

XtraBlatt

SPAIN

Dairy cow husbandry in Cantabria

TECHNOLOGY TRENDS

A look into the future for farm mechanisation



GRASSLAND CARE

Guarantee for peak yields of forage and milk



On its 20th birthday this spring, Cham Forage Harvesting Association in the Bavarian Oberpfalz took delivery of its 20th BiG M, making the association among the world's largest buyers of these Krone self-propelled mowers. As part of the celebrations the birthday machine, and a silage harvester delivered at the same time, received an official blessing from the Church.



DEAR READER,

You now have in front of you the new issue of Krone XtraBlatt. Over the past weeks our editors have once more travelled widely, researching and writing interesting and entertaining reports for you. Hereby, the chosen title theme of feed naturally plays a significant role for us. As leading manufacturer of forage harvesting machinery, we are particularly interested in this central component of dairy animal production.

But, as we've learnt meantime in numerous discussions with veterinary experts, there are numerous other different aspects of dairy cattle production that are at least just as important as feed in milk production and animal health. For instance, timely offering of colostrum, keeping the calving procedure as natural as possible without mechanical aids, or stress-free drying off management. These are just three of many themes having sustainable influence on animal health and therefore milking performance. They are points where farmers are expected to optimise all herd management parameters to ensure their four-legged "colleagues" remain fit and healthy for optimum milk output.

With the above discussions in mind, it occurred to me that we also put our production processes regularly on the test stand and, with the help of external specialists, identify weak points and optimise procedures. Perhaps

for you, too, it's well worth considering sitting down with your own farm vet and frankly analysing production procedures and how to further optimise them when required. Our own experience shows that the costs of such advice are normally repaid many times over.

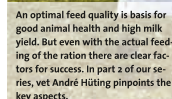
For the ongoing 2018 forage season, I wish you and your family good health and great success.

With best regards from Emsland.

Yours sincerely,


Bernard Krone

CORRECT FEEDING

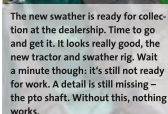


GRASSLAND MANAGEMENT

INTENSIVE GROOMING!

Farmers pull out all the stops to get optimum yields through best possible crop husbandry. However, permanent pasture has “aye been with us” and is often still treated as second class crop. But if a good harvest is the aim, then this crop must be well treated too, says grassland expert Heinz-Günter Gerighausen.

INTENSIVE CARE

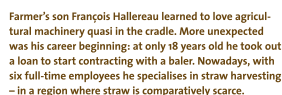


CHECKED ALL-ROUND

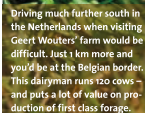


information, automated and digitized in front the previous work (1). The baler is identified via machine numbers and, based on the information the production system "Krone-Accom" stores the stand and the machine step-by-step through the commissioning and testing stages. All data is stored along the machine number so that assessment and commissioning of every round is competitively documented in digital form. If required, customer service technicians and technical specialists use the machine number g_i .

GROWING UP WITH STRAW



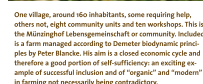
CARTING QUALITY FROM THE FIELD



IT'S BETTER TOGETHER



THE CYCLE OF LIFE



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MASCHINENRING SOLTAU-WALSRODE

A RING WITH NO WORKSHOP



The Soltau-Walsrode Machinery Ring owns two Krone BIG X harvesters working only in maize. But this ring has no backup workshop of its own. How does it manage? Director Dirk Fahlbusch explains.

The Soltau-Walsrode Machinery Ring is based very near the 17,000-hectare edge of Lüssow forest in north-east Germany. The ring was formed by the 17 local farmers who, in 1997, decided to pool their resources and create a joint venture. The ring's success is based on the fact that the members have a common goal: to produce high-quality maize for silage. The ring's success is based on the fact that the members have a common goal: to produce high-quality maize for silage.

Machinery ring Soltau-Walsrode succeeds without its own workshop

LANDTECHNIK MILER (SLO)

BETTER WITHOUT TRACTORS



Branko Miler from Ravne na Koroškem in northern Slovenia has specialised on supplying farm and forestry machinery since he and wife Natalija founded their company 18 years ago. But they have a principle of selling no tractors – an unusual, but successful, concept.

Slovenia: Krone importer Miler is machinery specialist

BANNSTEINHOF

BIO – LOGICAL



For generations, the family Ruf has farmed Bannsteinhof where a changeover to organic production occurred just a few years ago. Marco Ruf explains how the family has managed to maintain a herd of contented animals in a system based on the natural ecological cycle backed by production of best possible forage.

Bannsteinhof: Success with Glan-rinder

SPAIN

THE SPANISH ALLGÄU

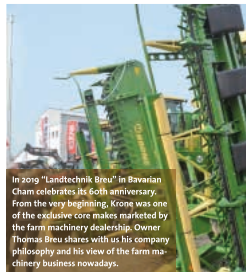


Rolling verdant hills, dense grass and leafy lucerne...is all this possible under Spain's hot sun? Yes! This can be found in northern Spain – where the milk comes from. But how much milk, and how long the supply will continue, depend on the price and particularly the rain.

Dairy farming region of North Spain

LANDTECHNIK BREU

SUCCEEDING TOGETHER

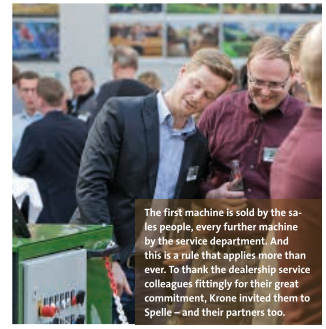


In 2019 "Landtechnik Breu" in Bavarian Cham celebrates its 60th anniversary. From the very beginning, Krone was one of the exclusive core makes marketed by the farm machinery dealership. Owner Thomas Breu shares with us his company philosophy and his view of the farm machinery business nowadays.

Landtechnik Breu and Krone: Partners for almost 60 years

SERVICE & PARTS MEETING 2018

WITH HEART AND UNDERSTANDING



The first machine is sold by the sales people, every further machine by the service department. And this is a rule that applies more than ever. To thank the dealership service colleagues fittingly for their great commitment, Krone invited them to Spelle – and their partners too.

Service and Parts Conference 2018 in Spelle

Agricultural technology 2025

LOOK INTO THE FUTURE

Since 1997 Dr Gottfried Eikel is deputy chief editor of the specialist farm machinery magazine "profi" and is numbered among the most renowned experts in the agricultural machinery scene. We would like to learn about this man's assessment over future developments in this respect. Will machinery become ever-larger? Or might there be conflicting trends?



What are the technology trends of the future? Interview with "profi" deputy editor Dr Gottfried Eikel

NEWS-TICKER

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GRASSLAND MANAGEMENT

INTENSIVE GROOMING!



Farmers pull out all the stops to get optimum yields through best possible crop husbandry. However, permanent pasture has “aye been with us” and is often still treated as second class crop. But if a good harvest is the aim, then this crop must be well treated too, says grassland expert Heinz-Günter Gerighausen.

When farmers and contractors discuss best possible forage quality, the themes often concentrate on ideal cutting time, mower adjustments, length of wilting period or chop length with silage harvester or forage wagon. But what role here has grassland husbandry? We discuss this with Heinz-Günter Gerighausen. He lectures at the College of Agriculture in Kleve, North Rhine-Westphalia, instructing future agricultural contractor managers and is one of the best-respected grassland experts in Germany.

XtraBlatt: Heinz-Günter Gerighausen, does grassland get the respect it deserves in farming practice?

Gerighausen: *The only answer to this direct question is “No”! Unfortunately, many farmers still do not realise the value that their grassland has. Out on the fields, they put a lot of effort into really optimising their crop management. But when it comes to grass, I get the impression this is nothing more than a “Cinderella” crop. In other words, “aye with us” and therefore hardly noticed. But we must realise that grass is really more than a boring presence in the forage ration. In fact, it is a central component with outstanding performance potential. However, this can only be fully exploited when one dedicates fullest attention to the crop and pulls out all stops to get the best from it. But what happens instead? Grassland unfortunately serves us as a dumping ground for slurry manure because the common belief is that pasture can be driven-on earlier than arable fields. This is fatal because, on grassland too, the damaging results of tracking have long lasting negative effects! This is why here on our Haus Riswick college farm we have consistently applied the umbilical slurry spreading system for four years now in order to help these scars recover – with the best of results!*

XtraBlatt: From your point of view, what does “pulling out all the stops” really mean?

Gerighausen: *This begins as early as precise evaluation of the respective areas, a procedure that, in my experience, occurs very seldom, if at all. I get this impression, for instance, from discussions with students here at Haus Riswick. Where a real evaluation takes place, it can be very rapidly determined that 50% of the crop, or sometimes even more, com-*



prises undesirable grasses and dicotyledons. Just think of it: Fifty percent! Unthinkable in an arable crop. In grassland, more or less normal. Why in earth is cash invested in the crop in such a situation? Like other crops, economic viability for grass lies in best possible growth. This is the basis of success in cattle feeding.

XtraBlatt: How has this situation occurred?

Gerighausen: *Over the past ten years, dairy cattle stocking has expanded enormously and outdoor grazing become increasingly seldom. Grazing ruminants, whether cattle or sheep, rip-out a proportion of the undesirable plants and consolidate the sward with their hooves. On fields that are only mown, the grass sole rises over the years just like yeast does in bread. Gaps appear in the sward and, because there's no grazing, the undesirable plants spread out, the sward changes massively in a negative way. So what's the solution? We must achieve mechanically what was achieved in the past by grazing.*

XtraBlatt: What do we need here?

Gerighausen: *Basically, the same procedure as with garden lawns: scarifying or, as I always tend to say, intensive grooming to get a thorough dethatching with dead vegetation and unwanted dicotyledons ripped-out, as well as the less productive grasses such as rough meadow grass, Yorkshire fog or soft brome. And let's never forget that tillering and spread of useful feed grasses is enormously encouraged in this way. After all, the sward target is between 8,000 and 10,000 shoots per square meter.*

XtraBlatt: And that should do the trick?

Gerighausen: *Naturally, scarifying is not enough on its own. But we've carried out several trials with different techniques, in various intensities. We've compared the results with non-treatment. And these trials have demonstrated that, between scarifying in March and evaluating results in June, enormous differences are achieved: results that surprise even experienced farmers! In other words: through regular intensive scarifying alone, grass swards recover rapidly.*

XtraBlatt: What about the roles of levelling, rolling and reseeding?

Gerighausen (laughing): *That almost sounds like "Washing, layering and blow drying...." But, in all seriousness: You are completely correct. Drag-levelling the pasture surface to flatten out molehills is important – and doesn't take place everywhere. Rolling and reseeding are also very good measures and important – but not when carried out automatically after every scarifying. For instance, immediate rolling reconsolidates loosened surfaces and presses back the torn-out plant material so that it could root again. Therefore, first scarifying and then reseeding. Then allow time for the scarified material to dry out, then roll.*

For a number of years now we have observed, at least here with us, increasing incidence of spring drought. In such a situation, reseeding won't help much. My recommendation is therefore to scarify first in early March and not be afraid to set the tines aggressively, even if there's a danger of "blackening" the sward. This doesn't matter. On the contrary, the sward then comes strongly through and growth really gets going. Then a second scarifying in late summer. And only then, depending on sward condition, sowing between



3

- 1 Grassland expert and tutor Heinz-Günter Gerighausen: “In my view there is no other production procedure that with grassland gives such good results from so little input.”
- 2 Levelling and scarifying grassland is the first husbandry input in spring.
- 3 Full cost calculations for levelling, scarifying, reseeding and rolling total only around 45 Euro/ha. The yield effect, however, repays this input many times over.

5 – 10 kg grass/ha. In my experience, the rest can be left to rainfall. The young grass has then sufficient time to literally establish its footing before winter.

XtraBlatt: What about fertiliser application?

Gerighausen: Even when it sounds just like a text book, this should fit the site and expected uptake. This always applies. Yet, all too often in practice, the advice is still ignored. Again, we should remember my opening comments on pasture as dumping ground for slurry. On such land, enough phosphorus and potash can be expected. Usually, this is not the problem. With nitrogen, I recommend 20 – 25 kg N/t dry matter.

XtraBlatt: And what about lime?

Gerighausen: Here we address the next sore point in practice. Even arable cropping fields are in many cases limed too seldom. However, with grassland this neglect is sometimes dramatic. If the pH is not right, then the influence of all the other husbandry measures mentioned is markedly limited. Therefore, with grassland too, it is crucial to first of all take soil samples and thus determine the actual condition. And this means before cash is invested in any other action. After that, it's plain that fertiliser application is not really the greatest cost factor, quite the opposite in fact.

XtraBlatt: Keyword cost: Is this the main reason why farmers do not always devote the required care to pastures?

Gerighausen: People who blame lack of action on cost are only kidding themselves! If I set up a full cost calculation,

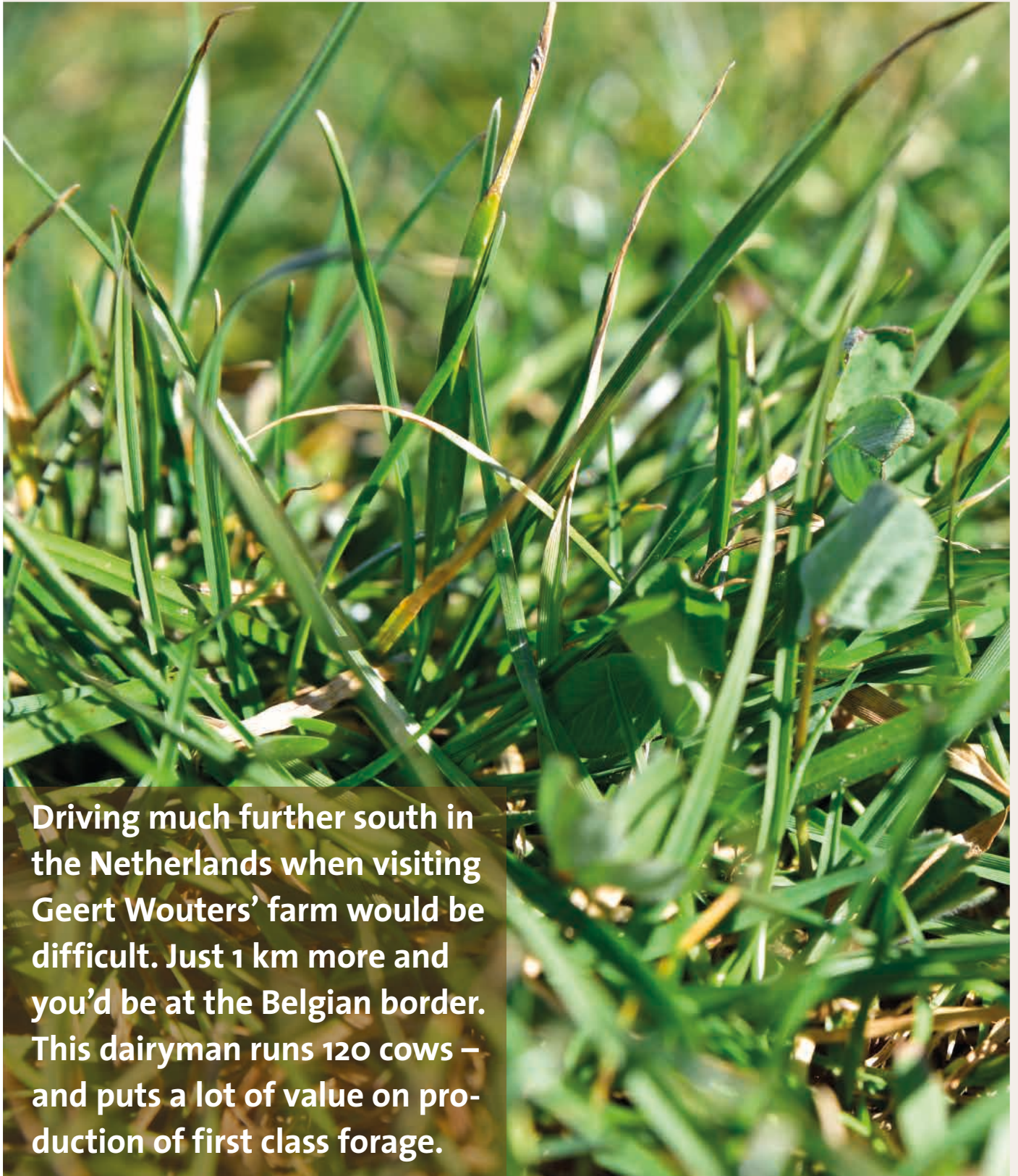
i.e. with labour costs for levelling, scarifying and rolling, this works out at only 45 Euro/ha and year. So, cost cannot be a reason for neglect. And it is also fatal to simply buy the cheapest scarifying harrow. The design of this implement is just as important as the mower, turner and swather. For a 16 m working width forage turner that isn't even working 30 hours a season, farmers shell out up to 35,000 Euro without even batting an eyelid. But a scarifying harrow with re-seeding attachment isn't even considered. That's unrealistic. What other implements can give such a beneficial effect? There's not really an argument here. To return to costs: if grassland is correctly cared for, the costs involved mean a required increase in yield of around 300 to 350 kg DM/ha, or about 1 t silage. The real yield increase involved is many times more. In my view, there is no other production procedure with grassland that gives such good results from so little input, and releases such great reserves.

XtraBlatt: Do you see Dutch farmers setting good examples in grassland husbandry?

Gerighausen: Yes and no. Yes, in terms of systematic and regular sampling and evaluation and follow-through with required actions. Here, Germany's western neighbours are absolutely professional and European leaders. However, I do not regard the practice of breaking-up of grassland every five or six years as necessary. This happens often there. After all, farmland is an even more scarce commodity there than it is with us, especially pastureland. Highest husbandry care is very important, however. Then the yields come automatically! «

FARMER GEERT WOUTERS, ALPHEN (NL)

CARTING QUALITY



Driving much further south in the Netherlands when visiting Geert Wouters' farm would be difficult. Just 1 km more and you'd be at the Belgian border. This dairyman runs 120 cows – and puts a lot of value on production of first class forage.

FROM THE FIELD

With his father, Geert Wouters manages a dairy farm in the deep south of the Netherlands.

Venlo marks the border crossing into the Netherlands. Then we steer due west until Eindhoven, from where it's only around 25 km to Alphen. The normally densely populated Netherlands has rather fewer settlements in this region. Single steadings nestle alone between expansive grasslands. One of these farms belongs to Geert Wouters, who welcomes us warmly at the farmhouse door, immediately inviting us to “koffie en koekjes” in the kitchen.

HIGH INTENSITY

“We have less farmland area compared with our colleagues in other European countries. This encourages us to manage what we have as optimally as possible and harvest as much as we can from every hectare”, emphasises the farmer right at the beginning of our discussion. He does pretty well in this direction himself with a current herd average yield of 10,500 l milk, a large proportion of which comes from forage. Intensive grassland husbandry is standard procedure for Dutch farmers. “Here, we have to feed 120 milkers and 100 followers with grass silage from 30 ha with another 9 ha down to forage maize, fodder beet on 3.5 ha and 4 ha of hemp, all of which is chopped and rolled into the clamps. The latter components are aimed at increasing structure in



our feed rations. More farmland area is simply not available for us.” Bought-in is only the required concentrate feed – soya and rapeseed meal – and around 25 t of straw each year for feeding and bedding.

The region's soil is sandy with annual precipitation averaging 850 mm although in high summer things can get very dry and irrigation has to be turned on for some of the grassland. Geert Wouters says there's growing economic pressure from potato growers in the area. “They are increasingly competitors for land. While we have the advantage of owning our land, it now sells for 75,000 Euro/ha here with the price inflated by demand from potato growers.” So far, there's no restriction to ploughing-up pastureland for arable output here. But this farmer reckons on future limitations, as in neighbouring Germany. “I find that this would be good. In areas where the potato sector moves on, it leaves behind depleted soils in real need of reconditioning.”

MORE THAN SLURRY

42 ha of the farm's land is in a block around the steading with the rest not more than 2 km away. This structure naturally saves money, the distances between fields being quite short: preferential in spring, for instance, for slurry distribution per contractor umbilical system. “In the Netherlands we can start bringing out slurry from February 15 and this almost always works with the umbilical system because it's less dependent on weather. The soil is hardly under any pressure, the main vehicle in the system being fitted with Terra tyres. As a rule, we apply 30 m³ slurry/ha on our grassland.” There then follows a 38% N and 19% S mineral fertiliser dressing with added nitrification inhibitor. Two thirds of this dressing goes on mid-March, the rest in the beginning of April.

Depending on plant growth and slurry silo levels, another dung application



(20 m³/h) can be made after the second silage cut. However, this doesn't work every year because Geert Wouters is required to get rid of 2,000 m³ slurry every year. "We have to pay for this amount to be transported off the farm because the land we have is not enough for the size of herd." His strategy: "I offer the slurry each year before maize sowing, because at this time there's demand for organic nutrients and I therefore have to pay less than, for example, in autumn when slurry can no longer be spread and accordingly has to be stored through the winter."

OWN OPERATION

Mowing, turning and swathing are handled by the farmer. "I want to have the decision on when to mow, and not be dependent on the contractor. Hereby I pay less attention to grass height, and more on the weather situation. Tendentially, I like to cut earlier when I see a harvesting

weather window coming up. With my 6 m mower conditioner I've got the capacity I need for a farm this size. I turn the grass once to speed wilting even more." Geert Wouters also likes to keep the swathing under his own direction because here, he finds crucial mistakes can be made in set-up, leading to big problems in feed quality. "When the contractor then arrives with 650 HP harvester, two to three wagons and a 20 t loader for consolidating the clamp, we can get the harvest off the fields within three hours. For covering the clamps, I like to see everything under plastic in 24 hours. This works quite well under our system. We have a timely discussion with our contractor regarding the harvesting date we want. The firm is then here at the right time." This farmer harvests 11 t/ha from a planned 5 cuts a year.



"LASAGNE SILAGE"

Geert Wouters layers his clamps to make what he calls "lasagne silage". The first cut always comes complete into the first clamp. On top of this, he then puts half the second cut with the rest applied as bottom layer in the second clamp. Then the third and subsequent cuts are also split between the clamps.

"With this system we can achieve a fairly uniform forage energy content and quality from the two clamps. Keeping feed energy levels constant is thus easier. We don't have mould problems, even though we have to pull off the plastic sheets for each harvest." He reckons that what's really important is correct and consistent clamp consolidation followed by ensuring



an airtight covering. Also crucial: regular sampling and laboratory analysis.

REESTABLISHMENT

Intensive grass growing demands the appropriate husbandry including regular reestablishment of swards. “Every five years we break the pasture up because we see the sward is no longer optimal in species composition. As a rule, we sow with ryegrass-clover mixes after forage maize. Maize stubble is flailed and – where required – soil limed. Subsequently we grub the surface before our contractor sows with a drill combination.”

In the first year after drilling the sward is rolled. Every spring the grass is then scarified before fertiliser application

and, where needed, herbicide is sprayed three weeks before first cut. “We can do without any reseeding in the sward because we’re renewing it anyway every five years”, adds the farmer. “Our medium-term aim is to increase annual milk yield per cow to 11,000 l which means further management optimisation, especially in grassland husbandry.” «

- 1** Scarifying the sward: an important part of grassland care for Geert Wouters.
- 2** Hemp silage is a speciality here. This improves forage feed structure.
- 3** For the first four cuts Geert Wouters uses a contractor for harvesting.

FARM CONTRACTOR HALLEREAU (F)

GROWING UP WI



Farmer's son François Hallereau learned to love agricultural machinery quasi in the cradle. More unexpected was his career beginning: at only 18 years old he took out a loan to start contracting with a baler. Nowadays, with six full-time employees he specialises in straw harvesting – in a region where straw is comparatively scarce.

TH STRAW



François Hallereau grew up on a farm. In 1981 the farmer's son founded his contracting business in Torfou, southwest from Nantes in the French département Maine et Loire. His machinery sheds are modern and generously laid out. Every machine has its place. "The present firm really includes three businesses: 20 years ago I added another contractor firm that had become insolvent. Recently, I was able to buy another because no heir was forthcoming. Five of my staff come from these firms", says François Hallereau.

150 KM TO JOB LOCATION

"In our region the average farm business has around 50 cows and 50 ha grassland", he explains. Straw is therefore in short supply. Because of this, he decided at 18 years old to buy his first baler. "With that, I baled straw at La Rochelle on the Atlantic coast some 150 km from here. I shipped it back here to sell it. Because I didn't have any money at the time, I took out credit at 23% interest. Despite this, the business

functioned", he proudly recalls. To this day, the Hallereau business has continually developed, describing itself as straw specialist. Tackle includes 12 different balers and baler-wrappers from five manufacturers including three HDP 120/90 large square balers from Krone. This means any customer wish can be carried out. Annual bales produced peak at 70,000.

This contractor doesn't trade with straw himself, offering simply a harvesting service. In his region he puts the price of straw in the swath at 10 – 15 Euro/t. He says the versatile machinery fleet mirrors the French mentality: never commit yourself, stay spontaneous and flexible. This is also a marketing strategy: the more machinery dealerships that know about the contractor, the greater the mouth-to-mouth propaganda. "This is more efficient than a Facebook page", he reckons.

GOOD SERVICE IMPORTANT

For the straw season, his staff and necessary machinery head over to La Rochelle in département Charente-Maritime where contractor Hallereau owns so-called relais accommodation: a machinery hall with living space for staff members. For this businessman, it is important to offer a good service on-location during the stress-filled season. "Here we have very good machinery repair colleagues from the region's dealerships." To keep repair costs as low as possible, François Hallereau makes sure that his workers follow manufacturers' operating instructions and take seriously the proper care of their respective machines. "Mainly, we do the machinery servicing

François Hallereau started his contractor firm when he was just 18. Nowadays, he employs six staff members.

ourselves. Two of our staff are responsible for balers and two for the silage harvesters and combines.”

In France there are no specialised training courses for agricultural machinery maintenance mechanics (unlike the case in Germany). This means that Hallereau’s operators are largely self-taught concerning maintenance and servicing. Some have attended agricultural college, some studied engineering. “Systems such as ISOBUS and GPS caused us headaches to begin with. But in the meantime, we wouldn’t want to be without them.” Something that this contractor never misses is gathering his operators together every morning at 7.30 for a so-called “lour fixe”, a meeting to plan the day ahead. He’s even designated a special room for this crucial early morning get-together.



For year-round employment, the Hallereau company also offers services for communities.

90% DAIRY CATTLE CUSTOMERS

François Hallereau makes a large part of his annual turnover producing straw litter for livestock farms. “From around 100 customers, 90 are dairy farms. This is a very stable number because in our experience dairymen are more faithful customers than arable farmers. New customers tend to be the exception nowadays, ‘phoning us when their first choice contractor cannot help. In our locality usually the children take over the dairy farm from their parents and this is why infrastructure has remained stable here.” In the immediate vicinity, his business has only two large competitors.

The greatest challenges come, he reckons, from the “Cuma” – private purchasing associations operating along the lines of machinery rings. “The customers have become more proactive and the size of operations in hectares, as well as levels of mechanisation, tend to increase.” On average, Hallereau’s customers farm 50 ha, the larger ones around 200 ha. “The problem is that the farmers only want to pick the contractor services that are most advantageous for their businesses. This is why I only offer my service as a package deal.” Transport of bales is usually organised by the dairy farmers themselves.

YEAR-ROUND EMPLOYMENT

In summer and autumn this contractor has up to 19 student helpers. After all, he not only handles the baling work in La Rochelle but also grass and maize silage harvesting over a radius of 15 km around his home base. In a year, he harvests around 600 ha grass and the same area of forage maize.

The firm organisation is completely via telephone and SMS with especially the latter becoming important. “Most of my customers don’t have E-Mail. That’s why we don’t use software. Here, everything runs on paper and I regularly send out an SMS newsletter with service details.



The contractor's fleet has eight large square balers including three HDP 120/90 from Krone.

Up to eight days before harvest the contractor knows which service he has to carry out with each customer. He himself is on one of the machines for up to 50% of his working day, the rest of the time in the office where he's supported by his wife Brigitte halfdays. Her speciality is preparing the invoices. In 80% of jobs, work is billed on an hourly basis although the trend is moving towards per hectare billing. "This is fairer for the customer if, for instance, a stop is made for repairs", points out François Hallereau who's sons Richard and Simon have worked in the firm since 2014. Their father used this extra manpower to expand his services to cover winter and spring community work including mowing of roadsides, ditches and banks.

The last year was difficult for the business. While the milk price actually rose from 28 cent/l to 32-33 c/l, the farmers required less straw because heat and drought meant they were able to save on litter through the cows staying out on grass much longer. "But we were able to compensate through additional earnings from the new contracting firm we took over."

While finances are substantially better for dairy farmers compared with 2016, this contractor feels the economic climate is still difficult for them. "The drought meant that forage feeding had to start early. In 2017, the maize yielded only 7-10 t/ha dry matter." Normally, the maize would be irrigated in such a season. But in 2017, water reserves were too low.

Looking to the future, Monsieur Hallereau plans to integrate his two sons more into the business. "Both have now seven years in which to buy 48% of shares in the firm. Long term, they'll be taking over everything." «

» LU HALLEREAU COMPANY DESCRIPTION

Location	Torfou, France
Founded	1981
Staff	6 full-time 19 seasonal workers
Customers	Dairy farms arable farms communities
Services	hay and straw baling straw trading grass and maize silage seed drilling fertiliser spreading crop spraying community/municipal work
Key machinery	8 tractors (115 – 260 HP) 3 combines 3 silage harvesters 8 large square balers 1 round baler 2 baler/wrapper combinations 2 mowers 3 swathers 4 seed drills 2 sprayers 2 fertiliser spreaders
Contact	www.hallereau-travauxagricoles.fr

CHAM MOWING GROUP

IT'S BETTER TOGETHER



A self-propelled mower in the Oberpfalz – 20 years ago, members of the Cham mowing group were laughed at as “unrealistic”. But the project developed magnificently, proving a continuous success. Marking the group’s 20th anniversary, the 20th BiG M is delivered – a fitting reason for celebration!

THER



Dr Bernard Krone autographs the 20th BiG M for the Cham mowing group.

Together achieving much more than when working alone – this concept once encouraged not only the agricultural cooperative founder Friedrich Wilhelm Raiffeisen, but is also the basic thinking behind the modern machinery rings. But when it comes to machinery, many farmers still value their independence with their own machinery. And if silage harvester, combine and so on are no longer financially viable for a single farm, then owning at least the mower is always acceptable.

Thus, it was no surprise when the idea of cooperating to buy and operate a self-propelled mower – a BiG M from Krone – in 1998 around Cham in the Bavarian Oberpfalz had folk shaking their heads. This, at any rate,

is how Christian Nachreiner describes the reaction. He's assistant to the managing director of the Cham Machinery Ring as well as coordinator for various other machinery groups. "And this reaction was despite our machinery ring already running a silage harvester cooperation for five years with all-round satisfaction – a cooperation that is still running smoothly. In fact, along with the 20th anniversary of the mowing group we celebrated the silage harvester group's 25th birthday", he reports. "But a BiG M – that really proved hard for many farmers to imagine."

COURAGOUS STEP

Despite this, the idea became reality after the concept was born during a Krone factory visit following Agritechnica 1997. At that time, a number of Oberpfalz farmers had journeyed to Spelle in a visit organised and accompanied by the Krone dealership in Cham, Landmaschinen-Fachbetrieb Breu. "During the factory tour we came upon a BiG M, then still quasi a prototype. This machine immediately enchanted us", remembers Christian Nachreiner. On the journey back home intensive discussions took place – to buy such a machineor not? "There was no immediate agreement and we were still seeking enough farmers for the project for a while. A mowing operation shared by several farms was unimaginable for some. And even when accepted, the idea tended to be seen featuring a tractor-drawn butterfly mower.

A self-propelled machine was seen as unrealistic and maybe even crazy”, recalls Martin Berg, one of the three mowing group directors.

One reason for the reaction might have been the BiG M price: 210,000 DM net. After some to-and-froing, however, seven founding fathers came forward, each agreeing to forward 30,000 DM for a share. By end of February 1998 all was arranged with no bank involved”, emphasises Christian Nachreiner. “All forwarded the cash out of their own reserves and this arrangement continues, with none of the shareholders having to add more than this value over the past 20 years.”

In the end, there were 14 initial shareholders. The number is now 23 and the area mowed each year has more than doubled to some 2000 ha. First of all, the mowing group machines work for the association members. But when there’s spare capacity non-members can pay for mowing. On average, four cuts per year are possible. And what hasn’t really changed much in the 20 years is the average size of the pastures being mowed. Christian Nachreiner: “From patches like football pitches up to 10 ha fields, everything is included, a total of around 1000 separate areas, the coordination of which is hard work indeed. After all, the work doesn’t just involve mowing, the association organises carting the forage home through the silage harvesting group as well as manure spreading by the slurry tanker group.” These groups are not identical, but very similar in the areas they cover.

CLEAR ADVANTAGE

Despite this “small field situation”, the BiG M has been able to play its economic efficiency ace in Cham, adds Michael Armer who, along with colleague Josef Venus, is also on the mowing group board. Part of the reason for this success is through the associated silage harvesting chain becoming much more efficient and smoother, he adds. “The adjustment per button of working width and swath deposition, the partial or complete rolling together of swaths and the option of laying them to one side enable, with simple return bouts, the depositing in a single line of forage from a 19 m cutting width. This



Standing ready for discussions with customers in the foreground of the jubilee party (l. to r.): Martin Berg and Michael Armer (both directors of the mowing group), Christian Nachreiner (Cham machinery ring) and dealership owner Thomas Breu.

means the silage harvester is optimally exploited. Compared with earlier methods we cut the number of swaths picked up by the harvester by half.” Everyone in the silage harvest chain integrates optimally, continues Michael Armer, especially as now a four-rotor swather has joined the machinery ring fleet.

And applying self-propelled mowers instead of tractor-drawn ones immediately frees-up high-powered tractors. Three farmer-members substitute one another as “main” BiG M driver. Their great experience means they can get the best out of the machine. Moreover, the feed thus harvested is proving better than before, with optimum dry matter content and therefore higher quality.

“Additionally, we can react much better in years with difficult weather conditions”, says Michael Armer. And while he’s still on about feed quality, he cannot suppress a tip (with twinkling eyes): “Since working with the self-propelled mower, feed contamination has become less of a problem. Not only because the material is less often moved on the ground, but also because our top drivers do not cut so deep. Even when cutting at 7 cm instead of 6 cm the ash proportion of silage is reduced by 50%. When the farmers all mowed their own feed, the sward sometimes looked like it had been shaved!”

Also not to be ignored is the manoeuvrability of the BiG M, and therefore the efficiency of the cutting operation, adds Martin Berg. This is especially impor-



The group's area for mowing is now at around 2200 ha and with that more than doubled over 20 years.

tant on smaller areas. Mowing with the self-propelled machine also means the running costs are less, continues Christian Nachreiner. This begins with the fuel consumption. "With a triple bar mower, it's hard to manage even with a 200 HP tractor, if you aim for the same hectares per hour performance. Certainly, the Krone engineers produced something special when they designed a self-propelled mower with 450 HP or more. This runs substantially smoother and is less thirsty."

However, even more power is not practical for the Cham team. This was tried. But a return was made to the smaller BiG M, explains Michael Armer. And also the GPS based automatic steering didn't prove useful under their special regional conditions. A welcome extra advantage with the BiG M features a practical-technological detail: the radiator cleaning system. "For tractors, dandelion seeds – of which we have a lot – can be a real problem, continually blocking the front-mounted radiator grill. With the BiG M, which has a rear-mounted engine, and is additionally fitted with a very cleverly designed cooling and ventilation system, this isn't a problem. Considerable downtime or the danger of engine overheating is thus avoided."

BIRTHDAY PARTY

A further economical aspect is forwarded by Thomas Breu and features operating costs. In the first year with the mowing group, material wear and therefore costs, are not too high. Nor are repairs expected at that stage.



A similar celebration also took place for delivery of the first mower in 1998.

"Looking at an annual performance of more than 2000 ha, it must be expected, however, that numerous wearing parts will need replacement in the second year. In order to pay for itself, a third operational year for the BiG M would be preferable. However, the mowing group members do not want this and the machines are therefore sold after one year's operation", says Thomas Breu. "The net additional costs between both machines are relatively acceptable, actually supplied by the mowers' earnings."

Thus, each year since 1998 a new BiG M is delivered to the Cham machinery ring yard. Hereby, the 2018 machine should have been the 21st mower. Christian Breu explains: The first machine came from pre-series production, and was renovated by Krone after a season's work and taken back to Cham for a second year. Since then, though, annual replacement has continued without a break with all machines running faultlessly. "We couldn't wish for more", grins Thomas Breu. Delivery of the 20th BiG M was, however, fittingly celebrated just as was the parallel delivery of a new BiG X on the 25th jubilee of the silage harvester group – with Church blessing, huge birthday cake and a few other goodies ... <<

A video to accompany this report can be called up via the QR code or via the link:
krone.de/xtrablatt-videos



PTO SHAFT

INTENSIVE CARE



The new swather is ready for collection at the dealership. Time to go and get it. It looks really good, the new tractor and swather rig. Wait a minute though: it's still not ready for work. A detail is still missing – the pto shaft. Without this, nothing works.

A small detail? OK, it tends to be boring, as well as the often irritating coupling and disengagement in the tight space between tractor and machine – and the subsequent grease-coated fingers. Still, the pto shaft deserves a little more attention. After all, the tractor power and the implement performance all come to nothing when this component stops work. Mostly there's a reason for something going wrong, and it always happens at the worst possible time. Wanted: a speedy repair or exchange.

Here's where Reinhold Lambers comes into action. He's a mechanic at LVD Krone farm machinery in Spelle and during the season often enough has one of these defective pto shafts lying on his work bench. "Mostly they're not the result of an accident, but more likely just badly maintained", says this farm machinery specialist. "The pto shaft deserves more attention", he advises, "because most of the damage comes from simple operational and maintenance mistakes."

CORRECT LENGTH

The proper handling of a pto shaft should start before its first revolution. The first job is usually shortening it to the correct length. Reinhold Lambers takes a shaft

The safety sleeve anti-rotation chains are attached to tractor and implement.



Measure the correct length for the shaft at the mounted implement and mark the length to be shortened.



Shortening the pto shaft, the profile tube per flex, and the plastic sleeve using a saw.

and lays it, pulled right out, between the tractor and the new swather. Logically, the right length can only be estimated when it is decided which tractor should be powering the implement. The distances between tractor and implement vary substantially, depending on the lower link length. Just a few centimetres too long and the shaft is subject to tension. The solution: measuring, marking and sawing. Reinhold Lambers shows how it's done. He cuts the profile tube with the "flex", and the plastic sleeve with the saw. It's quickly done. But neat

work is important here: filing down the rough sawn edges and applying a spot of grease for the inner profile tube before it's shoved back into the outer tube. After the protective sleeve is correctly mounted the grease gun comes again into operation, lubricating both sides of the clevis and greasing via the nipple on the universal joint. How much grease and what kind? This is different from shaft to shaft, but the information is printed in the maintenance instructions, the mechanic reminds us. In most cases recommended is lithium saponified grease consistency class NL-GI2. The correct grease is available in retailers ready to use in the appropriate cartridge. One pump with the grease gun brings approx. 3 g grease in the shaft, he explains. Here the saying, "too much isn't good" should be remembered. Too much grease can lead to clutch blockage.

ACUTE ATTENTION

The pto shaft is then attached to the implement via the known hand actions that we've all carried out a thousand times. Watch out, though: thoughtless routine leads to carelessness. And this can be punished. A farmer – says Reinhold Lambers – experienced the shaft parting from the pto stump during operation, just because the sliding pin had not locked properly in place. So make sure the shaft slides right onto the stump until the sliding pin locks into the radial groove. Then, the protective sleeve chains to prevent movement should be attached to tractor and implement. Now start the test run: the swather rotors turn. The new rig is ready for action.

So that it remains that way through the season, Reinhold Lambers offers some tips to take back to the farm with you. "Greasing stands right at the top of your to-do list. When pto shafts end up in the workshop during the season with a broken universal joint, this is mainly because of lack of grease. When a universal joint no longer works properly, this can be identified through the shaft clevis running hot. Then, the universal joint should be replaced, otherwise the clevis can be damaged too. Simply more care and attention for pto shafts – that's all that's needed to bring them safely through the season", he concludes. «



File off rough edges of the flexed pipe – and don't forget a blob of grease inside the profile tube.



The grease nipples should be filled on both sides of the clevis and at the universal joint.

A video over this report can be viewed via the QR-code or the link:
krone.de/xtrablatt-videos aufrufen.



CHECKED ALL-ROUND

Every machine produced by Krone is subject to diverse tests for quality control. A new final test stand has just been introduced for round balers.



Quality right from the beginning: this is the Krone credo. And for this reason, there are already quality spot-checks carried out on supplied components before they actually reach the assembly process. On the assembly line itself, workers also carefully check individual parts before the process begins. Additional test points are diverse “quality gates” through which the round balers also have to pass.

Before one assembly team transfers a partly assembled machine onto the next team, the machine is tested for perfect quality and the test results documented. For this, Krone has a flexible test plan with defined commissioning steps (e.g. calibra-

tions and programming) to be followed stage-by-stage by the team. For back-up at this stage, comprehensive assembly documentation, engineering drawings and example photos are among the reference items that can be accessed on mobile terminals via the production system “Krone.Assembly”. Any problems that occur are noted and delivered to the assembly line manager and discussed weekly. Corrective measures are decided upon and scheduled for application.

After assembly, a roundbaler now goes onto the new test stand. Here, all the information, automated and digitized, flows in from the previous work stages.

The baler is identified via machine electronics and, based on the information, the production system “Krone.Assembly” steers the stand and the machine step-by-step through final commissioning and testing stages. All data is stored along with the machine number so that assembly and commissioning of every round baler is comprehensively documented in digital form. If required, customer service can access respective technical specifications via the machine number. «

LEBENS GEMEINSCHAFT E.V. MÜNZINGHOF

THE CYCLE OF LI



One village, around 160 inhabitants, some requiring help, others not, eight community units and ten workshops. This is the Münzinghof Lebensgemeinschaft or community. Included is a farm managed according to Demeter biodynamic principles by Peter Blancke. His aim is a closed economic cycle and therefore a good portion of self-sufficiency: an exciting example of successful inclusion and of “organic” and “modern” in farming not necessarily being contradictory.

FE



Baling of hay and straw at Münzinghof is by regional organic farmers who also do some contracting work.

Those seeking the Münzinghof community in the district of Velden discover the farm nestling in beautiful countryside on the north-eastern tip of Nürnberg Land. The route takes us through Franconia into the Oberpfalz, winding along narrow roads from medieval Amberg with the rushing river Pegnitz on one side and sometimes very steep mountainsides rearing up on the other. A final stretch of forest, a last row of hills, then the eye falls upon a small cluster of houses – the farming community of Münzinghof.

This isn't simply just another rural hamlet, however. Firstly, all the buildings belong to the Lebensgemeinschaft e.V. Münzinghof, a type of special needs commu-

nity this year celebrating its 40th anniversary. Inhabitants number around 160 including people with special needs. Ten places of work offer employment: a cheese plant, bakery, market garden, housework centre, a joinery, a maintenance office, metalwork shop – as well as handbag and candle making enterprises. Every workshop is managed by a certified master craftsman, some of whom live regionally, some actually staying in the community. But let's not forget the farm with its numerous buildings: this forms part of the heart of the community.

"Everyone here can work at what they want to and what they're able to", explains Peter Blancke. This agricultural graduate has managed the farm for 15 years and lives with his family, as well as seven special needs residents, in the "farmhouse", parts of which are much more than 40 years old. Eight such houses with family groups make up the living quarters, with several smaller flats for young and old in other buildings. "Very important to us is establishment of an equal opportunities society within which people, some of whom might need assistance, can live together. This differentiates us from other facilities", points out the manager. Incidentally, he finds descriptions of people such as "disabled" or "handicapped" less than helpful and prefers the formulation "with special needs".



A further difference within the Münzinghof community: there is no canteen as usually seen in other institutions. Instead, every family and every communal household cooks for itself. Those interested in cooking can learn in the “housework” centre. Thereby, it’s natural that farm-grown produce is used. “Although we also buy other organically grown produce. After all, we all love variety”, smiles Peter Blancke.

GOOD MILK YIELD

The Demeter certified farm comprises 87 ha field and 28 ha forest. The farmer is assisted by two full-time workers, a student and a trainee – as well as ten colleagues with special needs. “Milk production is a main enterprise”, he adds. Herd average: approx. 8000 l at 4.03% fat and 3.35% protein. “This is already pretty good for a Demeter farm.” Stocking is 26 Fleckvieh cows plus followers. “Earlier, we had black & whites too. But we slaughter four to five animals annually with almost all the meat used for salami production and because the black & whites were 200 kg lighter than the Fleckvieh at slaughter, we decided to concentrate on breeding the bigger beasts.” Additionally, the lighter and smaller black & whites had a tougher time as herd members.

The horned milk cows are overwintered in deep straw courts with a yard for exercise and some peripheral cubicles. During the season they are turned out to graze surrounding meadows. The youngstock graze the outfields,



thereby helping to retain the traditional and unique local field patterns. Over winter, herd followers are housed in bedded courts with outside run. Calves get milk for three months, with a changeover to calves part-suckling their mothers being currently considered.

“Cow health is very important to me, whereby the cows shouldn’t be fed to produce more than their natural potential”, declares the manager. He continues to study milk production possibilities and is happy to call in specialists for advice, thus avoiding the development of what he terms “farm blindness”.

“In particular, the selection of the bulls and the insemination is now left to experts for organically managed cows with whom I clearly define beforehand our breeding aims. This investment in breeding strategy advice certainly pays for itself very rapidly”, reckons Peter Blancke.

HIGH FEED QUALITY

His philosophy of utilising natural potential also pays with forage: “We try to produce more class than mass”. In the past, less farmland was available and the concentration was more on growing as much as possible, thus cutting later. This resulted in forage with too much dry matter content and not enough energy. Nowadays, with more land available, he aims for so-called “beer bottle grass”, in other words maximum 30 cm growth, but four



- 1** Peter Blancke has managed the Lebensgemeinschaft e.V. Münzinghof farm for 15 years.
- 2** This farmer mows his grass in late afternoon because then plant sugar content is higher and bee activity less.
- 3** Moisture content for the milking cows' hay is around 12 – 14%.

harvest is not only the entire farm team, but also many other villagers. Many hands are needed because the hay is carted loose in two self-loading wagons but then unloaded and hand-forked into the hay blower. This routine and the drying plant itself has functioned for over 25 years without any problems and results in high feed quality, maintains Peter Blancke. "On top of this, we are much less dependent on weather with this strategy."

Silage on this farm is produced in the form of round bales as well as in two clamps with everything rolled in a maximum of 24 hours after mowing. To help here, Peter Blancke alternates between two nearby organic farmers who both do occasional contracting work with their tackle during the silage season. Says Peter Blancke: "We don't have to buy in any feed nowadays which helps us on the road to self-sufficiency."

SUCCESSFUL CYCLE

Not only the good cooperation with the above-mentioned organic farmers, but also with others in the locality is extremely important to this farmer. This is because Münzinghof rents some fields from neighbouring land-owners and also regularly buys wood chips for fuelling the farm's five-year-old wood gas heat/electricity power station. "I therefore ensure I source the fuel from the farmers who rent us land, or from other neighbours. In this way we develop a mutual loyalty", says Peter Blancke. After all, the annual requirement of around 1700 m³ wood chips cannot be supplied alone from the farm's own forest, nor from cuttings from its landscape tidying work. Gas is produced from controlled burning of the wood chips. After cleaning, the gas fuels an engine and generator producing around 220,000 kWh electricity per year. The by-product heat goes into a central heating network while direct engine heat is collected by fans and forced through the wood chip bunker, reducing moisture content to just 8% within five to seven days. "This concept won us the Bavarian Environmental Prize in 2014", reports Peter Blancke proudly.

cuts in the year – weather permitting. Precipitation at Münzinghof averages around 700 mm per year, although with extreme summer – and sometimes spring – dry periods. "This certainly presents us with challenges", he admits. However, in good years sometimes even five cuts are possible. There are times when there is too much rain, though, such as in summer and autumn 2017 when regular downpours made harvest very difficult.

48 of the 87 ha farmed land is in permanent pasture. But forage is still grown on some of the arable land, usually as clover/grass mixes or lucerne. The farmer prefers to mow in late afternoon, there's higher sugar content in the plants then and less bee activity. Münzinghof uses a 6.40 m working width front and side mower arrangement from Krone, without conditioner. Also used is a drawn 3.20 m mower with conditioner. Apart from swathing, the hay is moved very little, to avoid feed losses and contamination. The result, he finds, is a forage that has more energy content, is cleaner and of an overall higher quality.

To support this, the hay must be quickly carted home. If possible, within 36 to 48 hours of mowing. This means that it's still not dry enough for baling. The solution: a cold-air drying plant on the farm where the forage moisture content is reduced to 14 – 12%. Roped-in for the hay

The principle of sustainability with all food and feed produced applies within the entire farm. Thus, almost all milk is processed into cheese and then marketed: a range that includes around 22 different Demeter varieties plus quark, spreading cheese and yoghurt. The resultant whey ends up in the troughs of 24 feeding pigs kept in an open “comfort” sty. The ham from the pigs, as well as meat from culled cows, ends in the farm salami. Grain grown on the farm is partly used in the Münzinghof bakery for bread and pastryware. Vegetables can be sourced from the farm greenhouses, that are also used as nurseries for seedlings and flowers. Incidentally, some of the plants and organic vegetables are in great demand from numerous customers over a wide area. “Regionality, sustainability and inclusion are not just trendy words for us. We live this concept every day. Quite simply, I like the cycle, because it represents my convictions as a farmer”, emphasises Peter Blancke.

Naturally, the cycle economy on its own is not sufficient for economic survival. Münzinghof receives financial support for every person with special needs living and working there. To this can be added the profits made by the individual workshops. “In fact, with 115 internal and external colleagues on our payroll we are the biggest employers in the Velden district. On top this come the people with special needs that live here”, explains Peter Blancke. Special challenges are the regular investments needed, particularly the larger ones for bigger machinery or for buildings. After all, it is not possible to apply the same financial efficiency measurements as in a purely profit-oriented business. “Something like 20% of required investment capital is earned by our workshops, approx. 80% comes from the appropriate institutes that support the establishment of work places for those with



A bakery is also part of the community. There, farm-grown grain is used and a large selection of breads and other bakery ware marketed.

special needs”, he adds. The farm business forms the exception in this respect with just 20% of capital coming from supporting institutes. “For our agricultural enterprise we receive no more financial assistance than does any other organic farm. Everything we invest in this case has to come from farm earnings.” Very pleasing is, however, the support received from outside enterprises, for instance a number of farm machinery manufacturers that sometimes offer price reductions. These also can earn the companies tax deductions. Peter Blancke is proud of the fact that the economical and marketing concepts have worked out so well and that the agricultural business within the commune makes a profit. “This was not the case 15 years ago. Organic and modern are, after all, not so contradictory”, he concludes. «

SERIES: “PREVENTION INSTEAD OF CURE”

CORRECT FEEDING



An optimal feed quality is basis for good animal health and high milk yield. But even with the actual feeding of the ration there are clear factors for success. In part 2 of our series, vet André Hüting pinpoints the key aspects.



For this vet, a central theme is the correct grouping of milkers, particularly in herds of 200 cows upwards. Hereby, it is not enough to form just one low and another high yield group. “Best is to create at least three groups, oriented on the age of cows and therefore on their dry matter intake capacity. In the first group are heifers, in the second, second and third calvers and in the third group, cows that have had their fourth or subsequent calves”, points out the vet with the added aside: “In some farms the heifers continue to be served simply too late. Often after the 8th – 10th month of age they are still getting feed that’s too high in energy content. Result: they start to get too fat. Cattle that are early in-calf as a rule last longer and tend less to fatness.”

However, he reckons, good grouping influences not only feeding the composition of rations according to age and yield, but also has a large influence on feeding behaviour and, with that, individual intake. “As soon as an animal has calved it should be assigned to the appropriate group and remain there until drying off. Failure to establish this social stability costs, in our experience, up to 500 litres milk per cow and lactation.”



He also finds that composition of rations influences optimal stability. The first step being a selection of components that remain the same. Secondly, a large diversity of components should be offered. Alongside the standards maize (maximum 60 – 65% of ration) and grass, come beet pulp, draff, straw. Carrots or potatoes are also tasty ration constituents for animals. Naturally, too, concentrate and mineral feed, salt and yeasts. “These supplementary components should, however, be already mixed before they are added into the basic forage”, he advises. “Complete TMR remains the trend. But watch out: dry matter (DM) content of 45% is too high for a dairy cow’s complete ration. There’s then a danger that cows nose the ration around, picking out the tastiest constituents. A DM content from 33 to 36% with grass and 36 to 38% with maize are the values to aim for”, says André Hüting. Important is that the concentrate feed, best in meal form, is bound to the forage. In this way, selection by the animals is prevented.

From the nutrition aspect, he notes with unease the growing proportion of robot milking systems, because here the above points have to be watched even more carefully. Robot milking means the return of feeding part of the concentrates at the milking point. This puts even more demand on feeding gate management. More preferable is to be sparing with the concentrates at milking and to mix these energy bon-bons as much as possible in the total ration.

On the other hand, he is enthusiastic about the so-called pushing-up robot in the feed passage. “Optimally, feed should be on offer 23 hours daily so that every animal, at any time, finds enough feed. Heifers often feed at night because they are pushed aside by the older cows during the day and therefore have to make their way to the feed table more often because, per visit, they cannot eat as much as an older animal. Where the amount of feed available is not optimal, the wrong nutrition or even malnutrition occurs and, as a result,



- 1** André Hüting and his colleagues from the veterinary practice “an der Güterstraße” in Hamminkeln advise a few hundred dairy farms on questions of feed quality, feeding and animal husbandry.
- 2** Cows must always have enough feed in front of them. With tractor or per hand, feed should be pushed up at least four times daily. Still more effective is a robot.
- 3** Cows always feed at the same place. If individual components are missing at the start or the end of the feed table through faulty mixing, then it is always the same cows that are wrongly fed and eventually ill, observes André Hüting.

performance loss is pre-programmed. The automatic pusher-up increases milk production by as much as 2 l/cow daily, in our experience.” If, instead, feed is still pushed up with the front loader or per hand, then this should be done at least four times daily.

This vet also finds that on many farms a problem is caused by feed mix wagons having too small a capacity with the result that they are filled to overflowing. “With a DM content of 45%, the resultant volume means that the necessary weight of feed isn’t achieved. And when the wagon is too full, it only appears to be mixing the ingredients.” Some time ago, he noted with interest the actions of one farmer who always first drove his mixer wagon in a barn with a low ceiling – so that the feed could not spill over the top. Accordingly, his recommendation: Fill feed mix wagons only three-quarters full. First, short-chopped straw, then grass, then concentrates and the previously mixed ingredients. Finally, maize and other moist components

should be loaded. Not to be forgotten is the rapid addition of the required amount of water. As soon as everything is loaded, three minutes at high revolutions should be enough time for the mixer to do its work.

It is additionally recommended to load the constituents always in the same order and, with large herds, to establish a mixing protocol, especially when different operators are mixing and feeding. Also important are regular DM checks of basic feed components and complete rations. This is because even different methods applied by various operators at the mixing wagon along with fluctuating DM together represent a measurable error source. However, if everything runs smoothly a really homogenous mix is the result and, from beginning to end of the feeding trough, the same quality can be found. “Feeding correctly doesn’t involve any secrets. It needs, above all, care and commitment”, he concludes. «

MASCHINENRING SOLTAU-WALSRODE

A RING WITH NO WORKSHOP



The Soltau-Walsrode Machinery Ring owns two Krone BiG X harvesters working only in maize. But this ring has no backup workshop of its own. How does it manage? Director Dirk Fahlbusch explains.

The Soltau-Walsrode Machinery Ring is based very near the A7 autobahn on the edge of Lüneburg Heide. In 2000, the organisation was formed by the fusion of two rings: Soltau and Walsrode. German rings are non-profit societies and so as early as 1988 a limited company, Mawaso GmbH, was founded to handle the financial aspects. Managing director Dirk Fahlbusch explains the organisation and the services it offers. “We employ eleven full-time workers on the machines

Dirk Fahlbusch is manager of the Soltau-Walsrode Machinery Ring e.V.



and in the office. The machinery ring has 370 members, mainly farmers and biogas producers and a few farm contractors.” On the one hand, the organisation offers agricultural services such as harvesting of maize and slurry spreading, on the other, it manages sewage works and compost production plants.

The last year was a difficult one. On the predominantly peaty and in part sandy soils, harvesting was not always easy and wasn’t even helped by the large capacity machines available – for instance, two new Krone BiG X harvesters. These machines were introduced into the ring fleet in 2017 and Dirk Fahlbusch is satisfied with the performance. “We replace the machines regularly, however. Mostly after around 6,000 hours”.

In the last harvest, problems were partly the wet soil conditions but also the large proportion of lodged maize in many fields caused by a storm. Nevertheless, the harvesters chopped approx. 48 t/ha. Dirk Fahlbusch relates: “The main problem was that the harvest could only be started late on. Normally, we begin chopping around September 20. But last year it was October 20 before we could really get going. It took this long before dry matter was acceptable, at 32 to 34 %.”

TOP JOB BIOGAS

Chop length is left by Mawaso to the customers, 6 to 8 mm being the main choice. “Most are biogas producers”, explains Fahlbusch. “These have other requirements from maize silage than, for example, dairy farms that want their forage more structured. I am very happy about the long-term work with biogas plants because it allows us the necessary planning security and enables us to invest in new harvesters.”

However, he’s very aware about discussions on the future of biogas and the associated maize growing areas. Alongside the planned increase in sugar beet for biogas production, apprehension is also caused by the expansion of the European corn borer pest. “Here, we’re in a classic maize growing area. To loosen up the rotation we grow sweet sorghum in some parts. This does well, especially in very dry areas. Additionally, we sow this crop on areas under very high pressure from wild animals because wild pigs, for instance, don’t do so much damage to sorghum.”

LARGE MACHINE FLEET

During the maize harvest, eleven staff members are naturally not enough, and numerous support workers are brought in. The machinery ring has no tractors, owned machinery comprising the harvesters and a total of 12 transport trailers of various makes, three wheeled loaders, a Unimog, a Multicar and a Hansa for winter jobs and two slurry tankers. Transport jobs right across Germany are also undertaken with seven trucks.

During the busy season, the extra hands work two shifts for harvesting from 7 am to 10 pm, with driver changes, however. “This keeps us within the law and avoids over-tiredness behind the wheel and associated accidents”, says the manager. A speciality of this machinery ring is sheeting of silage clamps. Many contractors don’t like doing this and it is also difficult to find employees to carry the task out. Dirk Fahlbusch identified this niche and now his ring covers up to 70 clamps a season. However, this is not an easy job and Fahlbusch admits: “The crew has to be motivated. It doesn’t help when there’s someone there that doesn’t like the job”. The ring also supplies the required plastic sheeting.



With seven trucks, freight is transported countrywide.

WORKING IN MAIZE ONLY

But how can the machines be full exploited when they only work during maize harvest? The manager explains: “In that we have mainly only regular customers, we can plan very precisely and know the required working rate. On average this is between 2000 and 2500 ha maize, in other words at least 1000 ha per machine.”

And why do the machines work only in maize and not in grass? “With the maize alone, I achieve good exploitation of the machines with not too much wear and tear, the sort of damage that can occur in grass where, for instance, soil and other contaminants can quickly blunt the knives. Additionally, it shouldn’t be forgotten that there are already very many harvesters working in grass here.”

The two new BiG X machines will probably stay in the fleet for six years. To achieve the 1000 ha/year performance, there can be no long downtimes for repairs. “What counts for me is absolute reliability. This is what my customers require. This reliability also comes from servicing performance of the dealership. This functions perfectly. During harvest, mechanics are always available and in emergencies we can fall back on a reserve machine.” But despite this good cooperation, Dirk Fahlbusch wants to be more independent in daily maintenance work. “On a nearby site we have already established storage sheds for sewage sludge and compost as well as silos for ferment residue. We plan to build offices there and a workshop and machinery shed. I cannot say exactly when we’ll be ready for this. However, then it will be possible for us to service our own machinery in our own buildings”, envisages Dirk Fahlbusch. «



The machinery ring was formed in 2000 through fusion of separate Soltau and Walsrode rings.

LANDTECHNIK MILER (SLO)

BETTER WITHOUT TRACTORS



Branko Miler from Ravne na Koroškem in northern Slovenia has specialised on supplying farm and forestry machinery since he and wife Natalija founded their company 18 years ago. But they have a principle of selling no tractors – an unusual, but successful, concept.

Even before EU accession in 2004, and before independence in 1991, Slovenia was one of the most economically strong parts of former Yugoslavia. And this small country on the way from Austria into the Balkans exploited very successfully the available opportunities, which still doesn't mean the road ahead was straight and stone-free, difficulties that also applied to agriculture, a sector suffering under painful structural change since the millennium began.

However, decisive changes always offer opportunities too, and supply unexpected developments. Branko Miler personifies a good example of this. After 10 years as store manager at an agricultural cooperative and eight years trading in building materials, he discovered, in 1997, a passion for agricultural machinery. First as salesman at a dealership and then, from 2001, as independent trader with his wife Natalija. "The demand for machinery was substantial. However, it became clear that the established farm structures in Slovenia offered us opportunities for developing new ideas", he recalls. Regarding the mentioned structures, these included a multi-step system of importers and dealerships resulting in what Branko Miler recognised as limiting inflexibility. "Sales were – and often still are – based on price alone, and not on arguments related to the advantages and strengths of respective machines. Many salespersons had too little specialist knowledge. And many dealers offered too little service. We turned this around to our advantage, offering good performance, a real plus for our customers and solid support for their businesses."

STEADY EXPANSION

Branko Miler's own business development shows that this approach works. While, back in 2001, things began with an office in the Miler house and a small storage shed in the hamlet of Prevalje, some 130 km northeast of the capital Ljubljana, the next step took place in 2006 through purchase of an office with workshop and store. In 2010 the husband and wife team opened a first branch in Slovenska Bistrica, 70 km to the southeast. The second branch opened 2012 in Komenda. Three years later, Nr. 3 followed, this time in Krško near the Croatian border. A quartet was completed in 2015 with a branch in Murska Sobota in the northeast of the country where



Austria, Hungary and Croatia all border Slovenia. In 2016, the base premises were completely rebuilt and, one year later, the business pair risked a leap across the border, opening a fifth facility in Kalinovac, Croatia.

The range offered under the Miler name now includes twelve farm machinery makes, most out of western Europe. Krone was one of those from the first hours of business and still an important earner for the Milers. As with most of the other brands sold, the dealership tops the country sales for Krone – "as far as I can judge", cautions Branko Miler. "Officially, there are no reliable market figures. Although our country and our agricultural sector is small-scale compared with other lands so that one soon gets a feel of how many models are sold each year." Accordingly, the Miler market share in Slovenia in the core segments lies between 30 and 60%, he estimates.

He reckons 2017 was a record year with a total of more than 800 machines sold including around 380 from Krone, and a total turnover topping 12 m Euro for the first time. The new branch in Croatia has certainly helped here, just as has the now three-year-old retail outlets for garden machinery and "countryside tools and equipment". In fact, the Slovenian farm machinery market was in general in good form in the last year, he reports.

SERVICE IS DECISIVE

However, you'll search in vain in all five company premises for tractors. The reason is not that it wasn't possible to win the right to represent any well-known makes. "What disturbed me massively was the narrowly defined manufacturer requirements, going as far as the layout of the showrooms and the flags in front of the building



door. Our suppliers are certainly important to us – but the company belongs to us and we supply the service to our customers. Therefore our own name should be plain to see outside and I refuse to let myself be put under pressure. For this reason, we’ve decided against the restrictive rules of the tractor manufacturers – and are progressing very well with our implement makes. In this segment, we work on an equal basis with the respective manufacturers. There’s no doubt things are better without tractors”, he adds.

As a key to success, this businessman sees his committed team that has grown from a single man in 2004 to a staff of 42 now, including six in Croatia. Decisive here is specialist competence, good relationship to customers and a high standard of reliability. “Performance with us has a face. That is valued by our customers”, says Branko Miler. However, like many of his colleagues in other countries, he worries about the increasingly difficult search for good employees serious about working in agricultural engineering. Decisive for success with this businessman is the service aspect. Here, Slovenia differs clearly from Germany, for instance. As a rule, one seeks large farm equipment workshops in vain, also under the Miler name. “Here, the tendency by farmers to repair things themselves is very pronounced. And there are also enough mechanically minded people who can handle this. Luckily, though, increasingly agreed upon is the fact that cheap is not always good value – and that specialist knowledge is nowadays indispensable with modern farm machinery. This is why we’ve invested heavily in workshops and further training, in order to retain our lead over the competition, or even further increase it.”

He also sees the spare parts business as a good door-opener for customers. In the meantime, spare

- 1** Nowadays, 42 employees work in Natalija and Branko Miler’s business.
- 2** The company headquarters is in Ravne na Koroškem, northern Slovenia, having been being rebuilt in 2016.
- 3** In 2017 the Miler company sold 800 machines, nearly half of them from Krone.

parts earn around 10% of Miler turnover. Overnight deliveries are not so common as further west in Europe. Instead, customers often collect parts themselves from the branch. Or a staff member takes parts along and delivers them personally when in the neighbourhood. The same turnover volume is achieved by sales of nets, plastic sheeting and twine for the forage harvest – this segment being very pronounced in a land strongly characterised by grassland. “Our aim, now and in the future, is to meet the requirements of our customers better than other dealers. And with professionalism in this respect we try to be always a nose ahead of our competitors”, concludes this dealer. «

NEWS-TICKER

TRAINING MODEL

New training course material and equipment have been presented by Krone to Brinkstrasse Vocational Training School in Osnabrück, Germany. This includes a MAN demonstration engine and a load-sensor controlled front loader model. The engine was prepared for its new role as part of final exams in the Krone mechatronic workshop.



CATTLE CAMP

Advice on feed and rationing as part of disease prevention was focussed on in the veterinary congress "Cattle Camp". Krone was among the presenters at the Haus Düsse Research Institute event informing on, among other things, technical principles for quality silage production to delegates from Germany, Austria and Switzerland.



ROYAL VISIT

An important guest visiting the stand of the Spanish Krone importer "Farming Agrícola" during the FIMA exhibition in Zaragoza was the Spanish king, Felipe VI. He talked to people on the stand and discussed current agricultural topics.



STEM CELL DONORS HAILED

621 Krone staff members registered as potential stem cell donors in typing actions in Werlte (2007) and Spelle (2014). Since then, 23 Krone employees have actually donated bone marrow stem cells. The donors were officially thanked by Petra Ennenbach from the German Bone Marrow Donor Database (DKMS) and by Bernard Krone.



HUNTERS WORLD

New in the Krone shop is the company's Hunters World collection including high quality jackets, vests, trousers, pullovers, caps and hats – for both men and women. Tailored for extreme robustness, the articles are characterised by fine workmanship and practice-oriented functionality.



PAVEL KOUŘIL RETIRES

The retirement of Pavel Kouřil, long-serving Krone factory representative, was officially marked at a function during the Czech Republic Techagro exhibition in Brno. Bernard Krone thanked him for his outstanding commitment to the company over eleven years, and emphasised the notable development of Krone market share during this period.

OFFICIAL FAREWELL

Stefan and Karin Eckert handed over their factory representative roles in Erbach to their successor Dominik Falz. "For almost 30 years, both of you have played an important role in sustainably establishing the good image of the Krone name in the Odenwald", said works manager Hans-Dieter Heet (right) in thanking them on behalf of the entire Krone team.



SUCCESSFUL IN-HOUSE SHOW

Traditional for the second weekend of March is the LVD Krone in-house show in Spelle. Once again this year, many thousands of visitors came to learn more about new farm technology trends and the latest machinery.



AWARD WINNER

Territory sales manager for North England, Tom Hopkins, won the Manufacturer Excellence Award for Sales and Technical Support at the annual Agri Machinery Trade News Excellence Awards. The prize is given for outstanding performances in the farm machinery industry.



LEARNING ON COMPUTER

Krone trainees now have the opportunity of utilising E-Learning when preparing for their final theory exams. This so-called digital learning covers all themes, e.g. mechatronic tests, with short instructional film sequences, including sound and animation, able to be accessed on computer.

XDISC WITH VERTICAL SIDE KNIVES

In tightly tangled or heavily lodged crops, the XDisc direct cut header with vertical knife on either side can be applied for optimal progress. This cutter system avoids blockages, even under difficult conditions.

BANNSTEINHOF

BIO – LOGICAL



For generations, the family Ruf has farmed Bannsteinhof where a changeover to organic production occurred just a few years ago. Marco Ruf explains how the family has managed to maintain a herd of contented animals in a system based on the natural ecological cycle backed by production of best possible forage.

Bannsteinhof lies around 7 km north of Zweibrücken in Germany. Even from the road, travellers see the farm's mobile hen houses and the large farm shop sign. With the help of his parents, his uncle, grandfather and two trainees Marco Ruf manages the farm business. "Earlier, we were a conventional farm, producing feed on our fields and fattening bulls with it", he recalls. "For environmental, nature protection and health reasons we decided to convert to organic production and are now committed bio-farmers. I am happy that things worked out this way because I did my training on a conventional farm and know all about the economic pressures."

Nevertheless, an organic farm must be economically viable too, and for this reason Bannsteinhof has a number of enterprises. Alongside feed cropping, there's a biogas plant as well as poultry, cattle and pigs. The resultant products are retailed in the farm shop. Because the Rufs keep forage production in their own hands, a high degree of mechanisation is necessary. The farm covers 350 ha with a rotation featuring clover/grass leys and cereals. Annually, there's about 100 ha clover/grass with 80 ha permanent pasture and the rest cereals. "We grow oats, wheat and spelt for the food sector with marketing via Bioland", declares Marco Ruf. "In spring, even under good conditions, we are fully stretched at sowing time. These machines are being used today by my father Achim", says



Marco Ruf farms Bannsteinhof in Rhineland Palatinate, Germany with his parents, uncle and grandfather.

Marco Ruf as he walks round one of the buildings where numerous machines are parked, some ready for work, others still in their "winter sleep". "We own, among other implements, a mower, a turner and swather, although we don't have a silage harvester. The contractor supplies this. The mower is a 2013 model and the turner was bought in 2014. A four-rotor swather is brand new. We brought it home in 2017 to help us produce our forage more efficiently. In addition, we have five tractors from 80 to 280 HP. We are not stuck on any particular make because we work together with various dealerships. Much more important than the price is having a good relationship with the respective dealers, and that the various workshops function."

GOOD FEED FOR RARE BREEDS

Mostly, three cuts of grass are made per year. Hereby, it's preferred to cut a little higher, giving cleaner forage. Cutting height is 7 to 8 cm. To help keep the leaves on the clover, the forage is turned just

once. Ensiling is in a classic clamp with a small proportion of the crop hayed and baled. That the feed tastes good for the cattle can be seen just a few metres further on. Cows push their heads deep into the hay or low in greeting. Kept here are 35 sucklers with followers, a central element in the farm's natural ecological cycle system. Up to 1,000 t silage is fed each year. Calves are weaned at six months and then fed for 15 months to slaughter. In winter the animals are housed in a converted bull feeding barn with outside run in the yard. In summer, they're out grazing.

Marco Ruf explains why he has special breeds of cattle: "We run a local breed called Glann-Donnersberg or just Glanrinder, a traditional three-purpose breed. Earlier, these cattle produced meat and milk and were also used as draught animals on the fields or in the woods. The breed is in great danger of dying out and we are a herd book farm. I value the animals above all for their quiet and friendly nature. At slaughter they weigh about 700 kg and give a very good beef quality."



Slaughter takes place nearby and the carcass halves are delivered straight back to the farm for cutting and retailing. The same process takes place with the 20 pigs kept on the farm. These also belong to an endangered breed: the Schwäbisch-Hällische landrace.

FARM SHOP WITH SELF-SERVICE

The livestock demands more labour than fieldwork. But through direct marketing via the farm shop the animals also leave a substantially bigger margin, says Marco Ruf. In the Bannsteinhof shop other home-produced ware is offered. Only a small proportion, such as pasta or bread spreads, is bought-in from other organic food sources. This farmer recognises the current trend towards regional products. There's increasing demand. In the past, organic or "bio" was in great demand. But many customers now understand that this alone is not enough because "bio" doesn't always mean regional.

Mother Margit Ruf looks after the shop, supported by daughter Jessica and two assistants. Additionally, she runs the farm office and has also developed an interest in sausage production, continually trying out new recipes on the family and customers. Her creations can be seen in the shop refrigerator. During our visit the shop was closed because opening times



are adjusted to allow those working all day to come and shop in the evenings. However, those who want to buy eggs just before Easter, for example, have to get up very early. A sign at the door already announces: Sorry. Eggs sold out today! Actually, eggs are sold out with shop opening times anyway. In front of the shop there's a small refrigerator where customers can serve themselves round the clock.

The 450 layers peck and scratch in hen runs sited around the steading. These are pure egg producers, housed in mobile houses. In joyful expectation of feed, the hens run clucking towards Marco as we near them. He reckons that every hen has 8 m² space for herself. Unlike the cattle and pigs, the poultry represent no special breed. Marco Ruf explains why:

"A few years ago we experimented with a dual-purpose breed – Les Blues. But their laying performance didn't really match their feed consumption. We are an organic farm, but still we have to turn a profit. So we decided against the breed. However, we are still looking, and plan to experiment with another one. Egg selling is not a straightforward business. But we have established a good rhythm. In the summer months when the hens are laying well, but egg demand is not so high, we regularly replace flock members. The redundant layers are slaughtered and sold as 'soup' hens."

REAL BIOGAS

Back to the farmyard, we walk through the former bull feeding barn to the biogas plant. Meantime, this has become the



most important enterprise. It's a real "bio" biogas business, says the farmer proudly. "We manage the plant according to our original concept, in other words as part of the natural ecological cycle system. The cows eat clover/grass forage, their dung goes into the biogas plant and the ferment residue goes back to the fields as fertiliser. There is a further side-effect: through the fermentation process, the cow manure doesn't smell so strongly so that when spreading it on the fields it is less pungent."

The plant produces up to 240 kW/h. Each year the plant also needs around 4,000 t grass silage. This is not seen as contrary to the natural cycle concept, the clover/grass playing an important role in the rotation. The share of dung in the substrate is about 40%. This and the grass have a lower energy content than maize so that minimally more substrate has to be fermented.

Heat and electricity produced from the biogas are supplied to the farm houses, the shop and the Bannsteinhof grain drying plant. Additional energy is supplied by photovoltaic panels on the steading

roof so that the farm is almost self-sufficient in this respect. But here, too, the Rufs ponder future developments. "From 2020, financial support for the first biogas plants comes to an end. However, payments should continue for plants that can feed electricity into the network at variable times. In other words, when it is most required. We are working here to achieve this capability by building a new heating/power production plant." «

- 1** Forage feed base comes from 80 ha permanent pasture as well as 100 ha of clover/grass grown in rotation.
- 2** Meat from the livestock is sold in the farm shop.
- 3** The biogas plant is fed with cow manure and clover/grass silage.
- 4** Layers are kept in mobile hen houses on hen runs sited around the steading.
- 5** Feed for the 35 sucklers, their followers and 20 pigs is all produced on the farm fields.

SPAIN

THE SPANISH A



Agricultural contractor Pedro Acebo and his father, also Pedro, are partners in forage feed production for many dairy farmers with their unconventional 12-month grass/maize model.

Rolling verdant hills, dense grass and leafy lucerne....is all this possible under Spain's hot sun? Yes! This can be found in northern Spain – where the milk comes from. But how much milk, and how long the supply will continue, depend on the price and particularly the rain.

LIGÄU



I know Spain in holiday mode, usually reliably sunny and dry. But where in the country are cows milked? And where is the necessary feed grown? I found out. It's an aspect of Spain I really didn't expect. After flying into Madrid, we took a car northwards, our target being the provinces of León and Cantabria about 400 km up the road. Our aim was to visit Spanish dairy farms. Surprise number one was the route there: over the whole distance no roadworks, perfect surfaces, no jams, the traffic flowed smoothly, admittedly limited to 120 kmh, but still always moving along nicely. Surprise number two: always a fully-working mobile 'phone network, no broken-off calls, even in southern Pyrenean villages. Quite different from some northern European countries ...

Our driver and guide is Alvaro Sanz. He is technical director of "farming agricola", an importer of farm machinery from companies such as Krone, Amazone, BvL, Bauer and others. The organisation employs 72 staff with headquarters in Palencia approx. 200 km north of Madrid. There are also two branch offices, one in the far north in Tineo and the other near Seville. Through 60 independent dealerships the company supplies machinery all over Spain and Portugal. Surprising and interesting for us: "farming agricola" does not sell tractors or combine harvesters and nor do nearly all the 60 dealerships it works with. Despite this, business is good. Alvaro Sanz let us know that more than half of his firm's annual turnover of a good 30 m Euro is made with Kone machinery. Total turnover for "farming agricola" in Portugal: around 3 m Euro. If Krone machinery represents the turnover-earner for the company, then there must be enough crops to mow, bale and chop. But where? There is still very little green to be seen.

DESERTING THE VILLAGES

We move smartly northwards up the A6 past hillocks with sparse woodland, mostly pine. In the distance, snow-capped peaks flash in the sunny blue skyline. Alvaro Sanz spent a year in Germany, speaks the language well and tells us about life in the Spanish countryside. For instance that here, in León, the population drift from the land is shockingly obvious. In many villages during the last 20 years the population has been reduced by three-quarters. Youngsters are attracted to the metropolises. The province León, one of 19 in the country, has 1.5 m inhabitants nowadays. And with the people moving away, the alteration in rural infrastructure increases at speed too. The traditional dividing of land between all inheriting children resulted in many small farms. Nowadays, these are being united again to make larger farms through rental agreements. On dairy farms every additional hectare offers the chance of growing more forage which leads to possibilities of more cows, always depending on there being enough rain.

After nearly 100 km, the landscape changes. It becomes green. No grass, but instead wheat and barley in southern León. Still another 100 km and we move into grass and forage crops. Mixed farms, i.e. arable and forage, tend to be unusual here, informs Alvaro Sanz. Specialisation is the rule, although forage can be arable too. For instance cereals or chickpeas for wholecrop silage.

The power of rain

Angel Ballasteros farms such a unit. He is second generation owner of a dairy business, helped by his family and three Bulgarian hands. He runs 600 head of cattle and 170 ha of forage – but no grassland. The dairy herd

is 240 strong with 200 in-milk at any time, 240 young stock and 120 feeding bulls. The milkers are housed in open-sided cubicle barns, the calves in huts. The farmer puts average milk yield at 11,000 l per cow and year with an average production lifetime of 2.4 lactations. Currently, milk price is 34 cents/litre. Production cost he puts at 33 c/l. For a secure return he reckons at least 38c/l price is required. Basic feed comes from his own fields, for instance triticale and barley for wholecrop silage as well as lucerne, chickpeas and a little forage maize, all ensiled. He harvests the forage in cooperation with another dairy farmer and they bill each other for the respective work. Angel Ballasteros does the mowing on both farms with his triple-mower combination from Krone, being paid 30 Euro/ha for the work on his partner's farm. He rents the 400 HP silage harvester from his partner for 100 Euro/ha, without driver. This cooperation system helps to reduce feed costs at least a little.

"Whether enough forage can be produced from year to year depends entirely on precipitation levels", he informs. Normally, these lie at an already sparse 400 mm per year. But in the preceding year the total was only 100 mm and he had to buy-in large amounts of lucerne and around 600 t of 70% dry matter maize grist at 180 Euro/t. He has only 10 ha under irrigation, and this piece of land is appropriately heavily exploited. In autumn, triticale and wheat are sown there and chopped for wholecrop silage in May before forage maize is drilled for autumn harvesting. The procedure repeats itself, with wheat and triticale going in again right after the maize is carted off. On the remaining land, even in normal 400 mm precipitation years, the forage year ends with cutting in May. Afterwards, the land lies fallow until drilling in autumn.

Because of this mix of less than generous milk price and feed costs fluctuating according to precipitation, it is difficult for Angel Ballasteros to envisage the future as secure and positive. His family, the quality livestock accommodation and his innate optimism all speak for a



sound future. However, he does look a little enviously on his colleagues further north who can rely on 800 mm rain per year.

Annual flat rate

Just 300 km further north, Pedro Acebo profits from exactly this reliable 800 mm. He is agricultural contractor and is also the second generation in charge, living and working in what for Spanish conditions can be called the green paradise of Cantabria, a province near the Atlantic. This countryside can be easily mistaken for the Allgäu Alpine foothills in Bavaria and proves one of the surprises of this journey through northern Spain.

The way here from Angel Ballasteros' dairy farm runs through Basque country and westwards into Cantabria. Alvaro Sanz describes the area we are driving through. In northern León, the rule is arable cropping with most farms around 400 ha and growing wheat and barley for combining, the straw packed into big square bales and sold to livestock producers. Almost always, this baling is done by contractors. The best wheat yields are carted home in the province of Navarra, southern Basque country, where non-irrigated land produces around 6t/ha.

Agricultural contractor Pedro Acebo looks happy. And he has good reason to be. After all, he's a forage harvesting specialist right in the middle of Spain's dedicated dairying area with as much forage growing as he could wish. With four full-time workers and one temporary hand, he is one



of the biggest agricultural contractors in Spain. “We are the only contractor in this region”, he underlines. Within a radius of 30 km he services around 60 dairy farms, each milking an average 80 cows. For these clients he undertakes the complete campaigns for grass and forage maize from drilling to harvest. Additionally, he does municipal work, sieves sand on the nearby Atlantic beaches and prunes roadside hedges.

His machinery fleet includes four tractors of 200 to 300 HP (1,200 hours/year), a Krone triple-mower combination, two Comprima Xtreme round balers, two wrappers, a BiG X 650 for grass and maize (10-row), a mounted crop sprayer with 1,200 l tank and 15 m boom, three tipper trailers with ram unloading, a 15 m³ slurry tanker with baffles and two maize drills.

Apart from hilly fields down to permanent grass, feed crops for many of his customers comprise around 30% forage maize and 70% arable grass. Cereals are not cultivated here. Grass gets four cuts, although these don't take place through the summer. To suit the special climate, Pedro Acebo offers his dairy farming customers an unusual, but nevertheless successful, service model. The first grass cut is carried out in October with the next two through the winter and the fourth and final cut taking place in May of the following year. Cultivation work then follows with maize drilled and then harvested in September before grass is drilled again. For all these jobs from October to October Pedro Acebo charges a flat rate of 1,300 Euro/ha. This system functions well and he's satisfied with it, says

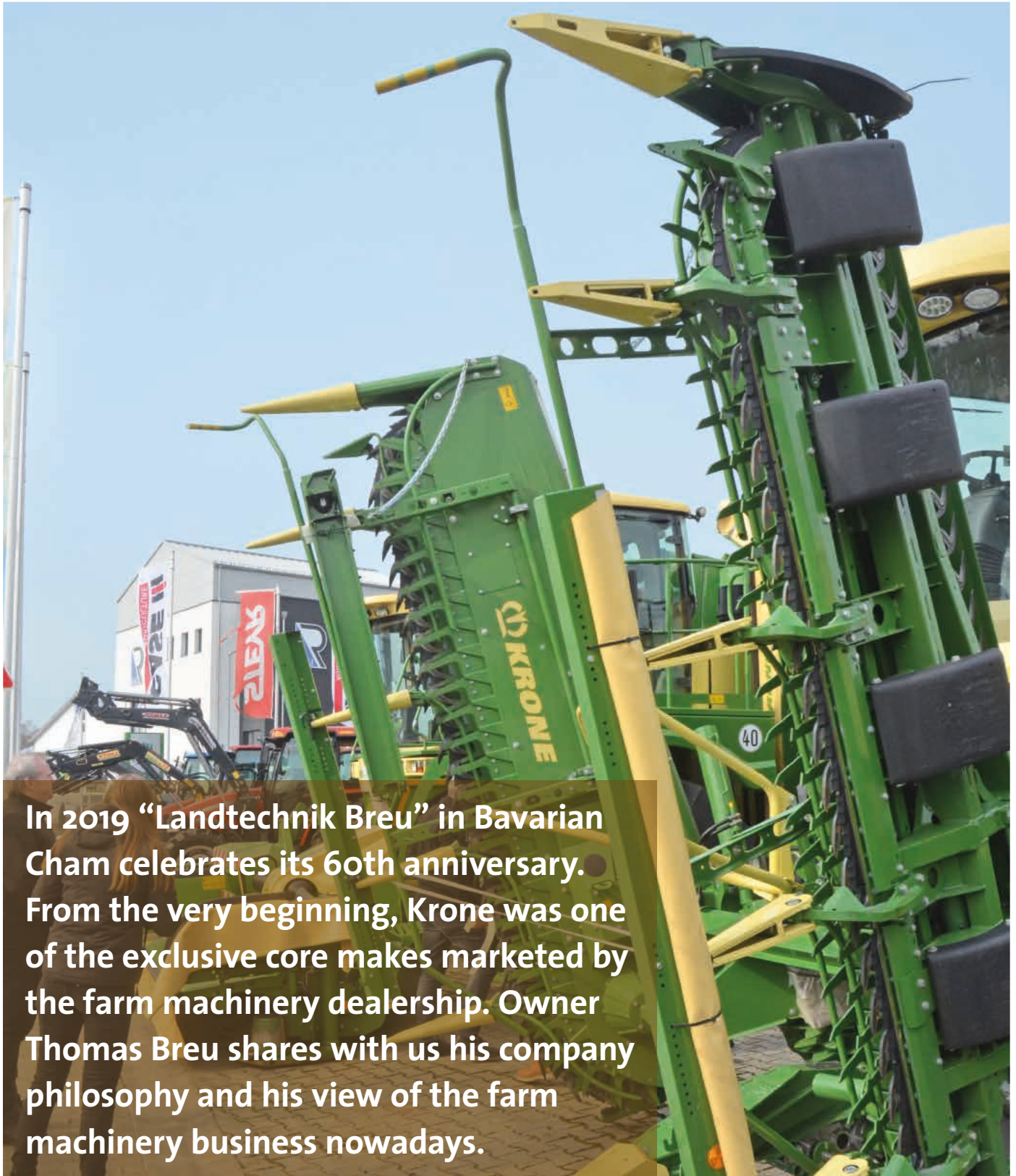


- 1** The verdant rolling landscape in Spain's high north remind us of the Bavarian Allgäu. There, forage grows and from that comes the milk.
- 2** The Ballasteros family: father Angel with wife Laura and both children Angel and Javier.
- 3** The forage feed for his 600-head cattle requires at least 400 mm rain per year. In the preceding season there fell only 100 mm and Angel Ballasteros had to buy-in lucerne and maize grist.

the contractor. In future, he reckons there will be fewer dairy farms with the survivors expanding accordingly and relying more on contractor input. “However, I do not want to expand at all costs. One reason is that it's hard to find good employees.” And fit workers he certainly needs in order to be able to reliably continue offering his flat-rate feed production model. «

LANDTECHNIK BREU

SUCCESSING TO



In 2019 “Landtechnik Breu” in Bavarian Cham celebrates its 60th anniversary. From the very beginning, Krone was one of the exclusive core makes marketed by the farm machinery dealership. Owner Thomas Breu shares with us his company philosophy and his view of the farm machinery business nowadays.

GETHER

Has the classical farm machinery dealership still a right to survive into the 21st century? Or is structural change, global players, direct sales, Internet shops and digitization all pushing the family-run specialist business increasingly to the side? “Definitely not”, emphasises Thomas Breu. “There’s no doubt we’re now experiencing a phase of profound change in this market that challenges all of us in many ways, and which we have to get to grips with. Complaining doesn’t help. My motto is: take an active part in shaping the future. Nevertheless, I’m convinced that there are values that have always been crucial and will continue to be so: The strength of family businesses through customer nearness and thus credibility regarding dealership competence. This relationship and trust must be right. In fact, a deserved good reputation is always more important than price”, emphasises Thomas Breu, owner of the firm with his family name in Cham.

The basis of this trust is without doubt the product range offered by a dealership. For instance, Landtechnik Breu has featured names such as Case and Krone in the farm machinery department since the firm’s founding by Thomas Breu’s father in 1959. “To me, it’s important that we offer our customers professional machinery from respected and high-quality manufacturers – machinery that we can be proud to represent as a specialist firm. A full range is desirable. But with proven machinery. Concentrating on a clear spectrum of manufacturers means we are in the position to confidently offer specialist competence in advice, sales and service.”



These men hold in their hands the reins of Breu Landtechnik (l. to r.): Thomas Breu (owner), Egon Klein (sales/manager after sales) and Josef Zangl (workshop manager).

INDIVIDUAL ADVICE

A further building block for best relationship between customer and dealership includes, says Thomas Breu, a future-oriented advisory policy. He counts professional farmers, agricultural contractors and machinery sharing organisations among his most important target groups. “Decisive here is finding exactly the right machine for the required job and therefore the best financial benefit for the individual customer. And sometimes we can also recommend something that the customer hadn’t considered. For instance, the possibility of another size of implement. Or an earlier than planned sale of the present machine”, says the dealership owner.

After all, he adds, it is not always sensible to “work a machine to death”. “Sometimes it is better to keep the resale value in mind. And the running repair bills as a machine gets older. Here, the specialist dealership has plenty data on costs and can offer the farmer a better overview of the situation. Naturally, we are always

happy to get jobs for our workshop or spare parts orders. But we never lose sight of the economic efficiency of machinery as far as the customer is concerned.”

BUSINESS HUB CHAM

A great help in this respect is the worldwide marketing network built-up by Thomas Breu since he took over the firm a good 20 years ago, a network that stretches much further afield than Europe. Here, the main aim is not only the resale of machinery taken in part exchange; more importantly, the dealer also buys used machinery especially chosen so that he can deliver a good range internationally. Thus in good years sometimes 50 – 60 tractors, or more, run through the books: more than the models taken in part-exchange for new models sold by the dealership. “However, there’s no doubt that our great passion is Krone machinery”, he reports, mentioning among other successes, the annual sales of ten BiG M machines, shipped to all points of the compass from the Cham hub.



A decisive part of service is excellent spare parts availability. Eric Bahle is in charge of the store in Cham.

The silage harvesters also achieve respectable sales figures. A throughflow of machines for service that has given the 15-head workshop team in the dealership invaluable experience concerning the make. "Currently in our sales region there are ten BiG M and ten BiG X machines running, and we service them all. Also, because the greater proportion of the bought-in used machines are technically overhauled in our workshop there is very little about the respective technology that we do not know about now. For this reason, I see us now as a real Krone competence centre for the south". Such competence is also appreciated by international buyers and telephone advice is called for from far further away than Bavaria.

PERFORMANCE HAS ITS PRICE

A good quality standard has to be paid for, however. Thomas Breu says this has to be propagated in local business deals, too. He

takes his mechanic hours payment calculation as example. "I am in the happy situation of having a team with skilled members that are uniformly highly qualified and just as highly motivated. This not only applies to the workshop, but also in all other departments. This standard of performance needs a just reward and this means the dealership needs the appropriate margins in order to pay them. I see 70 Euro net per master craftsman hour in agricultural engineering as not too high. After all, the service is exactly what the customer needs and we have given enormous sums out for training and further education courses to maintain these standards. Just look at the charges in the car sector", advises Thomas Breu who, alongside his farm machinery business also runs a car sales facility and is therefore in the position to make these comparisons 1:1.

"We have clear arguments for the service charges and are quite willing to back those up. In the end, however, our arguments are widely accepted, at least mainly", is his experience. On the same theme, Thomas Breu argues that other services, such as agricultural contracting work, would do well to consider charges to farmers. "What is 200 Euro per chopping hour with a silage harvester when considered against the real price of such a machine? What actually happens is that the contractor is partly paying for his own machinery operations while working hard for his customer. I am convinced that the future-oriented farmer also accepts this. In other countries, in Ireland for example, this has long been the case. There, farmers recognise that they cannot themselves invest further in mechanisation if they want to stay profitable. Therefore, even where I might appear to be damaging myself, I will not do business at any price. All of us in this sector have, after all, only a single chance if cash is to be earned", is his credo.

Further on the theme of cost pressures on the farmer and farm contractor, Thomas

Breu thinks ahead in other respects – and identifies possible parallels to other sectors that could be followed. For instance, in the methods now applied with commercial vehicles or private cars. "Who can say what alternatives to purchase and credit financing might not be much more sensible? Full service contracts represent a top-class option in farm machinery too, where one is really prepared to compare realistic full costs. Unfortunately, many customers apply completely wrong dimensions here, to their disadvantage. Even the sale of defined usage units of a machine is imaginable, for example leasing on a hectare basis instead of an hourly one. I think that suitable solutions are available. It's just that one must be ready to rethink the situation – and to consider everyone involved so that the calculations are financially viable for all. Here, the farmer still has many opportunities, but must be willing to consider them. I do believe that I can see such a rethink beginning. And that's why I see a very good future here for the agricultural machinery sector", concludes the Cham dealership owner. «

Under management of master craftsman Zangl, 14 mechanics and apprentices are employed in the workshop.



SENIOR MANAGEMENT EXTENDED

The Bernard Krone Holding SE & Co. KG expands its senior management team. Alongside current chairman of the board Alfons Veer (r.) and Bernard Krone (2nd from l. managing partner), now also Dr David Frink (2nd from r.) joins as Chief Financial Officer (CFO) of the Krone Group businesses. Dr Frink takes responsibility in the group for strategic and conceptual development and operational areas (finance and accounting, controlling, taxation, M&A, IT/organisation as well as legal affairs and human resources).

Through expanding the top management team, Krone adapts professionally to challenges facing the agricultural machinery and commercial vehicle divisions, especially with regard to the company's increasing internationalisation and expansion.

"We are very pleased to welcome such an acknowledged expert in the segments finance, production, logistics and IT as Dr Frink", said company owner Bernard Krone. Dr Frink was previously CFO at Gerry Weber International AG. Following training in banking, Rhineland-born Dr Frink studied business administration, graduating at the RWTH Aachen University, before joining Schiesser AG and then moving in 2009 to Gerry Weber International AG where he was appointed to the management board in charge of finance, production, logistics, IT and personnel. «



EASYCUT B 950 COLLECT

LIGHTER BUTTERFLY



At Agritechnica, Krone launched a butterfly mower combination without conditioner but with single swath collection via horizontal merger augers. Without a conditioner, the machine is substantially lighter and also less power is required

handling of forage with limited feed loss. Depending on crop and working conditions, working rates of up to 14 ha/h are possible. Notable ease of operation aspects come with the new butterfly mower combi-

nation. The driver can choose between three forage depositing systems: central swathing, extra wide distribution or partial width distribution, all selected easily and comfortably from the tractor seat and on the move. Robust 45 cm diameter merger augers are positioned directly behind the mower bar and transport forage loss-free and without damage to the centre. In combination with the EasyCut F 320 front-mounted mower, a very uniform swath can be formed. Exemplary following of field surface is guaranteed by the DuoGrip mounting system. On top of this, the mower combination is equipped with steplessly adjustable hydraulic suspension. «

Agricultural technology 2025

LOOK INTO THE FU

Since 1997 Dr Gottfried Eikel is deputy chief editor of the specialist farm machinery magazine “profi” and is numbered among the most renowned experts in the agricultural machinery scene. We would like to learn about this man’s assessment over future developments in this respect. Will machinery become ever-larger? Or might there be conflicting trends?



TURE

We meet Dr Gottfried Eikel in a relaxed atmosphere for an interview in his office within the “profi” editorial department in Münster. The 1989-grounded magazine belongs to the Landwirtschaftsverlag and with an approximate circulation of just under 70,000 is the most successful farm machinery magazine in Germany. Currently, editorial staff numbers 22, conducting machinery tests, producing video reports and managing the magazine’s online presence.

XtraBlatt: Over the last decades, machinery performance continually increased. Will this still continue in the future?

Dr Gottfried Eikel: *On the whole, dimensions will be unable to increase markedly. At least as far as Germany is concerned and, in the broader sense, the rest of Europe. We are approaching the vehicle dimension permissible on our highways. Wider cutterbars and sprayer booms may be conceivable. But we have to recognise that only broader and faster doesn’t necessarily solve efficacy and efficiency problems. Slowly we approach the limits whereby it might perhaps be more sensible to apply two large machines instead of one mega-machine.*

XtraBlatt: In the specialist media there are already concepts based on drones or swarm technology. Is this a trend that in future we’ll also see on our fields?

Dr Eikel: *Drones and swarm technologies will, especially in Germany, first of all have a difficult time because of legal restrictions. In the short and medium term, developments will therefore probably tend to move towards an intelligent, above all efficient and soil-protecting management of machines. To this we can count the automatic headland turning, automatic adjustment of working depths, more precise applications of plant nutrients as well as the online utilisation of satellite or sensor data. Keyword drones: nowadays we already have many drone applications that are used in practice including distribution of trichogramma wasps, an-*



Dr Gottfried Eikel has been in the editorial team of “profi” magazine for over 26 years.

imal rescue, crop or livestock surveillance, as well as documentation of wild animal or hail damage to crops.

XtraBlatt: When will autonomic farm machinery enter practical farming?

Dr Eikel: *Most likely would be the initiation of such machinery where repetitive work has to be carried out regularly in confined areas, such as feeding livestock. This technology will, however, change agricultural machinery usage at least where work is carried out without large amounts of input material and harvested produce. Mechanical weed control is, for example, a process where autonomic vehicles with intelligent sensor systems will very certainly be used. The industry currently works on exciting systems with intelligent algorithms. Fundamentally, all “simple” tasks such as grubbing, ploughing, plantation care etc, could be tackled with autonomous tractors, or is already featuring this approach. We will have to wait probably a little time before silage harvester, combine or beet harvester drivers lose their jobs through such developments.*

XtraBlatt: In the car industry there is much discussion currently over electric drive.

Dr Eikel: *Nowadays we can already imagine this technology with small tractors for winter clearing work in cities. A battery-driven BiG X self-propelled silage harvester we will probably not see, even 20 years ahead. Where high performance is required, only diesel-electric power will function.*

An electric-powered aggregate and implements such as fertiliser spreaders we can already believe in. That is, they



are out working now. Hereto, numerous applications have been started over ten years ago, for example Krone with its electricity-powered EasyCollect maize header. Advantages with this implement included its efficiency and operating precision.

XtraBlatt: What innovations can we expect in forage harvesting?

Dr Eikel: In future perhaps the mower will record forage quality using sensor systems such as NIRS and thus enable site-specific harvesting. Additionally, with mowing we could envisage lighter and more flexible cutter bars that can follow the field surface contours still better. This would only function with new drives, such as an electric motor for every mower disc. The protection of wild animals is more and more a concern of many customers and the general public. Electronic solutions such as heat detectors and drones still have to be further developed in order to offer good service as wildlife rescue tools. Wide working width turners are in fashion. The turner is, and will remain, a “fire brigade” implement that enables the farmer to achieve good feed quality with regard to dry matter content. Here, however, there’s no real new development to expect. But with swathing there’s definitely potential for avoiding for-

age contamination. Perhaps the belt swather will score points in future for the silage harvest. As part of the harvest chain the swather could certainly communicate with the subsequent harvesting chain and be able to send details on the size of swath, the location and the required harvesting capacity per hour.

XtraBlatt: Will the capacity of the forage harvesting chain also continue to increase?

Dr Eikel: We believe that the performance of the silage harvester and self-loading wagon is more or less fully exploited. – at least as far as the throughput, i.e. the harvesting performance in t/ha is concerned. A theoretical throughput, without waiting times, of 180 to over 200 t/h fresh product is standard nowadays for a 650 HP harvester. A 1000 HP harvester manages accordingly more. But what would happen then on the silage clamp? Naturally, further performance increases are theoretically possible through larger harvester aggregates and bigger engines – but not with the present permitted dimensions for legal travelling on European roads, and also not from the point of view of acceptable silage quality. Here, performance increases are only imaginable through increasing the campaign performance through careful operational planning with optimisation

» BUT WITH SWATHING THERE’S DEFINITELY POTENTIAL FOR AVOIDING FORAGE CONTAMINATION.«

Dr. Gottfried Eikel



and, above all, application of intelligent logistic concepts. For better operational reliability of machinery, sensors could be developed for early warning systems, warning of technical breakdowns before these occur.

XtraBlatt: Which tractor power output will be the top class in 2025?

Dr Eikel: 20 years ago, this was 200 HP, 10 years ago 300 HP. Nowadays, the power summit is 400 HP and tomorrow will be 500 HP. We are certain that series tractors will, sometime in the future, break the 1000 HP barrier.

XtraBlatt: How would we manage to get all that power onto the ground?

Dr Eikel: The trend towards tracks is clearly recognisable, especially for tractors in the top class. But who would have believed ten years ago that we would have standard tyres measuring 2.35 m in height? Why should everything stop expanding now? That also applies, by the way, to self-propelled machines such as silage harvesters and combines. But where there are difficult working conditions, as was dramatically demonstrated once again in the previous year, once again smaller, lighter machinery and transport vehicles are required.

XtraBlatt: Documentation and data management. What will officialdom require from farmers in the future?

- 1** Electrical drive for a header was already tested by Krone over ten years ago at Munich Technical University as part of a university project.
- 2** Still larger is no longer possible. The highway laws in Europe determine limits to dimensions and weight of agricultural machinery.
- 3** In future, perhaps the mower can record forage quality per NIRS – and enable site-specific harvesting.

Dr Eikel: The authorities will demand as much as they think they will get. Mandatory documentation demand will doubtlessly increase still further. Unfortunately, looking at the present political situation, agriculture can expect that in the future there will be an online portal where, from plant protection material, over dunging through to harvest including the composition of the products, every application or action will have to be logged from farm machine terminal into the official portal. Then the portal will consider the prevailing weather, the crop condition and the field. It will automatically judge whether conditions are right and practical – or whether the amount of fertiliser previously applied lies over the permitted limit. «

SERVICE & PARTS MEETING 2018

WITH HEART AND UNDERSTANDING



The first machine is sold by the sales people, every further machine by the service department. And this is a rule that applies more than ever. To thank the dealership service colleagues fittingly for their great commitment, Krone invited them to Spelle – and their partners too.

The harvesting window becomes increasingly smaller. And this means many machines operate right through the season, quasi without pause. So it's not surprising if, now and again, faults or breakdowns occur. The large numbers of service staff are well prepared and get ready for overtime and 7-day weeks – a commitment that is a matter of course for many dedicated personnel in farm machinery dealerships everywhere. Added to time pressure comes technical stress because farm machinery gets increasingly complex. It demands ever more know-how from service personnel – for instance for fault diagnosis or repair.

“During the harvest season the spare parts and service staff are under fire non-stop and, especially during such times, private life often comes too short. Additionally, there's always the possibility of not being welcomed with open arms out in the field as the longed-for specialist. Instead, you get the brunt of the customer's displeasure as the first representative of the firm. At times like this it's especially good to know that someone back home has special understanding and sympathy to offer for the stressful work.” With these words during the excellent Krone Service & Parts Meeting, Wolfgang Jung, managing director Service & Parts described the sort of situation in which many of the 350 attending guests could envisage themselves.

Workshop specialists and those responsible for spare parts in Krone dealerships travelled from all over Germany to the event. And most of them had brought along their partners who had also been explicitly invited. “In conversation we usually say ‘ladies first’ and only far too seldom do we remind ourselves that it is especially the ladies that play a central role in the family and also manage extremely successfully their own small – in the true sense of the description – family enterprise”, continued Wolfgang Jung in his welcoming address. “For this reason, it is a special pleasure for us that you have come to visit our meeting with your partner. Because you, too, are due our thanks.”

Over two days Krone arranged an exciting programme. Alongside news concerning the spare parts department, information from customer service, for instance about the Service Centre or Krone diagnostics, was information about available training and courses. All guests joined a factory tour and were able to experience live how quality made in Spelle is created. Over and above this, there was a varied alternative programme in which the importance of service and spare parts was gone into. Additionally in the daily plan were various presentations on the themes nutrition, Smart Home and Augmented Reality.

The event ended with an evening meal for all participants. The guests took advantage of the opportunity to mix with one another, exchange experiences, to network or simply enjoy discussions. “I believe and hope that you agree with me – service with heart and understanding makes all the difference – technically, but above all in human terms. That is the spirit of Krone – and I am very sure – the spirit of you too”, concluded Wolfgang Jung. A good partnership with each other, summed up the participants, proves itself first in difficult times – although weathering such situations is at the same time a decisive maxim for joint success. <<

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