real challenge. And one that lasts not only a few hours but the whole working day long. How challenging this is, and increasingly continues to be, is revealed through feedback during training sessions and via customer services. This is why I see in the progress of automation that important further step towards the economically necessary optimum performance.

**XtraBlatt:** Which, at least in western German field infrastructures, could prove difficult ...

**Hassig:** More than ever, product development is aimed at global requirements. Worldwide, the shortage of qualified and experienced

drivers is even greater than in Germany. But elsewhere in Europe too, contractors are confronted with the theme – admittedly not just with silage harvesters but mainly for the efficiency of the whole forage harvest process chain and organisation of its workflows.

**XtraBlatt:** On the other hand, making the very best of all possibilities has much to do with ease of operation. In this respect it is often heard that machinery must be as intuitively operable as possible, just like a smart phone. Is the agricultural machinery of nowadays already at this stage?

**Jan Horstmann:** No. At least not completely so. All the same, it's much better than it used to be and nowadays this represents a major theme in product development as well as

## “SOFTWARE COMPATIBILITY BETWEEN TRACTORS AN IMPLEMENTS REMAINS AN ACUTE PROBLEM.”

JAN HORSTMANN,  
MANAGING DIRECTOR C & D, KRONE



Jan Horstmann, an IT specialist in the Krone concern for 17 years. From July, he takes over Dr Horstmann's post as managing director.



a permanent feature of the development process. There certainly remains room for improvement. As a positive example I would like to mention the Competence Center Isobus, in short CCI, in Osnabrück. Through this I think we've been able to implement particularly well customer wishes for easier operation of joysticks through the CCI A3, and of terminals with the CCI 1200.

**XtraBlatt:** A further key word is reliability of sensors, electronics and software – a point that increasingly frustrates agricultural contractors in particular ...

**Jan Horstmann:** Software compatibility between tractors and implements continues, unfortunately, to be an acute problem. What's more, one that might have been solved a long time ago if all manufacturers certified their machinery to Agricultural Industry Electronics Foundation (AEF) standards. This hasn't happened. Via [www.aef-online.org](http://www.aef-online.org) every end customer can, before purchase, discover at any time through the freely available AEF databank whether a particular machine is appropriately certified and whether it functions faultlessly with machinery already being used. Sadly, this service is taken advantage of not nearly often enough, even though it offers great help. I can only urgently recommend that it is used.

**Hassig:** As far as sensors and electronics are concerned, I agree with you absolutely. Here, robustness and reliability are all-important. In principle, it cannot be that a € 400,000 silage harvester breaks down because the quality of a € 1 sensor is defective. While it's clear that there will always be breakdowns, the machinery functional reliability in the field must ensure highest dependability under all practical conditions. This applies to all electronics and sensors and is why the theme is so important in Krone product development. Among future aims are machines with the intelligence to automatically give warning following first signs of technical defects, so that help can be called in good time.



Sebastian Hassig is mechanical engineer and from July heads Construction & Development.

## “MACHINERY RELIABILITY IN THE FIELD MUST ENSURE HIGHEST DEPENDABILITY UNDER ALL PRACTICAL CONDITIONS.”

SEBASTIAN HASSIG,  
C & D MANAGER, KRONE

**Dr Horstmann:** I would like to speak on the theme software once again because the situation moves me greatly that, at the end of my professional career after decades of engagement with association committees, I have to come to the conclusion that our branch still hasn't reached the position it should be in. With the many updates that are regularly available for tractors and implements, we as manufacturers must realise that that the appropriate clear documentation, testing and certification has to be followed.

The whole agricultural engineering branch from VDMA to AEF, i.e. the Agricultural Electronics Foundation, has agreed on this certification. Sadly, though, not all obey requirements. Krone is number 2 on the manufacturer list regarding the number of its machines that are AEF certified. Some of the large tractor manufacturers are also on this list, but fairly well down. Nevertheless, when there's a failure somewhere, it is naturally always the implement at fault. Never the tractor! This is not acceptable!

Thus: when a customer is interested in a new tractor and e.g. a new forage wagon, then the AEF databank should be consulted beforehand. If the wished-for tractor is not certified, then its purchase should not even be considered. The pressure must come from the customer. Otherwise nothing will change. This is because there are unfortunately still manufacturers that cover the whole process chain in their own colours and aim to exploit digitalisation wrongly to encourage customer binding - even when they publicly insist on the contrary.

**XtraBlatt:** That sounds like a farewell with mixed feelings ...

**Dr Horstmann:** No. Quite the opposite! It's been a privilege for me. An enormous amount has been created and achieved, including the association and committee activities mentioned here. And the list of milestones we've achieved with the team in day-to-day product development is just as impressive.

That is perhaps most important of all: the working together with people – fellow employees, colleagues and customers. The variety of tasks, the gigantic free room allowing the opportunity for creativity, which with Krone was, and remains, possibly unique in this sector. Because one thing is sure: the cost advantages of scale that some concerns in our sector enjoy, for instance in buying input materials and sales pricing, will never be possible for a medium-sized firm such as Krone. The only route to success left is, therefore, to be better than all the others. With innovations, with quality, with direct contacts to the market, first class service: in Krone we must produce the whole package better than all the other manufacturers and retain our nearness to the customer. This is our greatest advantage. I've been able to contribute to this, which makes me very proud. Without fail, it was always highly interesting!

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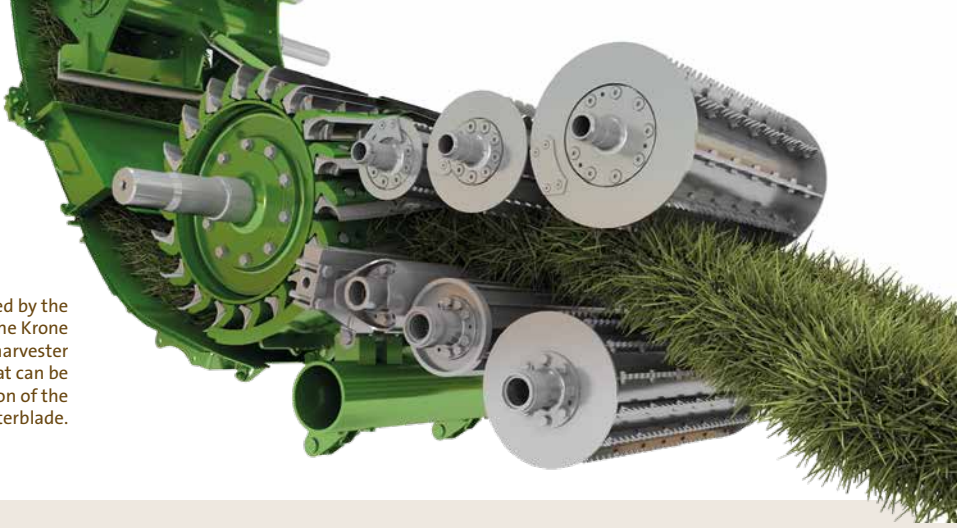
## QUALITY FORAGE HARVESTING SERIES – PART 3

# A CLEAN LIFT



**Mistakes made during silage harvest directly effect a farm's financial results. So keeping a close eye on the entire forage harvesting chain from mowing to carting home pays real dividends.**





The grass is firmly compressed by the six precompression rollers in the Krone BiG X self-propelled forage harvester so that the resultant mat can be cleanly chopped by the action of the knives against the counterblade.

**I**n our three-part series we cover what the farmer should watch for during harvest and machinery adjustment, so that his or her silage turns out “a cut above the others”. Part 1 covered mowing; part 2, tedding and swathing. In this third section we concentrate on pick-up and carting by forage harvester and forage wagon. We are supported by experts Daniel Bütter and Benedikt Lambrecht-Speller. As Krone forage harvester specialist, the first is an expert on harvesting chopped forage, while Benedikt Lambrecht-Speller specialises in forage wagons and shares with us his deep knowledge of this machinery.

## CORRECT COLLECTING

A cleanly lifted forage harvest begins with the pick-up – quite independently of whether the feed is for chopping, baling or loading into the forage wagon. “Crucially, the pick-up mechanism should be looked over carefully before leaving for the field”, explains Daniel Bütter. “Watch out that all the tines, grouped in W-shape rows, are in place with no signs of wear. Everything must be right in this respect if I want to achieve optimum raking and pick-up.” All drives should be checked according to lubrication plan and appropriate servicing carried out. Adds Benedikt Lambrecht-Speller: “Don’t forget to check tyre pressures on pick-up gauge wheels. In practice, they’re often wrong. This can lead to inaccurate pick-up height settings in the field or, where tyre pressures are too high, lack of smooth forward progress and pick-up bounce.”

Pick-up height has a direct influence on feed quality, so must be precisely set and then checked on the field. As a rule, tines should be set so that the ends are 1–2 cm under stubble height. “On an even concrete base, the pick-up height can be pre-set accordingly by adjusting the gauge wheels right and left as well as gauge

rollers in the middle under the pick-up. At a cutting height of 8 cm, the lowest point of tine setting should be 7 cm above the ground. On the field after the first few metres of operation, the operator should dismount for another close look and make any necessary readjustment. Here, as with tedding and swathing, it’s preferable to leave a few scraps of grass behind rather than pulling dirt into the forage through tines hitting the field surface. The aim is always to reduce feed contamination as much as possible”, warns forage harvester specialist Daniel Bütter.

## ADJUSTING THE PICK-UP

The pick-up suspension setting is a further important factor with definite influence on feed quality. With the Krone ZX series forage wagon, pick-up suspension is hydraulically controlled and can be set between 0–100 % from the tractor cab. With the other forage wagon models, pick-up suspension is adjusted by pre-setting the supporting springs. With the silage harvester, on the other hand, suspension control is always hydraulic. “The suspension

pressure is set so that the pick-up can follow the ground contours smoothly. Setting it too hard on soft ground, for instance, can lead to repeated contamination of feed while a soft suspension can have the tines missing the swath altogether at times, with feed left lying. With silage harvesters, suspension pressure can be set at up to 50 % of the pick-up weight. But the key words here are ‘less is more’”, cautions Daniel Bütter.

**“THE AIM IS ALWAYS TO REDUCE FEED CONTAMINATION AS MUCH AS POSSIBLE.”**

DANIEL BÜTER,  
FORAGE HARVESTER SPECIALIST



Forage intake flow is another factor with direct influence on silage quality. With the Krone ZX forage wagons and the harvesters, the speed of the pick-up tines can be set to match speed along the ground so that when the latter reduces, pick-up rpm also automatically slows, or vice versa.





Recommended by the experts is regular inspection of knives and counterblade. In Krone forage harvesters the appropriate inspection hatch is V-shaped with opening handle.

“The aim is that the swath is fed into the machine in a continuous and even flow. If the pick-up is running too fast, the forage is gathered in great gobs for feeding into forage wagon rotor or harvester intake and chop quality is negatively affected. A slow pick-up speed can result in the swath being pushed forwards on the ground”, says Benedikt Lambrecht-Speller.

## CHOP LENGTHS

With forage harvesters the speed of the intake rollers, and therefore length of chop, can also be steplessly adjusted. “Our aim is to achieve an overall smooth throughput by matching pick-up and intake speeds. Only when these two are synchronised have we taken the first step towards best possible chop quality in harvesting”, explains Daniel Büter. The six precompression rollers on Krone forage harvester intakes ensure feed is firmly consolidated before reaching the knife drum. This expert stresses: “The more effectively we consolidate the forage layer, the cleaner the chop executed by the knives against the counterblade.”

Inside the harvester, how the forage is to be further processed is decided at the knife drum. How precise is the chop to be? How long? “In principle, grass is chopped to longer lengths than maize”, relates Daniel Büter, “But



A uniform and thin layer of forage should be unloaded onto the clamp. This operation is greatly aided when optional discharge rollers are fitted onto the forage wagon.

there are naturally farmer preferences here too. Some like it longer, other shorter, depending on how the grass is used in the rations. In practice, we see grass chopped at lengths of from 10 to 25 mm, the length controlled from the harvester cab. Chop length also has direct influence on subsequent clamp consolidation, one of the major influences on silage making success.”

## WELL-SHARPENED

For the perfect cut, the knives must naturally be sharp and the counterblade optimally set, adds the product specialist. “In the past it was common to sharpen the knives thoroughly once a day. Under today’s conditions, several short sharpening cycles with appropriate readjusting of





Regular sharpening of the forage wagon knives, here carried out with the mobile SpeedSharp sharpener, enables continuous chop quality and savings on required power.

the counterblade over the entire working day are seen as better practice. The readjustments can be comfortably carried out from the cab via automatic functions so that there's continuous back-up ensuring good chop quality. There's no hard and fast rule as to how often sharpening should take place. After all, rate of wear is very closely associated from the field conditions and the material chopped."

Focussed-on more in the future, reckons Daniel Büter, will be analysis of harvest data documentation. "Nowadays, it's no longer a problem to collect yield data, nutritional content and dry matter – and all of it site-specifically. Analysing this data informs the farmer on best-yielding areas as well as poorly performing ones, all important management information. There will be other tools coming for fine-tuning management within the framework of digitalisation, producing further useful data for the forage harvest."

## FORAGE WAGON SET-UP

With forage wagons too, harvest material must flow into the machine as optimally as possible. To help here the operator can adjust the articulated drawbar accordingly

for optimum synchronisation between pick-up and rotor. "Generally, at start of loading the forage wagon should be lowered as much as possible by the articulated drawbar. Here, we're seeking the compromise between limited lifting height (drawbar lowered) and a wide opening for high throughput (drawbar lifted). This is why we have an automatic system on offer that, at the touch of a button, lowers the wagon via articulated drawbar during loading to a predetermined height. As soon as the pick-up is raised, e.g. at the headland, the wagon is automatically lifted to highest position to guarantee maximum ground clearance", explains Benedikt Lambrecht-Speller.

The pick-up rpm and rotor rpm with Krone ZX forage wagon models can be matched. "Whatever the conditions, this is the best way to ensure that our very large rotor-pockets are always well-filled in order to achieve a good clean chop", informs the forage wagon specialist. He adds: "When working with a forage wagon we recommend, depending on swath size, a pto rpm of 850 to 1000. Down-gearing gives a rotor speed of approx. 50 rpm. In a light crop of autumn grass, this rpm can be reduced accordingly for optimal filling of the rotor and thus achieving best requirements for a perfect chop without damaging feed structure."



## CLEAN CUT

Chop length is pre-set on forage wagons. The manufacturer boosts gentle handling of delicate forages, clover for instance, by offering wide conveying specifications. On the Krone basic model series AX, knives are 45 mm apart. The MX, RX and ZX models have a rotor diameter of 880 mm with 37 mm between the knives. It's around the knife area that the three model series differ, except for smallest details. The differences are in rotor width and therefore number of knives which, with the top ZX model, reaches 48. "Knife sharpness is a central theme when we're looking at the forage wagon influences on feed quality. The target is a clean chop while, at the same time, saving energy during harvesting. Thanks to the shearing action, the plants are actually cut instead of torn. In this way, the surface of the cut is kept as small as possible so that the stalk retains moisture and the feed structure, so supporting the ensiling process", adds Benedikt Lambrecht-Speller.

As for the sharpening cycle, there are no fixed rules on how often sharpening should take place, he continues. "In practice, mornings are often started with a sharp set of knives which are replaced in the evening so that work can recommence right away the next day. But remember, knives don't become blunt at the same rate. The process starts slowly and speeds up increasingly as the working day continues. One result is that fuel consumption increases as chopping gets harder and, of course, quality of chop itself suffers more and more as the day wears on. The expert advice is therefore not to wait too long before sharpening. With SpeedSharp, our mobile knife sharpener, this can be carried out at midday very rapidly and with minimum effort."

A further aspect of forage wagons doubtless affecting feed quality too, is the loading/unloading process. Forage wagon specialist Benedikt Lambrecht-Speller points out: "Here, we're looking for the best compromise between high load density and counter pressure at the rotor which, in turn, gives us a perfect cut. Our wagons offer the PowerLoad automatic system. Via



This is how it should look: optimal forage wagon chop quality.

two sensors this automatically controls movement of the chain-and-slat floor. When forage has built-up sufficiently against the front wall the first sensor, measuring load volume in the upper area of the wagon, is activated. The second sensor is mounted above the rotor and measures density of the forage flow into the wagon. The system is controlled quite simply straight from the cab. With activated volume sensor and the pressure sensor just short of its pre-set value, the chain-and-slat movement is slowed, therefore reducing pressure. This continuous adjustment permits maintenance of a constant counter pressure at the rotor and in this way optimal loading of the wagon."

**"GENERALLY, AT THE START OF LOADING THE FORAGE WAGON SHOULD BE LOWERED AS MUCH AS POSSIBLE BY THE ARTICULATED DRAWBAR."**

BENEDIKT LAMBRECHT-SPELLER,  
FORAGE WAGON SPECIALIST

If unloading is carried out on the clamp, he advises, the aim must be a thin and as uniform as possible mat of forage deposited on the surface. Helpful here are Krone's optional discharge rollers. Their distribution action enables a desirable layer-by-layer compaction by the clamp-consolidating tractor. «





# FUTURE-ORIENTED FIELD TRIAL

Everyone in the sector talks about digitalisation and automation of agricultural machinery – but how will these work in practical terms? A field trial supported by the federal government aims at finding the answers.

Manufacturers Krone and Lemken are co-operating in a joint project seeking ways of increasing reliability for sensor data analysis with agricultural machinery. The project, AI-TEST-FIELD, will start under management of the German Research Centre for Artificial Intelligence (DFKI), Research Department for Plan Based Robot Control Systems and be financially supported by the Federal Ministry of Food and Agriculture (BMEL).

On the test field to be established near Osnabrück, the surrounding environment and management influences are to be scanned by a sensor wagon equipped with various instruments such as laser scanner, stereo camera, time-of-flight camera, ultrasound and radar. The sensor wagon will be run on

an accurate and reproducible route along a rail track through the field. Together with the metadata from the recordings such as weather conditions or time of day, the raw data will provide the necessary database for algorithm-based management. The project thus forms an important bridge for the transference of current basic research to meet the practical needs of the agricultural sector and to help in future certification processes.

Within the project, Osnabrück University is responsible for the construction of the rail track sensor wagon and the integration of the sensor technology. Krone and Lemken bring with them their know-how on the industrial application of sensor systems and of agricultural machinery. The DFKI Research Department for Plan Based Robot Control Systems focusses on handling of data and the development of AI methods. Additionally, the project will be accompanied and supported by the TÜV Nord AG (Technical Inspection Association).

Dr Josef Horstmann, Krone managing director Construction & Development, is extremely pleased about the financial support of around 430,000 € from Berlin. “Digitalisation, artificial intelligence, data management and machinery that carries out sensor-supported and automated work operations: together, we’ll follow-through all these themes with research on the AI-TEST-FIELD. Hereby, the focus is on the future work of farmers and agricultural contractors. For instance, field robots will be tested under working conditions. Also researched will be sensor and data-based analyses pertaining to crop production, crop protection and plant nutrition. Results will help us to find the best possible ways to deal with the great challenges of the present and the future. After all, what we’re talking about here is making technology more and more intelligent so that it can work as efficiently as possible under all conditions.”





AUSTRALIA


# AT THE OTHER END OF THE WORLD



The production of "oaten hay" is a lucrative enterprise for many of Australia's farmers. A large proportion of this hay crop is exported as quality forage to Asian markets.

**K**rone products have been distributed in Australia for over 40 years via general importer Kubota Australia and this is where Lars Pasedag is employed. He's senior production manager for Krone, servicing the market "Down Under" with his team. "In the beginning, Dr Bernard Krone had talks with the Japanese agricultural machinery manufacturer, stimulating interest in the Australian market. Until then, Krone had its own subsidiary there but was looking for another way of servicing this market", he recalls. So, just as Kubota





What do you think of first when Australia comes to mind? Kangaroos? Ayers Rock? Or Crocodile Dundee? Here's a subcontinent that has a lot more than this to offer, especially in the field of agriculture. Let's take a closer look "Down Under."

started selling its own farm machinery in Australia it also became general importer for Krone. "The two product ranges supplemented each other very well. And as far as development of the product programme was concerned, both aim increasingly at the professional farms and this has a positive influence on the agricultural machinery business. In Australia, Kubota offers tractors, implements for soil cultivation, fertiliser spreading and spraying. Krone delivers everything concerned with forage harvesting."

## 91 BRANCHES

The service and sales network in Australia nowadays involve 91 branches that sell mainly Krone and Kubota equipment and, to a lesser extent, work with some other tractor manufacturers. "In a number of areas where very powerful tractors are required, we offer Krone machinery through John Deere dealerships too", he adds. A network of 80 dealerships in a country that area-wise is over 20 times larger than Germany at first sounds as if it's

not nearly enough. However, those who know Australia a little are aware that the most intensive agriculture is concentrated along the coastlands.

In total, Australia has around 85,000 farm businesses. "Basically, you can say that on the land stretching from the coastline to 200 km – maximal 400 km – inland, intensive agriculture with dairying and crop growing pays, whereby milk production reduces increasingly the further the coastline is left behind. These regions are



Because of an often-extreme shortage of moisture, no-till has become established in Australia – drilling seed without prior stubble cultivation.



For hay production the cereal is cut by disc mower and swathed. Here a farmer works with a mower combination.

where we are active with our business. If you move still further inland, the countryside becomes progressively drier and almost the only farms to be found are extensive grazing enterprises”, explains Lars Pasedag.



The range of dairy farm sizes is very large in Australia too. On average, farms milk around 650 cows with an average annual production of some 6,200 l.



The customers, above all the agricultural contractors that during the season can also find themselves working 1000 km from their home offices, are used to great distances and are organised to deal with this situation. They would have prepared themselves before season’s start. Replacement and wearing parts are bought beforehand and kept ready in accompanying support vehicles. “Our customers are extremely resourceful and know how to keep their machinery fleets running by their own efforts”, he says, adding “We also believe that digitalisation and telemetry will in the future bring us still nearer to our customers. They are very interested in these technical solutions



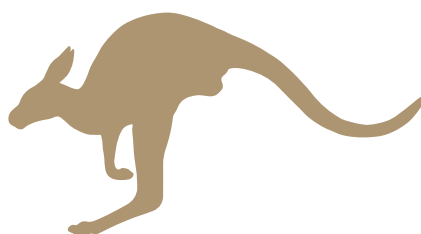


The Australian market for self-propelled forage harvesters is limited. Only some ten machines are sold annually.

because potentially they can bring with them substantial time savings when an electrical machine part strikes and the customer service can switch onto the case long-distance.”

## MACHINERY AT THE LIMIT

From a product manager’s point of view, the Australian farm machinery market is a demanding one. “Here, a lot is expected from machinery. Temperatures are extreme, the dustiness of conditions at times very bad, the soil sometimes stone hard. The weather can be too wet. More often, however, much too dry. We have degrees of wear on machinery that would never be experienced in less extreme middle European latitudes. Accordingly, Australia is a very interesting land for the developer of agricultural machinery. Machines that continue working here wouldn’t wear out nearly as fast in other



## “WE THINK THAT DIGITALISATION AND TELEMETRY WILL BRING US STILL NEARER TO OUR CUSTOMERS IN THE FUTURE.”

LARS PASEDAG, KRONE PRODUCT MANAGER, KUBOTA AUSTRALIA

parts of the world.” An example of this: Where a big baler is seen as being worked nearly to full capacity with 6000 to 7000 bales per year in a country like Germany, 15,000 to 20,000 bales is regarded as a normal year’s work in Australia and, in extreme examples, annual output per machine can edge up to around 40,000 bales. “The bales in this case are the HDP ones weighing from 700 to 850 kg”, adds Lars Pasedag.

Australia is a big exporter of so-called “oaten hay” which sees oats cut with the grain at milky stage and swathed behind the disc mower. After the cereal is dry enough, it’s baled in BiG Packs and transported for further processing with the bales opened and the forage re-baled with an industrial packer before being loaded into overseas shipping containers. “Australian oat hay is especially popular in Japan, Taiwan, Korea and China as high-value feed for dairy cows. About





Above: Operating at full power in Australia with the Krone BiG M mower conditioner during oat hay production.



Left: On good soil with 450 mm precipitation per year, 5 to 6 t/ha wheat is harvested. But in dry years the yield can slip back to 3t, or even 1.5 t/ha.

1 m t are exported per year”, reckons Lars Pasedag. This business booms, and for many Australian farmers oat hay production represents a secure income source. The total market for BiG Pack balers in Australia is meantime in the worldwide top five, peaking in the 2020 season with 385 machines sold.

## SAVING WATER IN CROPPING

“Australia’s farmers decide every year anew what they’re going to grow on their fields. Contrary to the situation for EU farmers, there are no compensation payments available. Production is at world

market prices. Because in recent years we’ve experienced more dry periods, many farmers are dealing with this situation through ‘no-till’ strategies. When at all possible, cultivations are avoided to minimise evaporation losses and retain as much moisture in the soil as possible. The stubble is sprayed with herbicide before sowing directly with a tine drill”, is how Lars Pasedag, describes this Australian arable strategy.

Farmers have perfected this system to such an extent that, even in years when there’s hardly any rain at all, reliable harvests can still be carted home. “This



approach based on spraying is very much contrary to the more ecologically-aware trends in Europe. In Australia, though, there's no choice – if the harvest yield is to be secured. On good soil with 450 mm precipitation annually, we achieve wheat yields of 5 to 6 t/ha. But yields can sink to 1.5 to 3 t/ha when it gets really dry. Farmers thus keep a close watch on crop growth curves. If the weather turns too dry, mowing and marketing for hay can well be the most lucrative reaction”, he explains. The sizes of arable farms stretch from 1,500 t to 10,000 ha with structural change to even larger units ongoing.

“With 1,500 ha it would be pretty difficult to make a living. Double that area should be the aim for a viable enterprise”, concludes

Lars Pasedag, describing the current situation for Australian crop growers.

## GRASS SILAGE IN ROUND BALES

The average dairy farm milks around 650 head with annual yield of 6,200 l per cow. However, the range is very wide in this respect, depending on unit size and production intensity. And in milk production too, farmers are being forced to expand their businesses to spread costs and increase incomes. Growth can be through taking over other farms or via cooperation. “Here, it increasingly comes about that a number of farmers get together and start a type of cooperative, bulk buying and marketing output together.”

Basic ration is mainly grass silage. In Australia, though, grass is usually cut just once or, at the most, twice. First cut is late so that as much bulk as possible can be harvested. The silage is normally round-baled and wrapped. Only the very largest farms use a harvester and chop grass for silage. The second cut, when made at all, is then baled for hay. Forage wagons or chopped silage trailers for clamp filling don't play a big role in Australian silage. “Here, around ten self-propelled forage harvesters are sold per year and around 20 forage wagons”, says Lars Pasedag. “On the other hand, the round baler market is substantially larger with 450 to 700 machines, from which approx. 30 are baler-wrapper combinations.”

What Australian farmers and agricultural contractors expect from modern farm machinery is increasingly approaching the European situation, he feels, concluding: “Arable businesses are, however, a little different. Tractors may still be comparable, although the machines are naturally in the higher HP classes. The no-till strategy means soil cultivation implements are substantially different and reflect more the machinery sizes applied in the USA. But particularly on dairy farms, machinery types are much as in Europe. That works out well for enterprises such as Krone with our comprehensive product portfolio.”

## »» ABOUT THE PERSON: A CHILD OF FARM MACHINERY

As son of an engineer whose job was testing agricultural machinery and who also ran a dealership in Brandenburg, Germany, Lars Pasedag (42) has been immersed in the world of farm machinery from childhood on. After training as agricultural engineering mechanic and achieving a master certificate he set off for Australia for a year, working on farms Down Under. Returning with loads of experience in his backpack, Lars Pasedag got into conversation with Krone at the Agritechnica show. The outcome was

a post as service technician for the export market with the firm. His task involved accompanying machines in the BiG model line such as forage harvesters, SF mower conditioners, BiG Pack balers, into a very large variety of foreign markets such as Japan, New Zealand, Australia and many European countries too. As next station in his professional life there followed a move to Kubota Australia. Nowadays, he lives with his wife and three daughters in Melbourne and is product manager for the Krone general importer.





# NEWS-TICKER



## DEATH OF WALTER KRONE

Walter Krone died at the beginning of 2021 following a long illness. He was 79 years old. As managing director of Krone-Großhandel from 1977 to 2001 he contributed greatly to this organisation's outstanding development by concentrating on the exclusive sale of some premium machinery makes.



## CORONA COSTS ...

... of 3 m € appear in the Krone Group accounts after a year of pandemic. Material expenses for masks, disinfectants, etc. up to the end of March ran to approx. 1 m €. To this came personnel costs for items such as organisation and prevention measures that added a further 2 m €.



## PRIZE-WINNING NET CHUTE

A special SIMA award in 2021 for Krone: the net chute offered by Krone for its Vari-Pack and VariPack Plus models received a prize in the category "health and safety in the workplace". The chute permits the net to be easily and rapidly put in place without any heavy lifting.



## KRONECTED LIVE

Krone presents interesting forage harvesting themes with the new video format Kroneconnected Live, broadcast 13 times on Tuesday evenings over the Krone YouTube channel. All episodes in the series are also available under [www.krone.de/live](http://www.krone.de/live)

## FREE TESTING

Detailed analyses of machinery data as well as data sharing between different makes – the functions are now enabled by Krone Smart Telematics and the universal agrirouter data hub. These tools come from Krone currently as cost-free data management package for the Krone SmartConnect telemetric unit.



## TENANT CHANGE

After 30 years in charge at restaurant "Haus Krone", tenants Dieter and Carmen Brodatzki left as planned at the end of June for their well-deserved retirement. A new tenant is already preparing to take over; more information follows in your next XtraBlatt.





## NEW MARKETING MANAGER

At the beginning of March, Markus Steinwendner took over as manager of the Maschinfabrik Krone marketing department. The 37-year-old from an agricultural contractor family was member of the Krone marketing department in Austria since 2011.



## SEEKING SUBJECTS

The search is on for dramatic pictures of Krone machinery at work. The company wants them for 2022 Krone calendar motives. Want to know more? Access: [www.landmaschinen.krone.de/kalender2022](http://www.landmaschinen.krone.de/kalender2022)



## ONLINE MACHINERY TRAINING

Because the corona pandemic led to the cancellation of numerous obligatory face-to-face training sessions in Spelle, Krone built a film studio in its Training Center from where continuous schooling is now conducted via streaming. The participant record so far: more than 100 trainees from 16 nations instructed simultaneously!

## SUCCESSFUL TRAINEES

In the first half of 2021, a total 38 trainees and dual students in the Krone Maschinfabrik successfully completed their training. Those interested in undergoing training with Krone can find useful information under: <https://gruppe.krone.de/karriere>



## YEAR-ROUND OPERATION

Right on time for the main maize harvest, numerous BiG X harvesters arrived in Brazil as seen below on the quayside of Paranaquá. The BiG X models will mainly be put to work in maize, but also in crops of tropical grasses and in sugar cane. This multi-crop flexibility allows the BiG machines to chop around the clock throughout the year.



## 40 CCI MEMBERS

The number of members in the Competence Center ISOBUS e.V. (CCI) continues to increase. With SIP Strojna Industrija D.D. and Streumaster Maschinenbau GmbH joining, there are now 40 firms active under the CCI roof. Grounded in 2009, the CCI includes Krone amongst its founding members.



**GUNZESRIED SENNEREI**

# MORE THAN JUST CHEESE



Peter Haslach has the traditional job description of “rechnner” within the cooperative Gunzesried Sennerei.





- 1** The original sennerei building. This is now used for farm shop and snack bar. In the cellars are situated the modern cheese production plant and maturing room.
- 2** Cheese portions for sale are cut fresh from the round. Highly experienced staff mean that each segment is cut precisely right in weight, almost down to the gram.

**The best-known product from the Allgäu is easy to answer: cheese. Here, it is often still produced by smaller cheesemaking plants, in many cases run as cooperatives. We call-in to one such business, the Gunzesried Sennerei.**

**N**o milk comes out of our valley, and none is trucked in.” Speaking is Peter Haslach, rechner for the Sennereigenossenschaft (cheesemaking cooperative) Gunzesried. His title, rechner, is an historical one. Nor is it pronounced in local dialect the way one would think. In the old days, the rechner measured the milk delivered by each dairy farm. Nowadays, Peter Haslach’s post is more overall manager, taking care that everything runs just right. But he is also a member of the cooperative. The sennerei stands for continuity – Peter Haslach

is only the fourth person to fill his post in its 129-year history. His predecessor was 50 years in office. The sennerei also stands for innovation. The production facilities are right up-to-date and state of the art for hygienic standard. A biogas plant is fuelled with by-product whey. It’s also always on the lookout for new products such as ice creams, cheese soups and sauces. A total 2.5 m € has been invested over the past five years.

## ROBOT CLEANER

The milk is delivered twice daily from the members’ farms. Currently there are 12 active farmers involved. While delivering their own milk involves a little more work for the milk producers, it also means the cheese plant doesn’t need to use a tanker – and the farmers save on cooling costs. The sennerei cools the evening milk on arrival before it’s mixed with the morning deliveries and curded, seven days in the week, 365 days in the year. Involved in production is a master cheesemaker and two trained dairy specialists.

The main products are Allgäu mountain cheese (called Bergkäse here) and Emmentaler cheese. Only unpasteurised milk from hay-fed cows is delivered. Following rennet addition, the resultant curds are separated from the whey into so-called “finishers”. The creamery has two finishers: one of 5,500 l capacity and another holding 1,000 l. The cheese “laibe” – rounds or blocks – are created at this stage. A mountain cheese weighs 30 kg, each Emmentaler cheese 80 kg. After pressing, these cheeses are soaked in brine and then racked in the maturing cellar. There they need regular care, rubbing with salt and turning. This operation is still carried out manually in part. “But nowadays we’ve got a new colleague helping”, smiles Peter Haslach. This worker doesn’t even draw wages, although initially costing the cheese plant around 250,000 €. The “extra hand” is a robot that automatically removes cheeses from the racks, wipes them down and replaces each one. “A big investment. But one that takes over most of this heavy labour”, explains the manager.

Around 4,000 l milk is processed daily. In a year this produces some 130 t of cheese. On a single day, either Emmentaler cheese or mountain cheese is made. Other types of cheese are also produced at the sennerei when required. Peter Haslach: “In total we have a range of 17 types of cheese including diverse slicing cheeses with herbs or meadow flowers as ingredients. We also market fresh milk, quark, yoghurt, and butter. Mountain







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cheese and Emmental cheese are sold at various ages and currently, our sales hit is mountain cheese matured for six months. An absolute rarity is 'Bergkristall' mountain cheese, which is matured here for 24 months before sale. Not that the product is often available because our mountain cheeses are usually all sold before they reach this age."

## PRODUCT IDEAS

The Gunzesried cheesemakers cannot complain about lack of demand. "Sure, we could always sell a little more. But our limiting factor is the available grazing land in the valley. There isn't enough room for our members to expand", the manager tells us. Despite this, the cooperative recognises the importance of having as many products as possible in its range. This thinking is behind the introduction of cheese sauces and soups sold in glass jars. Relatively new in the range is the coop's own ice creams, which are already selling well.

"We came on these rather by coincidence", recalls Peter Haslach. "We had to buy a new pasteuriser and, at the equipment dealership, there was an ice cream machine on sale directly alongside. So we staged a trial with some of our milk made into ice cream by another company. This was then served as dessert at a meeting of our members. It was an immediate hit. So much so that we bought a machine of our own and tried

out various recipes. Now, we make a total 10 flavours which we alternate regularly. A speciality of ours is 'Nagelfluh', so named because it looks like a sort of stone found here that bears the same name, which is also what our local mountain range is called: the Nagelfluhkette. Giving this ice its unique similarity to the local rock are ingredients including three different chocolates, cranberries and a mix of nuts."

## HIGH DEMAND

The dairy cooperative products are mostly sold in the organisation's own shop with some retailed through regional outlets. "The direct sales were of secondary importance to begin with", says Peter Haslach. "The customers marched through the cheesemaking area because our sales counter was right at the back. In time, this situation no longer satisfied the official hygiene requirements. Nowadays this is acceptable but earlier our membership did not agree at all with the restrictions. However, the first real shop, opened in 1997, brought us many possibilities.

"Important for us is being able to offer good value for money. That we achieve this aim is regularly confirmed by our customers. The cheese retailers in the towns have much higher prices. But of course these businesses involve 'middlemen', which we don't have. And naturally we also profit

greatly from the holidaymakers coming into our region. They buy directly in our shop but often afterwards continue as customers through our website. Incidentally, we were able to completely compensate for the corona-caused drop in our 2020 sales through the increases in our Internet sales."

Admittedly all this marketing requires extra effort by the coop staff. After all, the cheese not only has to be packaged and posted, payment arrangements are also important so that purchase is as simple as possible for the customers. "Alongside PayPal, credit cards or bank transfer can be used with us. We may be a comparatively small trader, but this doesn't stop us being compared with the very large players on aspects such as ease of payment." The easy trading opportunities at Gunzesried Sennerei are now also enhanced by a cheese selling automat on-site so that purchases can continue after shop closing times.

## WHEY BIOGAS

This sennerei is also now well-known far over the regional borders because of a special pilot project: a plant fermenting whey to produce biogas for heat and electricity. "Earlier, our by-product whey went as feed to a pig producer," explains Peter Haslach. "But there came a time when this outlet no longer existed - and then we had a problem. We even thought for a while of starting our own pig feeding





- 1** At Gunzesried, cheese production is a combination of handcraft and technology.
- 2** Immediately recognisable: here's where the mountain cheese is created.
- 3** A robot has joined the labour force to help in caring for the maturing cheeses. Here the robot works on its own with-drawing cheeses from the racks.

enterprise. But that would have brought new problems such as where to dispose of the manure. We don't have the available field area here in the valley for this. We also discussed building a whey drying plant. Finally, we

came upon the idea of generating gas from our whey. This was not so easy to realise. On a large scale there would have been little problem. But with a plant as small as ours the situation was unique."

## » CALLING-IN ON THE SICHLERS

Before visiting the Gunzesried Sennerei, we made a short stop at the first farm on the right just at the beginning of the village. With his wife Ines, coop director Martin Sichler farms nearly 30 ha of pasture. On top of that, his 27 cows and followers have access to mountainside grazings. Notable on our tour of the farm was the well-ventilated livestock barn, the excellent hay quality and the top class cattle. The Sichlers are dedicated Braunvieh breeders and so the family's favourite

cow had to be included in the photo. Average milk lactation per cow here is 9,300 kg at 4.2 % fat and 3.7 % protein. Production rations comprise barn-dried hay, grass cobs and concentrate feed. For forage harvesting, the family uses Krone equipment exclusively, working with the local dealership Gruma. Part of the farm business are two holiday flats and a guest room for tourists. On the summer grazings, a 26-bed hostel also offers group accommodation.



Ines and Martin Sichler run their dairy farm in Gunzesried. Stocking: 27 milkers plus followers.

Following a long learning process taking around three years, everything now functions perfectly, says the manager. First steps included finding out the right amount of whey to be regularly fed into the fermenter. The pH had to be exactly right, too. "Then in winter we found that it was simply too cold for the bacteria to thrive. Nowadays, though, we produce gas to generate 30 kW power fuelling our high-pressure steam boiler. If we need more fuel, we can simply transfer to liquid gas. Whey fermentation residue can be easily disposed of through the sewage system."

Including three people in production and the manager, a total 24 staff work at Gunzesried Sennerei. There are naturally part-timers employed too. In a community with less than 500 population the plant is an important regional employer. But the main aim of the cooperative is ensuring an acceptable milk price for its members. Certainly, investments must be made, too. On the other hand, a profit after costs is not so important in this case. The manager says the price paid to the milk producers is akin to that for organic milk elsewhere, although all milk is produced under conventional management. The number of cooperative suppliers has remained very stable nowadays. The tourist trade in the valley helps the farms with additional income and so effectively avoids any further structural changes. Back in the 1920s, there were 40 farms supplying the coop. «



**PUBLIC RELATIONS**

# **AMBASSADOR FOR AGRICULTURE**



With the smart phone in the cow barn, Agnes Greggersen is farmer and agri blogger.



Agnes Greggersen's Angeln cattle are not only tagged with their number but also with a personal name.



**Agnes Greggersen is a farmer. With her parents she runs a dairy farm with 120 Angeln cattle near the Baltic coast in Schleswig-Holstein. Her cows and her work are also themes in her blogs as “Angeliter Deern” on Instagram. We pay her a visit.**

**W**ith practiced steering, Agnes Greggersen manoeuvres the feed mixer wagon backwards in the cubicle barn. Most of the 120 red-brown Angeln cattle are already lowing expectantly, looking forward to the mix of maize and grass silage along the feeding rail. Munching begins immediately. Agnes Greggersen smiles, pulls out her smart phone and takes a few snaps. “I love my cows”, she laughs.

The farm that she runs with her parents lies in the north German region of Angeln. More precisely, in Schwackendorf near Kappeln within sight of the Baltic Sea. The name of this stretch between Schlei and Flensburg Fjord is also that of the red-brown cattle breed that still dominates milk production in this area. The Angeln breed is long famed far over the region's borders for its quality milk and Agnes Greggersen is very active as breed ambassador everywhere. She and her Angeln cattle attract a growing fan community on the social media platform Instagram because this young woman is not only farmer but also agri blogger, posting her contributions under the name “Angeliter Deern” (dialect for Maid from Angeln).

“I see myself as an ambassador for farming. My aim is to present an authentic portrait of agriculture in the social media”, she comments confidently. It's not that she wants to romanticise work around the farm. Instead, her ambition is to explain the relationships involved in a plain and simple way for people not so knowledgeable about agriculture, and to show them how a modern dairy farm functions.

## **STREAMS OF INSULTS**

She began her Internet activities a few years ago with her own Facebook page, created to engender some advertising for holiday accommodation belonging to the farm, an important extra income earner for the family. At that time, she'd just completed her initial agricultural training and was preparing to start a college course. After graduating as Batchelor, Agnes Greggersen spent a practical year in Australia before continuing her studies, securing a Master of Science degree. At the same time, the family farm was being transferred to her name.

Because she was also continuously blogging on current agricultural discussions and associated ethical questions, it turned out that a by-product of her social media presence involved definitely not sociable reactions on-screen when a so-called “shit-storm” suddenly engulfed her Facebook page. Radical vegans targeted Agnes Greggersen with anonymous hate tirades and bombarded the page massively for several hours with threatening posts. “The posts even included death threats”, recalls the young farmer.

But instead of taking the easy way out and simply shutting down her page, our farmer and blogger chose confrontation and continued her social media activities despite the Internet mob. In fact, she took a firmer stance than before, because the hate messages were attacking her increasingly as farmer. In response, her blogging strategy aimed at spotlighting her profession and her love for Angeln cattle.





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- 1** When the morning ration is fed, the cows don't lose a minute getting started in the cubicle barn.
- 2** Angeln cattle: Agnes Greggersen's passion focusses on her 120 dairy cattle.
- 3** Always stay very flexible: Robots take care of the milking. Cows can decide themselves when they'll be milked.
- 4** Via Instagram and Facebook Agnes Greggersen reaches a growing number of enthusiastic followers.

## SOARING SUBSCRIPTION COUNT

And the strategy succeeded. Now, subscriber numbers to her Instagram account "Angeliter Deern" have reached an impressive 2,579. Those clicking through the Instagram posts come across some unusual ideas. For instance, conducting seminars with cows. How do such ideas come about? "Cows are simply wonderful animals, have a very good gift of observation. I find that we can all learn something from them", she feels. At short notice, a suitable seminar concept was worked-out. A number of friends were recruited and a trial session staged. The result

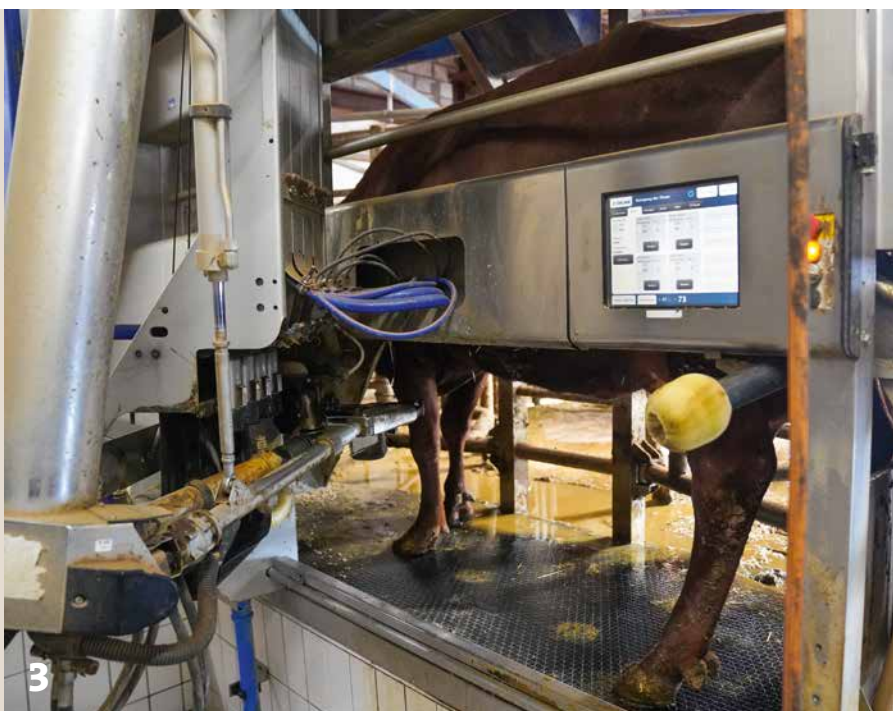


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indicated the idea certainly had potential and that further development would pay off. At the same time, it was important for this young farmer to continue consequent development of her own farm business by reviewing other possible enterprises. After all, the corona pandemic had demonstrated that the income source holiday accommodation could quickly disappear.

Even emotion-loaded themes are dealt with in the Angeliter Deern Instagram stories, subjects that could easily lead to misunderstandings and have substantial effects on the public image of agriculture. "The separation of cow and her calf is such a theme", says Agnes Greggersen. "Naturally,





the reason for this separation is that we make our living from the cow's milk.”

Critics of the practice term this as making profit at the cost of animal welfare. “Thereby it’s conveniently left unsaid that that this separation has to take place sooner or later anyway, and the later it is, the greater the distress caused.” To reduce this distress on the Greggersen farm, the separated calves are quickly housed in groups so that the young animals have company and can play together.

Her competent and humorous way of explaining relationships and living down on the farm have earned her plenty of positive feedback nowadays. “Even in our Internet era, some people still take time to write real letters of thanks”, smiles the blogger. Or they send their appreciation via the commentary reply function. A reaction about which Agnes Greggersen is equally happy. After all, this signifies that her aim is right on the mark!

## CONTROVERSIAL TRENDS

The young farmer also has things to say about the sometimes-controversial trends that unfailingly crop up in social media. For instance, there’s currently a hype stoked by some influencers in the ‘Beauty Community’ on using so-called barley-grass capsules (made from harvesting young barley plants before ear emergence). “Barley grass? We’re growing that too”, thought Agnes Greggersen. Not too long ago she took a closer look,

applying her agricultural competence. The result is an Instagram video in which she explains what barley grass really is – and the considerable drying input required. She also mentions the high fibre content and concludes that it makes little sense to use barley grass as a hair care product. Barley grain, on the other hand, is much more useful: as feed for pigs or for brewing, is how she sums up the humorous Instagram contribution.

Nor has the Angeliter Deern lost the ability to poke fun at herself in her agri blogs. For instance, when mourning the loss of partying during pandemic times. There’s no doubt that this fun-loving young farmer, who wants to celebrate her 30th birthday this year with friends, yearns to go dancing again. But as long as the corona clamp down continues, she simply dances alone in the barn. While her Angeln cattle look on with what might be some bewilderment. As long as Agnes Greggersen is having some fun, it can’t be that bad. «



Devoted to farming: this agri blogger loves to write about her profession.



**PREMOS**

# **SUSTAINABLE ECONOMY**







## **Pressing straw into pellets has its price – but also offers a clear added value. At any rate this is how farmer Bernd Pommerehne and agricultural contractor Alexander Marquardt view the process. We visit them at work in Mecklenburg-Vorpommern.**

**A** sonorous droning welcomes us on the Bioenergie Lüchow site in Altkalen in the northern German state of Mecklenburg-Vorpommern. In a straw store, a Fendt 1050 rocks steadily at constant revs with its pto powering a Premos 5000 mobile pelleter from Krone. This time the machine is stationary, pelleting in the barn instead of out on the field. A telescopic loader positions big square bales of straw on a side-mounted conveyor belt. The bale twine is automatically cut and rolled up. Slowly, the bales edge along the belt. First, the straw is shaken and loosened before being drawn into the pelleter. At the other end, finished pellets rain steadily into the hopper. Every now and again, a wheeled loader shovels-up around 2 m<sup>3</sup> of pellets and piles them at the rear of the store.

The resultant heap soon becomes an impressive one. After all, the Premos processes eight to nine 400 kg bales per hour, a throughput of around 3.5 t – a respectable performance, reckons Alexander Marquardt. He's an agricultural contractor from Warsow, near the state capital city Schwerin. From his home base, one of his 30-strong staff yesterday drove tractor and pelleter almost 130 km to this customer's site for an early start this morning. Originally planned was processing of around 40 t straw. But customer Bernd Pommerehne, manager of Bioenergie Lüchow, spontaneously decided to process even more straw and to keep the pelleter on-site for two days. "I see a number of advantages for our business in pelleting straw and am therefore interested in trying it out. Everything has gone so well today that I've managed to keep it a little longer, which also helps to make the exercise more worthwhile", he reasons.

### **A NATURAL CYCLE**

What advantages does Bernd Pommerehne see? First of all, a closer look at his business helps. Bioenergie Lüchow is actually a business group. One part of the group is the

biogas plant. This enterprise is a limited liability company producing 1.5 MW power. Bernd Pommerehne and his brothers Carsten and Harald also run a farm together with some 750 ha and an 800 sow and 2000 feeder pig production unit. Aquaculture is another enterprise and the production in this case features African catfish or clarias.

Heat from the biogas plant is used as much as possible in the livestock enterprises and a substantial proportion of the electricity produced is fed into the farm network. "Our annual consumption is around 800,000 kWh", explains Bernd Pommerehne. This symbiotic system reflects his business philosophy to a certain extent. But there's more. "It is certainly very important for us to achieve as much sustainability as we can. First of all on economic grounds. But also because this approach represents our understanding of agriculture and environmental protection. We think this is what society increasingly wants. And our aim is to fulfil such expectations in real life." In this way, the waste from cleaning the catfish is processed on the spot into an officially certified feed and this in turn serves as a protein source in the pig units. Manure from the pigs is cycled into biogas production, joining other substrates. Other fermentation inputs currently include a silage of sugar beet and straw. Bought-in dried poultry manure is also used, as is straw from the farm's own fields. The next stage in the cycle? The residue from biogas fermentation goes onto the fields as nutrition for the next crop.

### **LESS STORAGE NEEDS**

But how do the straw pellets fit into this policy? The farmer sees a possibility for use in pig feeding: a crude fibre source in rations, for instance, supplementing the wheat bran used up until now. But the pellets could also be useful as "play material" for the animals, to keep them occupied and perhaps less aggressive. A useful and, for him, important





Farmer Bernd Pommerehne sees in straw pellets a valuable product that could be used in pig production and biogas plants.



In stationary operation, the Premos processed during this working day eight to nine big square bales per hour.

side-effect: pelleting brings the temperature of the material up to around 80°C and therefore helps to sterilise it to a certain extent. However, Bernd Pommerehne expects the main use to be as a substrate in biogas production. Pelleting appears to be a much simpler way of handling straw compared with customary baling. “As a matter of fact, we already chop our straw in the baling process, but the logistics involved in baling are still challenging. With pelleting, things should be more straightforward”, he hopes.

Advantage two, as he sees it, is in mixing the straw with dried poultry manure. The manure has a high N content and the straw-manure mix gives a material with a useful C:N ratio and a very positive effect on soil fertility and humus creation. According to the requirements of the latest German renewable energy act (EEG), he aims to reduce his proportion of “arable substrate” in soils. Above all, this means maize is unwanted in the rotation, whereas sugar beet remains a useful component. As straw requirement for the biogas plant, he reckons currently with around 5 t daily.

Another plus point for straw pellets? Well, they don’t take up nearly as much space as bales. “This naturally depends on being able to process as much straw as possible into pellets during the harvest itself”, he emphasises. “I’m sure we’ll still have to bale straw as well. In fact, square baling will remain the main straw handling process, with stationary pelleting

afterwards because in end effect, everything depends on achieving best-possible straw quality.” On the other hand, there are the costs involved in converting bales to pellets to be considered. And these shouldn’t be underestimated. “After all, we’ve got the expense of baling and carting home and then the final pelleting. But my calculations so far indicate pellets could work-out for our farming business. That’s why this year we really wanted to try it out.”

In such calculations, there’s a further option to ponder over: the sale of CO<sub>2</sub> certificates. He estimates this would bring still better economic efficiency involving straw use. But first of all, testing the precise framework conditions for this certification will be crucial. What, for instance, will be the definition of a sustainable humus development? How can this be best confirmed? And there’s the question of what might happen if, in the distant future, perhaps a negative humus balance might develop? “However, even leaving the CO<sub>2</sub> theme aside, I see in straw pellets an interesting solution for our business. My brothers and I are already excited over the results of our test phase this year”, concludes Bernd Pommerehne.

## SECURING ADDED VALUE

Alexander Marquardt also recognises the diverse possibilities offered by straw pellets. This is why he decided back in 2018 to put a Premos 5000 pelleter to work, although





Agricultural contractor Alexander Marquardt would like to expand the pellet production. But marketing concepts have still to be discussed.



From the bunker into the loader shovel: processing straw into pellets substantially reduces the amount of storage space required.

initially only as a mobile on-field operation because at that time there was no big bale loading system available for stationary operations. “This unfortunately meant we were only able to process around 700 t straw which was definitely way below the cost-efficiency threshold”, reports the agricultural contractor. But now that the bale loading system is up and running, the machine is ready to pay for its keep much more efficiently – if there’s sufficient customer demand. Currently, this demand appears to be somewhat lukewarm in Mecklenburg-Vorpommern.

One reason for the tepid reception is the regional cost of straw, boosted by relatively large “exports” in direction of Schleswig-Holstein and Denmark. There’s also the fact that the density of pig feeding farms in the northeast is not so great as further west. “The feeding units that use straw are also more equipped for bale handling.” Opportunities for selling straw pellets as heating fuel are modest because of aggressive pricing of the same material from neighbouring Poland. Appearing much more promising to Alexander Marquardt is tentatively emerging interest from the biogas sector, such as that shown by Bioenergie Lüchow, although he advises caution here because such curiosity is by no means widespread yet.

Another sector, and one Alexander Marquardt feels should not be ignored, comprises equestrian customers from

the wealthier communities around population centres. “But I cannot attract these sorts of customers by chance connections, or through offering a few big bags full of pellets as, so to speak, test samples. The input needed here is something I have undoubtedly underestimated. Much more appropriate for stimulating a market here is targeted analysis of market potential and, above all, systematic customer service – in other words investing in a member of staff spending most of the working day concerned with this sector”, he reflects.

He can also easily imagine interregional cooperation for marketing the pellets – although this would depend on enough profit staying with the service provider. This is why in Alexander Marquardt’s view the most sensible approach is where the contractor is not simply just a pellet supplier but also offers additional services as part of the marketing effort, whatever these might be. “Such complete solutions are more akin to my personal business philosophy, because they provide the necessary amount of added-value to make my investment in the machinery worthwhile.”

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# THE BRANCH BENCHMARK



On August 1, Wolfgang Jung (I) officially hands over his responsibilities as managing director, service & parts to Heiner Brüning.



## Every machinery make is only as good as the service it gives. In this sense, Krone service & parts managing director Wolfgang Jung and his team have established quality milestones since 2007. On August 1, Wolfgang Jung hands over to Heiner Brüning. Clear aim: Remaining the best there is while offering “Service 4.0”.

**XtraBlatt:** Wolfgang Jung, 15 years ago you took over management of the then newly created department customer service & spare parts. In 2007 this department achieved a turnover of 23 m €, the latest annual sum is now 114 m €. How has this been done?

**Wolfgang Jung:** The answer is very clear: this success is through the outstanding commitment of the entire team. And just as much through tremendous input from our dealership partners. Because it's especially these firms that ensure our vital connection with the market. Without the dealerships, the above development would not have been possible, and certainly not with such sustainability!

**XtraBlatt:** An answer that overlooks your own contribution ...

**Jung:** Because a good result always comes from everyone involved and not from individuals. Here, I like to take an example from football: the trainer plans development and lays down the framework conditions and parts of the strategy. However, it's the team that plays and grabs the goals. But to return to your question: turnover growth in the spare parts department is basically to be seen in the light of the whole company development. The new machinery business has expanded from 2007 to now by over 100% – and pulled-up the spare parts sales income along with it. Parallel to this, we have integrated the business with “con-

sumables”, i.e. inputs such as nets, plastic film and twines and developed it further. But that is only a part of the explanation. When I took over responsibility for service & parts in 2007, among my first core tasks were rearrangement of the structures and processes involved. The necessity for this action had been quickly revealed through numerous discussions with dealers as well as importers in our export markets. The very rapid growth of our company around the turn of the millennium had brought the existing processes right to their capacity limits. The expansion of the self-propelled machinery sector brought further challenges.

### “NOWADAYS I SEE KRONE AS BENCHMARK FOR SERVICE IN THE ENTIRE BRANCH.”

WOLFGANG JUNG,  
MANAGING DIRECTOR SERVICE & PARTS



Here too, there was a need for action – and this at very different points.

**XtraBlatt:** For example?

**Jung:** Included then was the lack of available space. This was solved by the extension of existing facilities and new building of storage capacity. Another substantial challenge was the need for more documentation and training facilities, the expansion of which we systematically drove onwards, culminating in the symbolic highlight of the opening eight years ago of the new Training Center. Not to forget also, was the work on a concept for branding and marketing of spare parts and wear parts, the quality offensive with parts, and the taking under our own management of the service licences for engines and transmissions. In this respect, until 2008 we were dependent on the customer service structures of the engine manufacturers and these did not match the market requirements of farm machinery customers. If, on a Friday at 4 pm a forage harvester fell out of action because of a serious breakdown, and the supplier reacted by saying that no customer service personnel would be coming before Monday, trouble is pre-programmed. This is why we've built-up our own competences to resolve such situations.

And not least among the milestones marking these last 15 years is the redesign of the Krone guarantee system – a thematic equally important to dealership and end-customer and also closely associated with the service structure.

That we have planned the ways ahead correctly for our development is shown by, among other things, the outstanding satisfaction reported through surveys by the German dealership organisation LBT, but equally by the performance of the Krone name in the DLG “Image Barometer”. Service and spare parts are central success factors in agricultural engineering. In all modesty, I can say that nowadays I see Krone as benchmark for service in the entire branch, beating all competitors. All this has added to the attractiveness of the brand and so to



**1** Always efficient spare parts logistics: the turnover of Krone service & parts has multiplied by five since 2007.

**2** To the milestones achieved over the last 15 years belong the massive expansion of storage capacity.

*positive development – in the department service & spare parts, too. At the danger of repeating myself, it fills me with pride that since 2007 our team has so successfully dealt with such challenge and laid the foundations for today's success. Yet another highlight of this period is the freedom in planning given to us by the owner family, so that we have the opportunity to "think anew" about solutions.*

**XtraBlatt:** Hereby, probably your experience in the construction machinery sector also proved useful?

**Jung:** That's true, but in a different way to what you probably mean. With full-service concepts, maintenance contracts, guarantee extensions and leasing concepts, the construction machinery sector was years ahead of the "green branch" and, in-part, remains so. However, nothing would be more fatal than the transference of concepts 1:1 from one market to another. Regarding the actual engineering, construction and farm machinery share many similarities. However, the working situations, the job specification profiles, workloads and the emotionality involved are all much greater factors in agriculture. Service



solutions and service products must crucially take this into consideration. For this reason, we founded a new department many years ago called "business development", managed by Heiner Brüning and assigned to the service department.

**XtraBlatt:** With which tasks?

**Heiner Brüning:** One of the focusses lies in the development of digital products. After all, digitalisation is no end in itself, no occupational therapy for egoistic nerds. Instead, digitalisation is all about offering customers

alternative and new solutions that allows them to work their machines more efficiently and therefore cost-effectively. An important component of this concept is mykrone.green as customer portal through which we offer dealerships and end customers digital services. An example of such "e-solutions" is the reservation of additional engine power with forage harvesters for a fixed period of time.

**XtraBlatt:** What is the acceptance here? Experience shows that the psychological barrier hindering actual utilisation of this type of offer is high ...

**Brüning:** In this respect we see ourselves as progressing well because the acceptance of mykrone.green is good. Clearly, initial scepticism existed and undoubtedly still remains with many customers. All the more important, therefore, is ensuring two points: one, ease of operation and two, the financial advantages being immediately identifiable, in our case for dealership and customer equally. Just how important the theme ease of operation is well demonstrated by examples including Apple, eBay, Amazon or Uber. Digitalisation opens the door to many



Gateway to the service future: the customer portal mykrone.green





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new possibilities. It helps achieve clearly defined targets.

*If the acceptance for such a solution is not there, the fault doesn't lie with the customer, but with the product. This is even more important with service offerings than with physical products. Nevertheless, the willingness of someone to become initially interested in the development as a customer can be encouraged through offering an attractive incentive, for instance ten cost-free drum operating hours bookable by a forage harvester customer.*

**Jung:** ... exactly like the online ordering discount of 2% for dealers that we already introduced many years ago as one of the first in the branch and which enormously improved the acceptance of this ordering system. At that time there was also considerable scepticism. But the subsequent success showed we were right.

**Brüning:** And when the experience of this online procedure straight away proves positive – in other words, simple – the ice is then broken. Our experience has shown that it is very important additionally to take the dealer with you on this journey right from the beginning, in a financial sense too. After all, digital solutions in this respect are just like “hardware” such as machinery or spare parts: products with which everyone involved – manufacturer, dealer and first of all naturally the customer – has to earn money. Important is, to create the product in a way that meets the requirements of the identified customer group.

**XtraBlatt:** Thereby sweeping the lens once again back towards the aforementioned tailor-made service contracts ...

**Jung:** Smart service naturally includes special deals in this area. Here, exciting solutions are already in preparation within Krone although, in general, there remains still much to do. What is certain is that with the new business models, sales and service will be still more closely bound together – but also manufacturer, dealers and customers too. This is because service agreements and guarantee extensions contribute greatly towards making more calculable the costs of a machine for the customer. Here, we are back again to the aforementioned parallel

to construction machinery where these aspects have been long relevant. The total costs of ownership are the base measurement for the future, and digitalisation an extremely practical tool to help.

**XtraBlatt:** In these total costs are included used machinery – the title theme of this issue ...

**Brüning:** Here, you touch on an extremely important aspect. From the customer point of view, the so-called residual value is a factor in a machine's cost efficiency. This is especially true for more complex and higher value machinery. The residual value increases through documented service of a high niveau, as is possible under guarantee extension plus appropriate servicing agreements. And digitalisation also helps here because it permits transparency and allows, from principle, a later buyer of the used machine to have a full view of the service history. And as manufacturer, we have the security, for example for the 2nd lifetime of a machine when offering far-reaching guarantee agreements.

**XtraBlatt:** Which would mean that Krone will be more active in this?

**Jung:** Here lies without doubt a strategic development area. Nevertheless, the aim is always to support our dealers and not to draw more business into our own fold. The better a union of dealer and manufacturer functions, the more positive this is for the customer. For Krone this will remain so in the future too. «

## “DIGITALISATION IS NO END IN ITSELF, INSTEAD IT FULFILLS CLEAR AIMS.”

HEINER BRÜNING,  
MANAGING DIRECTOR SERVICE & PARTS







**SILAGE QUALITY**

**ABOVE ALL  
A1**



**Basis for a respectable return in dairy and beef cattle enterprises is best-possible feed quality. In this respect, grass silage plays a central role – and increasingly in the form of round bales. But does this approach allow top-quality feed? XtraBlatt reviews the possibilities.**

**T**he most common method for ensiling grass in most of western Europe is more than likely the classical clamp after lifting via forage harvester or pick-up wagon. The one “snag” here: diminishing bulk in third or fourth cuts often means there’s little sense in starting a new clamp. And the so-called sandwich silage – two, or even three, cuts layered in the same clamp – is viewed with suspicion by many farmers. This is when, at the very latest, experience shows bale silage is the best choice, mostly in round bale form. But should we really wait so long before going in with the round baler? Maybe these wrapped rolls of silage are an option for the whole season, despite the costs of netting and plastic film and the logistics. And what about silage quality in the bales?

On this last point Christoph Magritz, specialist for round balers with Krone product marketing, has a crystal-clear opinion. “The quality of grass silage doesn’t, in the first instance, rely on the harvesting technique, but instead on the condition of the forage and the way the machinery is applied. Round bale silage has outstanding quality – when the appropriate requirements are fulfilled. And the baled product can even offer advantages over silage chopped by forage harvester or forage wagon – and not only with small amounts in the last cut.”

## **FLEXIBLE HARVESTING**

Among these advantages, he reckons, is that it’s possible with a round baler to ensile grass at the right time in smaller areas, a high degree of flexibility that allows orientation of baling on ideal stage of wilt instead of having to harvest the entire forage crop in a single operation. “After all, individual forage crop areas of a farm are often extremely variable in harvesting time, alone through the different soil types involved. Where it’s possible to cut grass on all fields on a tight schedule, there’s still the wilting to consider – and the rate of moisture loss can be different from field to field. Result: part of the crop is carted in too dry, another portion too wet. In other words, sub-optimal conditions. With the round baler and a field-based harvesting timetable, silage quality can turn out best of all”, emphasises Christoph Magritz. And this applies not just to later cuts, but right through the season.

And then there’s labour input to consider, he continues. One person with a baler-wrapper combination can harvest at just the right time and without the standard fleet of vehicles in the harvesting chain. Yet another advantage is that baling increases transportability of the harvest. This pays off where the fields are smaller and field-to-farm distances longer.

Labour management should also include, in Christoph Magritz’s eyes, consideration of whether it’s more sensible to use a baler-wrapper combination or separate baling and wrapping passes. Should the baler be often used for hay and straw baling too, then baling silage solo could certainly make sense because the work will be quicker. “However, it is important that the bales don’t lie too long in the field and dry-out before wrapping. This would be bad for the quality of the resultant silage. The solution here is to run the wrapper as soon as possible after the baler. So the combo solution brings more security in the end, argues our expert.

## **COMPACTION BONUS**

Also important in ensuring quality baled silage is correct adjustment and operation of the machinery. “In practice, we often see round balers being driven for maximum throughput. This is certainly understandable, especially where the weather is uncooperative. However, with grass silage a crucial recommendation is to throttle down 1–2 kph compared with straw or hay operations to make sure crop





- 1** With mantel film binding and subsequent wrapping the edges of the silage bales are better packed.
- 2** Christoph Magritz is specialist for round balers with Krone product marketing.
- 3** Round bale grass silage is qualitatively and economically a good alternative to clamp silage.

pick-up is perfect for creation of a uniform core which is a good start for best possible bale consolidation. After all, the tractor rolling the silage clamp also drives slower to give better compaction”, points out Christoph Magritz. “On top of this, the greater consolidation packs more material into the bale and, once again, improves crop transportability.”

In his opinion, all types of round baler are in principle suitable for hitting the A1 silage target, i.e. with variable, fixed or semi-variable chamber. But especially for grass silage, the constant and uniform consolidating action of a variable chamber has something of an advantage in that consolidating is taking place even when the bale is small. “When buying a baler, it’s therefore important to bear in mind the machine’s future job profile, e.g. the proportions of straw, hay and silage to be baled. Our VariPack and VariPack Plus models are more at home working in straw and hay. On the other hand, our Fortima, Comprima and Comprima Plus balers represent the preferred silage machines”, says the product specialist.



## SHARP IS SURER

But whatever the chamber-type or make of baler: always crucial for optimal silage quality is the maintenance and adjustment of the machine”, he emphasises. This begins with pick-up positioning. Seen as good is around 6–8 cm between field surface and tine tip. “If the pick-up is set too low, then an excess of soil is raked into the forage, which increases the feed ash content, reducing its digestibility and, in the longer term, negatively influencing animal health”, he explains adding, with a twinkle in his eye although still in serious mode: “In other words, don’t confuse baling with scarifying – for grass crop care there are other implements much better than balers.”

Clearly necessary, he adds, is regular monitoring of the knives – and their sharpening when required. Grass that is cut cleanly in short lengths consolidates better for more efficient ensiling and better feed intake by livestock. “On





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top of this, sharp knives are worth it alone on cost grounds: the blunter the metal, the higher the diesel consumption. This can work out expensive. For this reason, regular resharpening and replacement when required represents time well-invested – and is always profitable”, stresses Christoph Magritz.

## CAREFUL COSTING

Profitability comes up for consideration often with round bale silage. The common belief is that silage in the round bale is more expensive to produce when assessed per tonne of feed. The main reasons here being the inputs: materials for binding the bales and for wrapping them. “We can’t argue about this. Variable costs incurred in making clamp silage with silage harvester chain or forage wagons are lower”, agrees the product specialist. “On the other hand, the bill is completely different where a farmer might be forced to stop using his old silage clamp and renovate, or even rebuilt, to conform with environmental protection regulations, a very expensive option and one not financially supportable for some farms. In such a case, round bale silage in full cost accounting terms would be almost at the same level – and scores points in such a situation through the already discussed advantages of silage quality. Test results from the official advisory services have confirmed this, as have trials by independent farming magazines. A decision on forage harvesting and ensiling procedure always depends, therefore, on the individual farm business situation.”

What cannot be ignored with bale silage is the environmental factor of net and plastic film disposal, even although there exist widespread and effective collection and recycling systems nowadays, such as the ERDE initiative in Germany. Such programmes nowadays mean that bale silage is not per se actively threatening the environment. “And for those who find it too troublesome to separate nets and film, they can change to so-called mantel film, a stretch plastic binding that replaces netting so there’s only film to dispose of and which, anyway, is easier to recycle”, points out Christoph Magritz.

Here too, he hears from farmers repeatedly that the mantel film solution is more expensive than the classical application of net and film. In the purchase of a baler which has to be prepared for bale binding with film, this is to a certain extent true. It is also incontestable that the price for the mantel film is slightly higher. “However, we hear from farms that a number of customers in some cases are reducing the layers of film applied from eight to six in some cases where mantel film is used. Despite this, the bales bound in this way are still better packed, especially at the edges, compared with the combination of net and film. And we calculate that this improved packing makes this approach more cost effective and therefore a little cheaper”, assures Christoph Magritz. Summarising bale silage versus clamp silage he says: “The former can be an economically attractive alternative and much more than just a stopgap method for conserving the last cut. In fact, when done correctly round baling enables production of A1 silage.”

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**25 YEARS BIG M**

# MOWER POWER

It caused gasps of amazement when launched in 1996 and developed into a real success story for Krone: the high-performance mower conditioner BiG M. It proved a “runner” in the market, and this motivated Krone to later start production of forage harvesters.





fire. After the fire was extinguished, the damage was provisionally repaired so that by the afternoon the BiG M could be presented as planned. “We still weren’t able to demonstrate all the functions, but luckily no one noticed that day”, remembers Dr Horstmann.

## 1,000 MACHINES SOLD BY 2008

The 9.10 m working width of the BiG M attracted plenty of attention and discussion. And it wasn’t long before the self-propelled mower established itself. In fact, it was accepted in everyday farming with astounding rapidity. “Agricultural contractors with a BiG M out on trial were enthusiastic right from the start by the work rate of the machine and by the official permitted 40 kph road speed”, says the chief constructor. This work capacity was permanently documented in 1999 during a 24-hour test. 315.1 ha of mowed grassland and a timed hour record of 15.2 ha were the results, both earning an entry in the “Guinness Book of Records” and convincing the few remaining sceptics.

In 2001 Krone then presented the modified BiG M II; with this machine, not only was the working width increased to 9.7 m, the drive train was redesigned too. Thanks to the automotive drive system, by which engine rpm automatically adjusts to match driving speed, fuel consumption was markedly reduced compared with the first BiG M model series. In May 2003, Krone reported sales of 500 examples.

At Agritechnica 2007 the manufacturer presented a future-oriented concept study of the high capacity mower – the 510 HP BiG M 500 with a working width of 13.20 m. “Looking back, there is no doubt we were a little ahead of our time with this. However, the concept demonstrated how the technical future would develop”, analysed Dr Horstmann. The proven BiG M with 9.7 m working width continued to enjoy great

popularity and by October 2008 the 1000th machine had rolled off the assembly belt.

## MORE VERSATILE THAN EVER

One year later Krone premiered the BiG M 400. Special features of this model series were the 400 HP engine, the low rpm concept, and the new heavy duty cutter-bar including SafeCut blade protection. With the BiG M 420, followed in 2011 the fourth generation BiG M with new design touches and still more ease of operation. The flexibility of the large-scale mower was continuously improved. Thus, it was able in the meantime to handle all mowing tasks: as high-performance conditioner CV or roller conditioner CR – or alternatively with wide distribution of cut grass or with swath merging system.

In 2017 Krone showed for the first time the fifth generation – the BiG M 450. Special features here were the stepless drive transmission, the new mower concept including full-hydraulic adjustment of mower suspension pressure from the cab for all three mower units and the 449 HP Liebherr engine with its attractive 1,000-hour service interval. And last but not least, the vehicle is available since 2020 as version BiG M 450 CR with roller conditioner. This offers outstanding performance working in leguminous crops (including lucerne), for example.

According to orders filed up to the end of the business year on July 31, 2011 it looks like BiG M number 3,545 will roll out of the assembly hall by then. “This is genuine proof of success for this self-propelled mower conditioner that has asserted itself in the market with unchanged popularity, even although the HP output of tractors and the working widths of triple combinations continue to increase. One thing is certain: without the success of the BiG M, Krone probably would not have risked entering the forage harvester sector”, sums up Dr Horstmann. «

**F**or Dr Josef Horstmann, research & development manager with Maschin-fabrik Krone, May 20, 1996 turned out definitely one of the most stressful days in his entire career. This was the Monday when Krone presented for the first time its prototype of the “self-propelled high-performance mower conditioner” BiG M. On the morning of the premiere, with invited representatives of the press and Krone importers from all over the world, the giant mower was to be run quickly through the washing plant. On the way there, the drama erupted: the wiring harness caught



We connect

# FIELD & TECHNOLOGY



KRONE has been inextricably rooted in agriculture since 1906.  
We relate to the people who farm their land following the rhythms of nature.  
We do the mowing, swathing, chopping and baling.  
We connect field and technology. Together, we make the most of your crop.

**#KRONECTED**