

THE FURROW

THE MAGAZINE OF
JOHN DEERE



Putting down sustainable roots

What is regenerative agriculture
and what can it achieve?

»Highly reliable and of premium quality«

TEXT: LAURA TURRINI PHOTO: VALENTINA ROSSI INSTAGRAM: MASTER_FLY

Valentina Rossi is a young Italian farmer from the province of Reggio Emilia. Together with her mother and uncles, she keeps 150 dairy cows producing milk for Parmesan cheese production. Various crops and animal feed are grown on around 50ha. She is passionate about agriculture. "I love the connection between people, the freedom in my daily work and, last but not least, the machines – a great passion of mine," she adds. The farm's fleet includes three John Deere tractors, a 3040, 6400 and 6610, plus a 592 round baler. "The 3040 dates from the 1980s and despite its 20,000 hours has never given us any problems, just like the other John Deere machines," says Valentina. "They are extremely reliable and of the highest quality." But her favourite is the John Deere 6400; compact, versatile, and easy to handle, equipped with every comfort, good visibility and a tireless engine. And she has ambitions for her fleet: "I dream of having an 8RX. It is unparalleled in both design and technical features." ■



MASTHEAD

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BEHIND THE SCENES

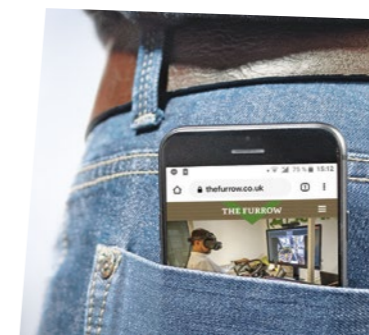
Take a look at the editorial office and the **STORIES** behind the magazine.

After studying animal breeding, Akhrorjon Dehqonboyev worked as an agricultural intern on a dairy farm in Upper Franconia, not far from the home village of **FURROW** **AUTHOR PETRA JACOB SACHS.** The young Uzbek connects our author with his German teacher, Gulzoda Khidirova, who works at the Tashkent agricultural university, where young aspiring Uzbek farmers learn German. This is the beginning of a **JOURNEY TO A COUNTRY WITH EXTREMELY HELPFUL, HOSPITAL AND RESPECTFUL PEOPLE.** A team consisting of Elmurod (husband of German teacher Gulzoda), Marhabo (interpreter) and Feruz (chauffeur) accompanies the author on a 600km journey through the country. You can read more on **PAGE 20.**



99.7%

is the **DELIVERY RELIABILITY** of the European parts distribution centre in Bruchsal. The employees there provide **FARMERS ALL OVER EUROPE WITH SPARE PARTS QUICKLY AND RELIABLY.** In the interview, manager Matthias Steiner gives insights into an impressive logistics operation and explains how all the little gears in the supply chain have to match, to ensure everything runs smoothly. You can read more from **PAGE 26** onwards.



You can find even more stories about exciting solutions and ideas in agriculture in our **ONLINE MAGAZINE.** There you can read various articles about the production of the two millionth tractor in our Mannheim factory and find out how John Deere ensures excellent production quality.



www.thefurrow.co.uk

CONTENTS

- 2 Oh, My Deere!**
Valentina, a young farmer from Italy, keeps dairy cows, produces Parmesan cheese, and runs three John Deere tractors.
- 6 What is regenerative agriculture?**
Growers committed to this path provide an insight into its key principles.
- 12 Regenerative agriculture at a glance**
An overview on regenerative agriculture in practice.
- 15 Bee-lieve in in change**
Subscription-style beekeeping is creating healthy pollinator populations.
- 16 Farming blackcurrants regeneratively**
A new research project is aiming to reduce greenhouse gas emissions during fruit production.
- 18 Monitoring biodiversity**
Trying to quantify biodiversity at Hemsworth Farm near Wimborne, Dorset.
- 20 White Gold**
Uzbekistan set out to change the bad reputation of cotton and has achieved a great deal in just a few years.
- 24 Seeds in the eternal ice**
The Global Crop Diversity Trust preserves the genetic diversity of agricultural crops.
- 26 Keeping customers' machines running**
Supplying customers throughout Europe with spare parts quickly and reliably.
- 30 Efficient and versatile**
This is how farmers work with the 750A seed drill.
- 34 Perfect for smaller dairy farms**
The new 5M tractor offers visibility, maneuverability, comfort, and high pulling power.
- 35 Camelina – gold of pleasure**
Today the camelina plant shows off its superpowers in agriculture.

26
»Here, people
and technology
work together
harmoniously.«

MATTHIAS STEINER

20



12



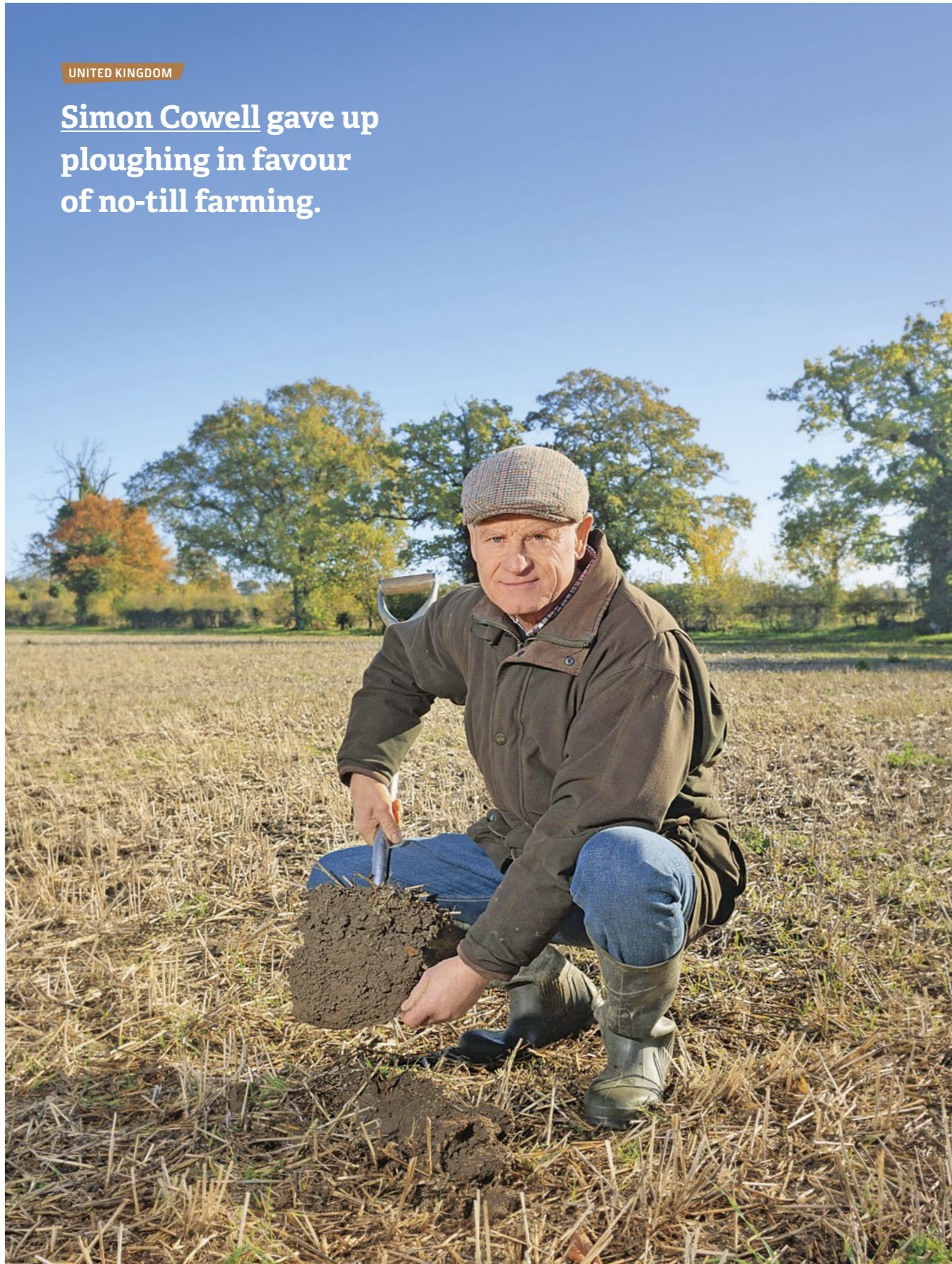
Goals and
practices

16

6

UNITED KINGDOM

Simon Cowell gave up ploughing in favour of no-till farming.



WHAT IS REGENERATIVE AGRICULTURE?

Regenerative agriculture has become a hot topic for discussion, but a consistent definition of this production model has yet to emerge. *The Furrow* met growers committed to this path to get an idea of its key principles.

TEXT: ANNA BOWEN, LUIS RUIZ GARCÍA, DIERK JENSEN, ADRIEN LEROY PHOTOS: DIERK JENSEN, DIEGO PELÁEZ, TIM SCRIVENER

The figures speak for themselves: By 2030, Nestlé plans to source 50% of its main ingredients, by volume, from “regenerative” farms. McCain wants to switch all of its potato-growing fields to the system; Pepsi, more-or-less all of its suppliers’ land; and Mondelez, 100% of its European wheat fields. Danone France, meanwhile, plans to have made the switch by 2025.

Marketing, alongside the industry’s concerns for the resilience of its supply base; shareholder pressure – irrespective of the reasons why – and the increasing interest of the food processing industry will change farming practices. But in contrast to other labels, there is currently no regulatory definition for regenerative agriculture. A European tour around several farms committed to this model of production highlights a common purpose, but also a very varied approach.

FIVE MAJOR AXIS

The UK is a good place to start. After all, the concept originated here and some of the

guiding principles were first formulated some 20 years ago. These are: Not turning over the soil, permanent ground cover, maintaining a living root system, crop diversity, and combining livestock and crops. In the UK, Simon Cowell was drawn to the movement right from the beginning. At St Lawrence in Essex, he farms 162ha of coastal land, including marshland soils which he previously found difficult to make into a good seedbed. This encouraged him to give up on ploughing in favour of direct drilling.

Another of Simon’s goals was to reduce his input costs. “I got interested in soil and how it works, which then led to reductions in fertiliser and fungicide use,” he reports. Switching to foliar fertiliser enabled him to reduce his nitrogen requirement by around 30%, and he has stopped using phosphate and potash altogether, relying on biological processes to make these nutrients available. He applies biostimulants to ensure his crops remain healthy and vigorous and has trialled methods like spraying molasses to enhance soil biology.



Simon Cowell was able to reduce nitrogen use by 30% (up to 57-66kg N/ha saved in winter wheat).

The soil organic matter content is one indicator that the farmer monitors closely: Average levels have increased from 4% to 6.5% since switching to regen practices. “I may not see any further increases in organic matter percentage, but I hope the organic matter will increase deeper in the soil, which will lead to a

higher total mass of humus.” However, organic matter is not made entirely from carbon. It also ties up other nutrients, which means that there is a cost to it. But this is balanced by a more active soil biology and an increase in fertility, in the farmer’s eyes.

For Simon, the principles set out at the start must be adapted to the actual situation on-farm. In his case, permanent ground cover and integrating livestock are not suited to his system. “The soil doesn’t dry enough to allow spring drilling into a crop. We would need to kill it off in November, at a time when it is generally too wet to enter the field,” he says.

“And for similar reasons I haven’t introduced livestock. The soil is too heavy for winter grazing. And in this part of the world there aren’t many animals around.” Instead, he relies on crop rotation to improve soil health and structure. “I no longer have a set rotation plan, but make choices for each field individually,” reveals Simon, who grows wheat, barley, oats, beans, linseed and lucerne. “Lucerne is an important crop for us as it stays in place for three years and allows the field to recover. It is harvested three times a year and stays dormant over the winter.”

CARING ABOUT COVER

Farming 240ha in Oise, a department north of Paris, Emeric Duchesne has been trialling regenerative agriculture for three years as part of the ARA-Blé programme. This is run jointly by the Val France co-operative and McDonalds, with support from the Earthworm foundation. Emeric sees regenerative agriculture as a marketing name given to ecological or conservation agriculture. “It’s a

FRANCE

Emeric Duchesne introduced multi-species cover crops.



Beside his own 240ha, Emeric Duchesne (left) also farms 900ha as a contractor. “I want to use this opportunity to demonstrate to my customers the agronomic interest of regenerative practices.”

form of production that, above all, takes account of the soil.” At ARA-Blé, the focus is on regional supply chains, reducing input use and storing carbon to increase profitability. While Emeric currently grows only 20ha of wheat under the programme, it has an impact on his entire crop rotation planning (winter wheat, rapeseed, peas, sugar beet and flax).

“After harvest we systematically sow cover crops, without ploughing. We sow directly after combining, to keep the moisture in the soil for rapid crop emergence and development.” But his approach is not dogmatic. What counts are the results: Before sugar beet, which is grown on a five-year rotation, the farmer allows himself to plough. “I see it like having a toolbox, which enables us to plough when needed, particularly after a wet winter. We mainly plough for sugar beet and try to forget about it for the other crops.”

For cover crop cultivation, Emeric has put together a mixture of six to seven varieties – phacelia to produce biomass to suppress weeds, China radish or sunflower to loosen the soil and vetch and broad beans to fertilise the soil. “The mixture is diverse and its composition remains the same. Nevertheless, the plant population develops differently from year to year.”

Although there has not been enough time to fully evaluate the benefits, some have already emerged. “On August 30 in 40°C heat, there is no life-protecting shadow in the tilled wheat fields, while in the field next to them, under the vegetation cover, it’s only 15°C and

The seeds for the cover mix (sunflower, sorghum, niger, radish, vetch, faba bean and phacelia) were financed by the ARA-blé project.



Thies Paulsen keeps a 120-head dairy herd at Dreisdorf in northern Germany.

GERMANY

Thies Paulsen has reduced his pesticide use and relies on livestock integration.

earthworms, insects and birds are present.” This is one of the key lessons learned from the programme, and Emeric plans to continue refining his blend of cover varieties. “Today, we think of cover crops as a separate crop on the farm. We put just as much effort into achieving good results as we do with wheat or rapeseed.”

Looking after the soil requires modern machinery. “This allows us to do things that were unthinkable 20 years ago. In particular, the development of direct drills and ever better tyres help us to protect the soil.” The farm has recently purchased a strip-till drill.

Emeric admits that the level of investment can be daunting, but contrasts this with the decline in input costs. He is not necessarily hoping for an increase in wheat yields, but rather for more consistent harvests. In an area with highly productive soils, it is the uncertainties of the climate that pose the greatest challenges. “With healthy soils we will be more resilient in both wet and dry years.”

CATTLE AND REDUCING PESTICIDES

At Dreisdorf, in northern Germany, dairy farmer Thies Paulsen, who switched to regenerative farming back in 2018, is focusing on combining livestock and crop production. He is convinced that it is impossible to save the climate without cows. His cattle are cherished; 15 litres a day are fed to the calves, and

Thies Paulsen (below) gave up using plant growth regulators and hopes to do without herbicides in future.



the rest of the milk is sold. On average, his cows stop producing milk at the age of six.

Grazing plays an important role in the health of his soil: “The cows’ saliva passes on information to the soil life that is important for the rotting process. It is also important that plants are trampled onto the ground to provide enough organic matter. And finally, there is the manure with its quickly available nitrogen, which stimulates soil life as well.” Another advantage lies in the farm’s slurry, to which Thies adds microbiological additives to increase nutrient availability.

The 140ha are divided, more or less equally, between arable and pasture land. In 2023, Thies’ crop rotation included beans, winter

barley, red clover silage, grain maize, spring wheat, winter triticale and maize silage. Like the other farmers, he limits soil movement, having direct drilled for three years, and ensures he looks after his cover crops. However, at present, the system only works with the use of pesticides – albeit at a minimal dose.

Thies is experimenting for the future: He harvested 6.5t/ha of spring wheat on one field last summer. The straw was removed, then the catch crop mixture was sown, with winter triticale drilled into the emerging catch crops on September 25. Five days later he used glyphosate, primarily to control grass brome, but left one strip untreated. The observation: The triticale survived under nitrogen-collecting cover crops as well as spring wheat regrowth and brome. “Perhaps we can work without glyphosate in the future,” he says happily.

But forgoing fungicide treatments when there is infection at the ear stage – and consequently losing a good crop of grain – contradicts his view of agriculture. Thies sees himself at the interface between conventional and organic agriculture. “Perhaps we as regenerative farmers can build a bridge between these two camps.” But first it’s about developing a sustainable system that sequesters carbon and retains moisture in the soil. “We not only have a CO₂ problem, but also a water problem,” he warns.

STORING WATER

In Spain, Manuel Urquiza, farmer and agricultural engineer, advises farms on regenerative agriculture on behalf of the association Alvelal. Even he finds it hard to define regenerative agriculture. He considers it a holistic approach: “Farming that helps improve the quality of food, while preserving and enhancing the soil and countryside. And it must also be profitable.”

In his case, tillage is minimal, using different harrows. To encourage fungi and beneficial bacteria and increase organic matter, a compost made from olive waste and manure is applied as fresh as possible. Here, in the plateaus of Grenada, mainly nuts (almonds and pistachios) and wine are grown.

Among permanent crops, plant cover, whether sown or wild, is just as important. The aim is to achieve as long-lasting cover as possible, even if it will inevitably disappear in the hot summer months with the greatest drought. Therefore, to get the maximum benefit from the residue, it is mowed in a timely manner.

Like his colleagues, Manuel sees many connecting points between conventional and organic approaches in regenerative agriculture. Proof of this is the attention that is given to biodiversity, which plays an important role in controlling both pollution and pests, with the help of benefi-



According to Manuel Urquiza (above), reversing the process of desertification and agricultural abandonment is a key goal of regen ag.



Harvesting regen ag almonds: The improved nutrient profile suggests interesting prospects for the agri-food sector.

cial insects, mites, and useful nematodes. Alvelal supports the planting of “living” hedges consisting of fennel, rosemary, and lavender. A study by the University of Almeria shows more than a 30% increase in biodiversity in regenerative rural areas, helping to reduce the impact of parasites and diseases.

However, the main problem in this part of southern Europe is without doubt the chronic lack of water: 250mm falls across the region each year, often concentrated into just a few weeks. Therefore, special attention is given to rainwater storage, either in ponds or in the soil. Infiltration trenches, water-retaining borders, and ponds have been

built. “The methods used have to be appropriate to the financial resources available to farmers,” notes Manuel. “On large farms, we create reservoirs and terraces.”

One of the frequently cited advantages of regen agriculture is the nutrient composition of the end products. Manuel has no doubt about that. “Analysis has shown that microbial enrichment increases both the polyphenol content in the grapes and the bioactive components in the almonds.” This gives hope that such added value will attract broader interest. In addition to reducing inputs and improving resilience, adding value is also necessary to finance the change promised by the food industry. ■

SPAIN

Manuel Urquiza plants hedges and implements water-saving measures.



The Alvelal association implements large-scale measures, like creating terraces.

“THE OBJECTIVE IS TO REGENERATE SOILS AND SURFACE ECOSYSTEMS”

Prof Jean-Pierre Sarthou is a specialist in agro-ecological systems and professor at the Toulouse school of agricultural and life sciences. He talked to The Furrow about the definition of regenerative agriculture and its future prospects.

INTERVIEW: ADRIEN LEROY PHOTO: JEAN-PIERRE SARTHOU

Where does the concept of regenerative agriculture come from?

It is already quite old and was first used by the Rodale Institute in the US – a private organic farming research centre – in the 1980s. Originally, it was a branch of the organic movement.

How is it defined today?

Like so-called conservation agriculture, the concept of regenerative agriculture aims to regenerate the soil by minimising disturbances. In addition, it also seeks to restore ecosystem functions on the soil surface in order to promote beneficial insects. In practice, however, the definition remains vague. There is no scientific consensus or guideline that would enable the establishment of a label, for example.

Could this be a problem for scaling up?

Big industrial agri-food companies are adopting a regeneration narrative on a large scale because it is a very good selling point. We can only welcome this trend. It will allow many farmers to change their farming practices to benefit their soils. On the other hand, the vagueness of the concept in terms of practical implementation causes me some concern. There is a risk of a lack of support from consumers.

Could you elaborate?

In part, regenerative agriculture is a city dweller’s dream because it has its roots in the organic farming movement. However, given the strong criticism of glyphosate by some non-specialists, I

expect that part of the population will have misconceptions, which could lead to a backlash. This means that we must expect two things from the industry: First, that they define clear guidelines so as not to come under suspicion of greenwashing; and second, that they communicate honestly with the public about the use of herbicides. Beyond that, the question of the further development of organic and regenerative agriculture remains.

Is it possible to adopt minimum tillage with no chemical use?

This is currently not possible in temperate climates. Even on a global scale, I have only ever seen one field where this worked; a test site in Cambodia. But I am optimistic that in the long term we will be able to develop no-till farming systems in our latitudes that can do without synthetic inputs. This is an important agronomic goal. ■

Jean-Pierre Sarthou is a professor of crop production and agro-ecology at the University of Toulouse in France.



TEXT: ADRIEN LEROY
ILLUSTRATION: DIE MAGAZINIKER

INFOGRAPHIC: DEFINING REGENERATIVE AGRICULTURE

What does regen Ag look like in practice? In the absence of any regulatory or scientific definition, it can be difficult to pin down. Overview of the main aims and technical indicators.



A WIDE RANGE OF APPROACHES

Wageningen University in the Netherlands provides an analysis of how the term is used in existing documentation. Starting from a rather technical, soil-focused common core, it is incorporating a growing number of aims to meet more and more ambitious definitions.

D

FARM INCOME AND ATTRACTIVE WORKING CONDITIONS

B

CLIMATE, BIODIVERSITY IN GENERAL, WATER QUALITY AND AVAILABILITY

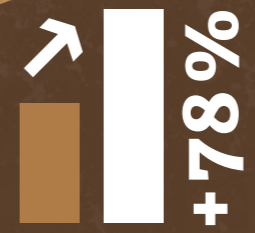
C

OPTIMISED USE OF RESOURCES, NUTRIENT RECYCLING

A

SOIL HEALTH AND SOIL BIODIVERSITY

SOURCES: REGENERATIVE AGRICULTURE: MERGING FARMING AND NATURAL RESOURCE CONSERVATION PROFITABLY, CLAIRE LACANNE; UNIVERSITY OF MINNESOTA TWIN CITIES, FEBRUARY 2018; MICHEL DURU, INRAE (DURING AN AGRI-SUD-OUEST INNOVATION CONFERENCE, SIMA 2021); WWW.BAYER.COM
SOURCES: REGENERATIVE AGRICULTURE IN EUROPE, MARK MANSHANDEN, WAGENINGE UNIVERSITY, APRIL 2023
SOURCES: WAGENINGEN UNIVERSITY, GABE BROWN



A study by the University of Minnesota compared the results of 20 American farms using conventional or regenerative systems. In the latter, yield was, on average, 29% lower, and profitability was 78% higher. The factors contributing to the better margin included input reductions and better market opportunities.



Bayer has set itself the goal of supporting the development of regen Ag on 160 million hectares by 2035 (an area 40 times the size of Switzerland).

EXAMPLE OF WORKING STEPS FOR WHEAT ACROSS ONE GROWING SEASON

Conventional system VS regenerative system (Ireland; advanced stage of adoption: > 6 years).

Month	Conventional	Regenerative
Oct.	Soil preparation	Mulching
Nov.	Sowing	Compost application
Dec.	Crop protection	Direct drilling
Jan.	Fertilizer	
Feb.	Crop protection	
March	Fertilizer	
Apr.	Crop protection	Crop protection
May	Fertilizer	Fertilizer
June	Crop protection	Crop protection
July	Harvest	Harvest
Aug.	Stubble ploughing	Cover crop seeding
Sep.	Tillage	Tillage

IN PRACTICE, FIVE PRINCIPLES ARE OFTEN PRIORITISED...

MINIMISE SOIL DISTURBANCE
Avoid physical and chemical disruption



KEEP THE SOIL COVERED
Fight erosion, evaporation and weeds



INTEGRATE LIVESTOCK
Imitate natural systems that function in symbiosis with animals

MAXIMISE CROP DIVERSITY
In time and space, with the aim of increasing the resilience of the system



MAINTAIN LIVING ROOTS
Provide the soil with nutrients all year round



Animal welfare standards
FAIR TRADING STANDARDS
Perennial crop
Mulching

Organic farming standards

Compost, manure, biochar

STEPLESS GOES ELECTRIC



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*Available for the 370 and 410 models of 8R, 8RT and 8RX tractors

BEE-LIEVE IN CHANGE

TEXT: NATALIE NOBLE PHOTO: KNIGHT'S BEEKEEPING

One third of the UK's bee population has disappeared in the past decade – and it's a problem. A marker of a healthy ecosystem, bees are equipped to pollinate around 80% of the UK's flowers and plants, including many food crops. Without bees the countryside would look a lot bleaker and reliance on imports would be greater – compromising food security, net zero ambitions, and wellbeing.

Concerned about the UK bee population and biodiversity, Martin Knight founded a subscription-style beekeeping business. The concept is simple: The subscriber pays a monthly fee, and Martin and his team do the rest – building the hives, caring for the bees, and telling their story. In return, subscribers get honey and wax, regular updates and photos from the hive, and can even visit their bees on wellbeing experience days. And it doesn't stop there. Farmers are now working with Martin to create space for subscribers' hives on wildflower meadows and field margins. This generates around £2,500/year for the farmer, while creating healthy pollinator populations and an opportunity to positively engage with the public. ■



Farmer Rosie Begg (right) is working with agronomist Harriet Prosser (left) to grow blackcurrants regeneratively.



Diverse alleyway swards improve soil health and boost biodiversity.



The project seeks to increase carbon sequestration in the soil.

REGENERATIVE ROOTS FOR RIBENA

Farming blackcurrants regeneratively for Ribena, Rosie Begg is in the driving seat of a new research project which aims to reduce greenhouse gas emissions during fruit production. Marianne Curtis finds out more.

TEXT: MARIANNE CURTIS PHOTOS: SUNTORY

Ribena is an iconic British brand, and its owner, Suntory, has launched a new project looking at how regenerative farming practices can reduce greenhouse gas emissions.

The project, which also involves the University of East Anglia and the Soil Ecology Laboratory, is taking place across most of Rosie Begg's 60ha of blackcurrant production at Gorgate Farm in Norfolk.

The aim is to reduce scope three emissions (indirect emissions that occur throughout a company's value chain) from blackcurrant production and improve soil health, so that the soil can support plant resilience and sequester more carbon.

TREASURED MEMORIES

Second generation blackcurrant grower and research lead, Rosie says her family has grown blackcurrants for 24 years, although the farm has grown them since the 1950s. "My dad took on the Ribena contract in 1995. He very sadly died when I was 16. I have memories of being on the back of the harvester during school holidays – being a moody teenager at the time it didn't feel very special but now I treasure those memories on the farm with him."

Blackcurrant varieties grown on the farm include Gairn, Starav, Hope, Alder, Tirran and Klibreck. It also grows Victoria plums and arable crops.

SUSTAINABLE FARMING

Both Rosie and her husband Alex are dedicated to creating a sustainable, resilient farming business fit for the future, so Gorgate felt like a natural fit to host the pilot project. "We are passionate about the opportunities for nature-friendly food production, habitat restoration and engaging local people on the importance of this transition," says Rosie.

Before the project started, sustainable practices were already a key feature at the farm. "We are trialling different plants along the blackcurrant alleyways – yarrow to help reduce snails and phacelia to encourage pollinators and reduce aphids. By increasing the insect population, we also hope to increase bird numbers," says Rosie. "We have a Higher Level Countryside Stewardship Scheme agreement and are

»My vision is to make our farm a resilient business, with all decision-making being data-driven.«

ROSIE BEGG

part of the Upper Wensum Cluster farm group – a landscape scale conservation project involving 22 farmers in the river valley."

Challenging climatic and economic conditions over recent growing seasons have led Rosie to investigate and adopt regenerative farming practices. "It's thrilling to be able to bring in national experts and researchers to aid this ambition, and to be so supported by our customer," she says. "Collaborating with Suntory's global team will enable us to share our learnings and learn from regenerative projects all over the world."

This project represents a shift away from more conventional practices. The principles are backed by credible science but have yet to be commercially tested in perennial fruit systems, says Harriet Prosser, Suntory's agronomist. "We're not just tackling greenhouse gas emissions, we're looking to increase the amount of life in our soil, in turn improving soil health and fertility, which benefits the blackcurrant itself."

Soil is the most important ecosystem, adds Rosie. "It's linked to every function on the planet. By focusing on soil biology restoration, we can allow natural processes to support blackcurrant production. My vision is to make our farm a resilient, diverse, exemplary business, with all decision-making being data-driven." ■

THE PROJECT

The project aims to minimise external inputs while improving soil health, plant nutrition and environmental protection through:

- Sap sampling to better understand and optimise blackcurrant plant nutrition. Macro and micro-nutrient imbalances affect plant resilience, making them more susceptible to pests and diseases
- Using novel and organic inputs to replace conventional inputs
- Creating diverse alleyway swards to feed the soil
- Improving soil health and carbon sequestration with compost extracts to restore soil microbiology.

SOURCING BLACKCURRANTS FOR RIBENA

- Suntory Beverage and Food GB & Ireland sources blackcurrants for Ribena from 34 farms, with which it has a longstanding relationship. The farms are located around the UK. The factory is based in Coleford in the Forest of Dean, Gloucestershire
- Suntory's growers harvest 10,000t of blackcurrants from 1,600ha each year
- Ribena is made from a unique blend of 10 different blackcurrant varieties, bred with the support of the James Hutton Institute, which has been developing new varieties for Ribena since 1956
- The blackcurrant harvest typically runs from early July to mid-August.

MONITORING BIODIVERSITY

Biodiversity is a hot topic in agriculture, with farmers working hard not only to increase the flora and fauna but to quantify it. Ruth Wills speaks to one farmer involved in a technology-led project hoping to achieve this.

TEXT: RUTH WILLS PHOTOS: AGRI-EPI, SOPHIE ALEXANDER

Sophie Alexander is passionate about nature-friendly farming, and is taking part in a project using artificial intelligence (AI) to identify the range of wildlife on her farm.

She been involved with Agri-EPI, an Innovate UK-funded body, as a satellite farm for five years. “They wanted to have demonstration farms for precision technology and AI orientated innovations,” says Sophie.

The 485ha of Hemsworth Farm near Wimborne, Dorset, is organic with arable crops and a recently established dairy herd. “We’ve been doing biodiversity surveys for the past four years, and we commissioned an ecologist from Dorset Wildlife Trust – Hamish Murray, to come and do annual surveys at the farm to build up a picture of what we have,” she adds.

“I was particularly interested in doing that because we are organic, and you hear that organic systems tend to have 30-40% more abundance and diversity than conventional systems – but I really wanted to demonstrate that for myself.”

In 2022, Agri-EPI asked to run a biodiversity monitoring project using AI on the farm, which Sophie welcomed as a way to ground truth the findings from the devices with Hamish’s surveys. “One of the other attractions of the project was that



Anna Galloway works for AgriSound, which is running trials at Sophie Alexander’s Hemsworth Farm in Dorset.



AgriSound detects pollinators, particularly honeybees and bumble bees, using algorithms to translate the wing beat speed and time spent on the plant.



»We've been doing biodiversity surveys.«

SOPHIE ALEXANDER

dairy farms are often accused of having low biodiversity but we have found that to be the opposite; I think it helps having flowering species in our multi-species swards.”

THE PROJECT

There are three devices deployed on the farm. “One is AgriSound, which detects pollinators, particularly honeybees and bumble bees,” explains Sophie.

“The devices have mostly been used in horticultural situations, either inside or in very defined areas; so doing this on a farm scale is new. The devices translate the air displacement, speed of the wing beat and the time spent on the plant.

“Then the algorithms translate that into what bee it is. There are 50 devices all over the farm in different fields, and the information is sent in real time. It also overlays the weather.”

Another device is Chirrup, which specialises in birdsong. “The devices are left up for three weeks to a month at the height of the singing season – it’s recording 24/7. It found around 64 different types of bird, and around 15 of those were on the red list – so that’s really gratifying.”

The third technology is Pollenize. “The group from Pollenize come and walk around the farm and in minute detail, photograph every living thing they come across –

whether it’s a caterpillar or a flowering plant, it all goes onto an app – iNaturalist,” says Sophie.

“It has been really interesting to see how they build value into it, everything is GPS located and timestamped, as is AgriSound. When it’s uploaded onto the app, there is a whole community of specialists and lay people, corroborating the identification – so it’s like peer-reviewed identification.

BIODIVERSITY IMPROVEMENT

“They’re also able to find the gaps – for example if we’re missing a certain species, they will give recommendations like planting strips of sunflowers.”

The project will compare the findings from the devices against Hamish’s findings. “Hamish has yet to do his analysis and the report gathering the findings from the devices has not yet been done,” says Sophie. “But this year Hamish has found 400 species that haven’t been previously identified on the farm for the past four years.

“It’s interesting to get involved in these projects, and at some point, they might pay real dividends,” she adds. “I think something that will come out of this is how these devices can help the move towards people both needing but also wanting to quantify biodiversity.

“It’s a real pleasure to understand what’s happening in the area you look after.”

UZBEKISTAN'S WHITE GOLD

It was once a much-praised country on the Silk Road, but then came along cotton and a bad reputation. Uzbekistan set out to change that – and has achieved a great deal in just a few years.

TEXT AND PHOTOS: PETRA JACOB SACHS

We're doing alright here, says farmer Shavkat Khamidov with his whole face lighting up and gold teeth flashing from his mouth.

Shavkat is responsible for growing cotton on a farm that evolved out of the former Kommunizm collective farm structure, which under Communist rule saw multiple farmers run their holdings as joint enterprises. On the farm, 40ha are planted to cotton and 200ha to wheat – both grown in rotation. There is also a livestock enterprise with around 100 Jaydari cattle for the production of meat and milk. The

farm is located on the outskirts of the district capital, Namangan, in the fertile Ferghana Valley. "The conditions here are great; the soil, the climate, and the water supply are all good," he enthuses.

Cotton is grown extensively and dominates the landscape in this region 300km south-east of the Uzbek capital, Tashkent.

Before visiting the cotton fields, Shavkat invites us to a table for some freshly baked bread and a bowl of yoghurt. But he is apologetic for there not being enough time to slaughter a sheep – Uzbeks are known for taking hospitality very seriously.

Joined by director Abdujabbor Hayidov, and with food consumed, they trudge ahead to the first cotton field, 11ha in size and situated behind a stand of trees.

The two men disappear into the almost man-high bushes, on which only a few white flocks of cotton are still hanging in early November.

Today, Shavkat's farm, where he first started out as an agronomist under the Kommunizm collective farm structure, is part of the Tashbulak cluster (Toshbuloq-TEKS cluster). His work focuses on the cotton growing, while other companies in the cluster are responsible for cotton cleaning, processing, and marketing.

Harvest time in the region is between mid-September and the end of October. From the 40ha of cotton, around 6t/ha are expected to be grown and harvested by hand by 40 full-time employees and 80-100 seasonal workers.

Harvest workers are paid the equivalent of two US dollars per kilogramme of picked cotton, and up to \$2.50/kg at the end of the season, when the bushes are no longer as full. On average, a person manages to pick

Cotton growing in the Ferghana Valley: Shavkat Khamidov (left) and his colleague Abdujabbor Hayidov in the field.



»The conditions here are great; the soil, the climate, and the water are all good.«

SHAVKAT KHAMIDOV



The Agricultural University of Tashkent also has a cotton research centre. Cotton bushes are on display in the lobby area of the university.



Uzbeks are well-known for their hospitality. At the edge of the cotton field, author Petra Jacob Sachs is invited to enjoy freshly baked bread and yoghurt.



Insights from the train: Women in colourful dresses and headscarves walk through the rows picking off the last few flocks.



Director Sanjar Khalilov shows off what his company now produces from Uzbek cotton.

around 20kg/day. Harvesting takes place from 9am to 5pm; a lot of hours bending down in high temperatures, reaching up to 40°C into September.

A COMPLEX HISTORY

Cotton was once the most important crop in Uzbekistan. Until its independence in 1992, the country belonged to the Soviet Union and produced almost 70% of its cotton, making it the second most important cotton producer after the USA.

Cotton was called “white gold” because a lot of money could be made from it. However, it was at the expense of the people and the environment, with the Soviet government forcing the country to grow cotton through collective agriculture and monocultures. In a region that was predominantly desert, water was a limiting factor for cotton production, and so the two major rivers, Amudarya and Syrdarya, which carried water to the Aral Sea, were diverted. Thousands of kilometres of trenches and canals were built, but quickly the Aral Sea began to dry out and the country’s important fishing industry suffered and collapsed. This and the extensive use of chemicals, as well as a focus on growing cotton instead of other crops, led to poverty, disease and environmental pollution.

But even after independence from the Soviet Union, cotton growing was stipulated and regulated by the state, and cotton still accounted for 90% of the exports at that time. When it came to harvest time, the country came to

a standstill and forced labour in the fields; school children, students, nurses and teachers had to work, even small children. International criticism and the boycott of Uzbek cotton followed.

In 2016, a new president, Shavkat Mirziyoyev, came to power. He introduced reforms, and abolished forced labour. In 2022, the International Labour Organisation (ILO) of the United Nations announced that the Uzbek cotton industry was free of child and forced labour.

LIBERALISATION AND CLUSTERS

With a liberalised cotton market, the old structure was out and replaced by a new one – the Cotton Cluster pilot programme. Launched in 2017, initially in a small area, the clusters were groups of individuals, companies and investors – including several international players like Russia, the USA, and Singapore – who provided capital and procured means of production for the farmers.

Instead of working for the state, the farms now worked within a cluster. Today, these cotton textile clusters dominate the Uzbek cotton market. According to the World Bank, there were just 15 clusters which farmed 16% of the cotton growing area in 2018, and by 2020, this figure had risen to 92 clusters farming 88%.

PRIDE OF UZBEK

In September 2022, President Mirziyoyev officially announced that the quota system for farmers had been abolished.

Uzbek cotton would no longer be exported and would be processed to produce yarn or textiles almost entirely in the country, a further milestone in the country’s history. Instead of exporting to Russia, Turkey, or Pakistan, the cotton market was able to add value and create jobs at home.

A good example of this revolution is a textile factory on the north-eastern outskirts of Namangan. “Bekmen” is emblazoned in oversized letters above the modern fashion shop’s window, while inside, the shop overflows with shirts, coats, and suits. More than 40 different products are manufactured on site, according to director Sanjar Khalilov during a tour of the company. A courtyard with fruit trees leads to the tailoring shop, where around 40 women sit at sewing machines; working on coats and stuffing cotton fibres into lined winter jackets. Production here is not only for the Uzbek market, but also for foreign customers.

Since 2020, they have also been working with a German company which produces high-quality workwear, explains director Sanjar, not without a certain sense of pride. “They like the hand-picked cotton because it is of better quality and cleaner than the machine-picked cotton, even if it costs \$20 more per tonne.”

Uzbek cotton is better than Egyptian cotton, adds Bachrom Izbasarov, dean and professor at the Renaissance University of Tashkent.

Out of conviction, he wears shirts made from Uzbek cotton. At just 12 years old was when his father first took him to the cotton farm he managed, and finding a keen interest in cotton growing at such a young age, he went on to study agricultural sciences, writing his doctorate on the subject of cotton. Thereafter, he went and worked as a director on his father’s farm for 10 years.

Today, Professor Izbasarov concentrates on educating young people at university, and works as a fruit farmer on the side. Around eight years ago, he planted 100ha of apple trees on his farm, but his biggest wish now is to get back to what he loves and start growing cotton.

“And my cotton harvesting fleet would not be complete without a John Deere harvester,” he adds. ■



Bachrom Izbasarov, dean and professor at the Renaissance University of Tashkent and part-time farmer.



Professor Bachrom Izbasarov would like to get into cotton growing, but only with a John Deere harvester.

SEEDS IN THE ETERNAL ICE

The Global Crop Diversity Trust preserves the genetic diversity of agricultural crops. Seeds are stored in a gigantic vault in Norway. Managing director Stefan Schmitz explains who benefits from this.

INTERVIEW: ANNINA WERTHS PHOTO: GLOBAL CROP DIVERSITY TRUST

The seeds are stored in this gigantic vault on a mountain on the Norwegian island of Spitsbergen.

What is the Crop Trust's mission?

In almost every country there is a place where people collect, preserve and maintain the seeds of all crop varieties – these are so-called seed banks. We work together with these agencies and store backup duplicates of these seeds in the vault in Spitsbergen.

Why is it important to have a seed vault?

We can keep the seeds really safe in the vault and hope that this treasure of our culture will not be lost. It is located inside a mountain massif and is sealed at a constant -18°C. Suppose a war breaks out or a volcano erupts – there would be little or nothing left on the ground in any given area to feed us humans. We have a good stock of seeds in the vault for such cases.

What is the importance of preserving the genetic diversity of crops for farmers?

Seed diversity is something that humans themselves have created over the past 12,000 years. Today, there are more than 200,000 wheat varieties, over 100,000 rice varieties and thousands of potato varieties worldwide. Ever since agriculture has existed, man has made use of this diversity to cope with changing environmental conditions. These include the climate, diseases and pests, or simply the location, which had to change. What man has created to date is an



Stefan Schmitz is managing director of the international organisation Global Crop Diversity Trust.

almost infinite array of answers to different natural challenges. Following agricultural industrialisation, this diversity was less needed. High-yielding varieties and standardised products were and are in demand. After all, this is the basis of our prosperity and food security. But we know that it is still important to be prepared for climate changes or new plant diseases.

How does the seed retain its germination capacity?

Every two years or so, we take out a part of the seed sample, sow the seeds in the respective home location and then see whether they germinate. If 95% of the seeds germinate, then we assume that the stored seeds are still capable of germination. However, if the

germination capacity decreases, the samples must be replaced. After all, what good are seeds that are biologically dead?

Why are these conserved seeds relevant to meet the challenges of climate change?

In principle, evolution does not occur when a single individual adapts, but through mutation and selection across generations. With 20 to 30 different varieties, it is highly likely that there will be one that is suitable for a particular soil.

What examples of successful co-operation with farmers are there?

Morocco, for example, has used the wild relative of durum wheat to cultivate a type of wheat that can cope very well with drought. In Peru, a new variety of potato has been successfully bred with wild relatives, which is largely resistant to late blight. This makes it possible to use fewer pesticides. ◆



The detailed interview read online: thefurrow.co.uk/seed-vault



6R 250

"JOHN DEERE WINS THE BATTLE OF THE TITANS"¹

"MOST FUEL-EFFICIENT IN THE PRACTICAL TRANSPORT MEASUREMENTS"²

"OUR FAVOURITE IN THE FIELD AND FOR TRANSPORT"¹

"ADVANCED GUIDANCE AND OFF-BOARD SOLUTIONS"¹

"THE BEST CAB INTERIOR"²

NOTHING RUNS LIKE A DEERE

 **JOHN DEERE**



In their most comprehensive tractor multi-test to date, TREKKER MAGAZINE (09 and 10/2023) compared seven tractors in the 300 hp category: Claas Axion 870, Deutz-Fahr 8280 TTV, John Deere 6R 250, Massey Ferguson 8S.285, McCormick X8.631, New Holland T7.300 and Valtra Q285. The 6R 250 model not only won, but also received many enthusiastic statements.

¹ TREKKER 09/2023 and 10/2023 (www.trekkermagazine.nl)

² PROF112/2023 (www.profi.de) Profi magazine took over excerpts from the tractor multi-test "TREKKER" article

The automated high-bay warehouse guarantees the rapid processing of thousands of parts.



Mr Steiner, how do the people at EPDC ensure customer satisfaction?

It's quite simple really. We know that our spare parts availability, combined with the service expertise of our sales partners, is the key to customer satisfaction. This is particularly noticeable during harvest time, when time is of the essence because a storm may be on the horizon. Our team is aware that our customers (farmers and contractors) cannot work properly without a fast and reliable supply of spare parts. That's why we work here 363 days a year to ensure that all spare parts can be delivered as quickly as possible.

How do you ensure the availability of spare parts is fast and reliable?

During harvest, for example, machine breakdown orders play a special role. We can order the required parts and prepare them for dispatch within 45 minutes. A sophisticated data flow that links automated warehousing and transportation systems with human jobs makes this possible. In this context, I often speak of a harmony between people and technology.

Not every order has to be delivered immediately. Nevertheless, we are continuously working on improving our internal processes, from receiving parts to storage and delivery. Data analysis help us to find the optimum storage location for each part. In addition, the tried-and-tested interaction between people and technology is being continuously improved in order to move the parts through the warehouse more efficiently.

We can handle parts that are to be sent by air freight in a separate area. This saves valuable delivery time for the customer. The fact that we keep spare parts in stock

for at least 15 years after a series is discontinued makes owners of older machines feel even more secure.

Around 350,000 different parts are stored in the EPDC. How do you plan how many parts of a certain type need to be in stock?

We use technology and data analysis here too – for example, through the intelligent use of telemetry data from our networked machines. The knowledge of the machine population, on top of statistical evaluations, enables us to make even more accurate demand forecasts. This allows us to ensure that the right parts are stored at the EPDC – and this also applies in principle to our sales partners' stocks. This proactive approach is a unique selling point in our industry and should ensure that a required spare part is available from the sales partner and can be picked up directly by the customer from there.

What current challenges in the logistics sector do you encounter in the EPDC and how do you deal with them?

We are struggling with the shortage of skilled workers. We are working on offering even more appealing workplaces, for example by improving ergonomics for employees and offering more part-time positions. In particular, we want to encourage more women to work at the EPDC.

We are also trying to counter the rise in logistics costs – from customs and diesel prices to packaging prices. Thanks to good planning, we are now able to consolidate 96% of our retailers' orders so that we only need one delivery instead of three, for example. This saves costs and CO₂, so it also contributes to sustainability.

»OUR WORK KEEPS OUR CUSTOMERS' MACHINES RUNNING«

John Deere's European Parts Distribution Centre (EPDC) supplies customers throughout Europe with spare parts quickly and reliably. Managing Director Matthias Steiner explains how people and technology ensure satisfied customers and how logistics are becoming more efficient and sustainable.

INTERVIEW: JULIAN STUTZ PHOTOS: STEFAN LONGIN



»Here, people and technology work together harmoniously.«

MATTHIAS STEINER

Matthias Steiner has led the EPDC since autumn 2023.



JOHN DEERE

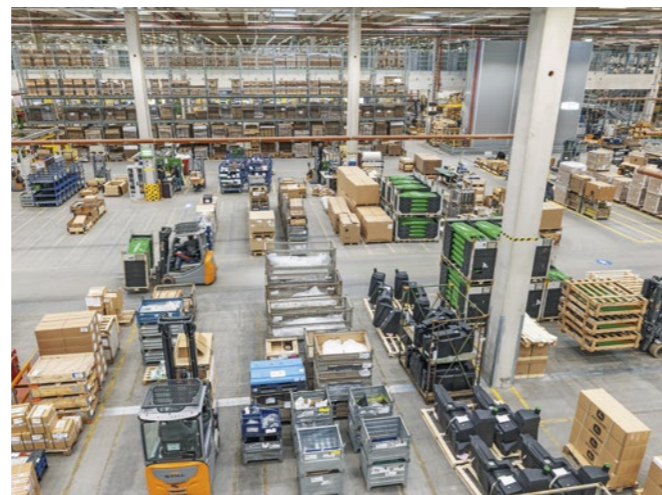
NOTHING RUNS LIKE A DEERE

5M PANORAMIC LOADER POWERHOUSE

PASSION FOR FARMING



In the high-frequency zone, employees put together many small parts for shipping.



In the incoming goods department, shipments from 45 trucks are processed every day.

That's a key word, sustainability: What is the EPDC doing here to contribute?

We are one of the first John Deere sites to have a large photovoltaic system on the roof here at Bruchsal and have had it for 10 years now. This covers 12% of our on-site energy consumption. In addition, we generate a further 18% of electricity and all the heat for our production processes and heating systems from renewable sources at the site.

We are reducing the amount of plastic packaging in the filling material for our shipments and instead use paper, which is processed in special machines as transport protection. We have also introduced packaging with 30% grass content for smaller deliveries. They use less water and energy in production, which means they have a significantly better carbon footprint.

In addition to the activities at the site, we can also positively influence the supply chain through good planning. This allows us to reduce short-term deliveries through better forecasting. This means fewer deliveries by air and therefore lower emissions for each delivery.

You have been managing the EPDC since autumn 2023. What were your first impressions?

In my last John Deere role as customer service manager, I had already come into contact with the EPDC. In this respect, I was already quite familiar with some of the topics here and knew how well we were positioned.

What impressed me were the complexity of the processes, the high degree of automation we have and how the many small cogs interlock. I also immediately noticed the good atmosphere in the workforce of over 650 employees. The co-operation is marked by a pronounced focus on the customer, very respectful interactions with one another and a high level of professionalism and experience in completing the tasks. In this context, the Works Council always speaks of the Bruchsal spirit. It describes the family atmosphere at the location very well. ■

THE EPDC IN FIGURES

350,000

different types of parts are stored in the EPDC.

If necessary, it can take as little as

45 minutes

until the parts for a broken-down machine order are picked and ready for dispatch.

99.7%

is the delivery reliability of the EPDC. Even at the height of the coronavirus pandemic, this figure never fell below 99%.



Compact and light yet powerful, the 5M excels in manoeuvrability and brings top-notch loader skills to your farm. Its panoramic roof delivers exceptional views, while fingertip shifting guarantees smooth road travel.

Meet the 5M, your ultimate farming companion for everything you do. See it today at your local dealer.

EFFICIENT AND VERSATILE: THIS IS HOW FARMERS WORK WITH THE 750A SEED DRILL

With hundreds (FRE & GER: thousands in Europe) of units sold since it was launched in the mid '90s, it's impossible to find anyone who uses the John Deere 750A who has a bad thing to say. Jonathan Riley asked John Deere territory manager for East Anglia, David Purdy, what makes the drill so popular, and spoke to three growers for an insight into why the 750A is a kingpin in their kit-lists.

TEXT: JONATHAN RILEY PHOTOS: AGRI-HUB, JOHN DEERE



The six-metre version of the 750A can easily be pulled by a 150 hp tractor.

Whether its beans or rape, on clay or sand, across open hectares or in trial plots, the accurate and versatile

John Deere 750A drill has won many fans. David Purdy puts its popularity down to a number of factors.

Chief among those is the accuracy of seed placement across a wide range of soil-types and conditions. One of the reasons for that is that the depth control wheel is positioned next to the coulter rather than behind or in front of it on other drills, explains David.

The seed, then, can be placed precisely at the set depth and is less influenced by stones or clods as in systems where the wheel is mounted before or after the coulter. The opener disc; canted at seven degrees, and the press wheel provide good slot closure and the vital seed-to-soil contact needed for uniform emergence. Recently the drill has seen a renaissance in sales as growers moved into min- and no-till systems, says David. "It's nimbler than heftier alternatives so compaction is re-

The depth control wheel right next to the disc coulter ensures precise seed placement.



duced, suiting it well to low-disturbance setups," he explains.

The 750A can, therefore, operate over an extended season, getting on to land earlier in the spring and later into the autumn, adding to its versatility. A further advantage of its scale is in potential fuel savings. The six-metre version of the 750A can easily be pulled by

a 150hp tractor unit which means fuel costs are kept to a minimum. "Added to that, it's simple to maintain and reliable, virtually bombproof in fact, which cuts out downtime at crucial stages in the season," David says.

These factors are all key to producers who already own a 750A. Here, some of those give their views on what it's like to live with it.



DAVID WALSTON, THRIPLLOW FARM

The farm also has grassland for horses and woodland areas. Significant areas are under a Countryside Stewardship Scheme higher tier agreement and the farm has taken part in the pilot Sustainable Farming Initiative.

David and the team at Thriplow went fully no-till in 2016 and have been using multispecies cover crops including vetch, linseed, buckwheat and phacelia since 2011. David wanted a disc drill to be able to drill into cover crop residues. To find out which drill worked best, he carried out a trial of the 750A, along with two others, before making a purchase. While on heavier land there was only a 50kg/ha yield difference across the three machines, on lighter land wheat sown with the John Deere 750A produced 0.8t/ha (8%)

more grain. That was a result of a higher plant establishment, with 50-80 more plants/sq m than the other two drills on lighter land, and 120-130/sq m on heavier soil.

The 750A was chosen and seven years on, it is still the mainstay of the drilling operation at Thriplow Farm. "We use it to drill about 75% to 80% of the crops including winter wheat, beans, spring oats and spring barley," David says. "It copes easily with 50oha of winter crops in the autumn, it's robust and we get good establishment when drilling into crop residue."

Although only a relatively small amount of drilling is into taller cover crops, yields have been better than the wider settings on the farm's other drill.

ARABLE:
900 ha

CROPS:
Winter wheat, winter barley,
winter beans, spring oats,
sugar beet and
sometimes oilseed rape.

RAINFALL:
550 mm
a year

SOIL:
medium-light to
medium-heavy, chalky

»It's simple to maintain and reliable, virtually bombproof in fact.«

DAVID WALSTON



ARABLE:
800 ha

CROPS:
Winter wheat, spring barley, oilseed rape and both vining and combinable peas with Countryside Stewardship Scheme option AB15: Two-year sown legume fallow

RAINFALL:
724 mm
a year

SOIL:
Largely, sandy loam

JAMES GOODLEY, GOODLEY FARM SERVICES

James bought a six-metre 750A about six years ago with part-funding from a Leader grant during the farm's transition from a plough-based setup, through min-till to a no-till system. In a careful selection process, James tried a number of other no-till drills on the market.

"The reason we chose the 750A was because every other drill we tried required relatively high horsepower," he says. "And, because of the weight of the drills on a heavily cultivated or ploughed field, the others quickly buried themselves, while the 750A didn't."

While getting the soils right for no-till, the farm was able to use the 750A for the whole transitional period. Now the farm is fully no-till and the 750A places seed very effectively in that system.

"We drill through stubbles and sometimes chase the combine with a disc harrow then drill directly into that," says James. "The disc harrow is more of a chitting and trash management tool rather than for cultivation, so we're only pulling it at about 20mm depth."

The drill has enabled the business to expand the conservation agriculture area and

can get seeds in at the optimum time – there is less pressure on timing because the 6m drill provides extra capacity, James notes.

The farm uses biological controls to tackle fungal diseases and the 750A has been fitted with a liquid applicator kit supplied by TT Engineering. Liquid containing the microbials is pumped from a tank attached to the front of the drill through pipes and into the slot. This avoids coating the seed – a process that would inhibit growth.

"Our aim is to maximise the health and vigour of the crops while reducing dependency on 'bags and bottles' of artificial fertiliser and chemical controls," James says.

Another attribute of the drill is that it's highly adaptable. Everything is put through the 750A – grain, AB15 mixture, peas. "The other reason I love the drill is its reliability," says James. "It has the Accord seeding unit which has been around for ever, and while the depth adjustments and coulter management are included, mechanically it is very straightforward. We have had no breakdowns in six years, and it drills in every condition, which makes life a hell of a lot easier."

WILL SMITH, CAMBRIDGE

Above all, arable trial work at NIAB's Cambridge research station requires accurate seed placement and consistent establishment from its drill. Research agronomist, Will Smith, is completing a PhD in interrow cultivation while he manages weed, seed and regenerative agriculture trials.

The 750A is used for direct drill trials. "It works really well for this because we get good seed placement and the reliable cropping we need," Will says. "It is just so good at placing seed, at a more consistent slot depth than any other drill we have tried." Slot closure is also a key feature – the 750A provides excellent seed-to-soil contact. "When we have looked at other machines the slot closure is less than perfect. But the 750A is versatile too; it is not just a one-trick pony. We can use it on light or heavy land, even in wet conditions, and the seed still goes in accurately," he adds.

Plot sizes range from 2mx12m for statutory seed variety work, to wider acreages for larger scale studies, with about 30ha devoted to research issues like tramline effects and

digestate use. The team at NIAB also appreciates the working width. "The drill offers us a useful working width at 16.7cm row spacing, which is a good balance between the traditional 12.5cm and the much wider 25cm that is becoming more common," notes Will.

"The width is right to make the most of working with an interrow hoe, so you are making the most of crop competition, alongside the ability to hoe a reasonable amount of your ground." The relatively compact size for a trailed drill is another feature that appeals. "For trials work the 750A is big at 6m, but it is still manoeuvrable enough to turn it around in 12m; with some of the bigger units we couldn't do that. "The 750A makes our work easier. We have a fantastic arrangement, whereby John Deere provide us with a unit which sits with us at Cambridge for the whole season," he adds. "It is a huge asset which allows us to cut out some key variables that would affect trial data, and so provides us with reliable results which are vital for the sustainability of the arable sector." ■



ARABLE:
600 ha

CROPS:
Autumn- and spring-sown cereals, oilseed rape, grass leys

RAINFALL:
568 mm
a year

SOIL:
Heavy clays, some lighter land, silty clay loam



NOTHING RUNS LIKE A DEERE

5M ENGINEERED FOR HIGH-VALUE CROP SUCCESS

PASSION FOR FARMING



Compact and light, with up to 135 hp, our 5M is at home in vineyards and orchards like no other. Whether pruning, spraying, harvesting, or hauling, the 5M's design and hydraulic capacity are perfect for all your high-value crop tasks.

Meet the 5M, your ultimate farming companion for everything you do. See it today at your local dealer.

AS104301ENG_IE

PERFECT FOR SMALLER DAIRY FARMS

The new 5M tractor from John Deere offers visibility, manoeuvrability, comfort and high pulling power for the road, field and yard. Product marketing manager **MARTIN NOLTE** provides an overview of the most important improvements – and explains which applications the tractor is particularly suitable for.

INTERVIEW: KARL-HEINRICH SCHLEEF PHOTO: JOHN DEERE

Martin, what is the most important news about the 5M series?

For the 2024 model year, the 5M series is getting a new top model, the 5130M with 135 maximum hp. This gives the tractor even more power for demanding tasks on the farm but also for transport work or when mowing with a front-rear combination. We also offer two new transmission options: PowrQuad PLUS and Powr8. They enable comfortable gear changes without any interruption in traction. The Powr8's EcoShift function reduces the engine speed of the new 5M, leading to reduced fuel consumption while providing the necessary power for transport work of up to 40km/h.

Why is the 5M particularly suitable as a farmyard tractor?

On the one hand, there are its compact dimensions. With a height of less than 2.65m and a turning radius of just 4.10m, this tractor is ideal for narrow barns. In addition, the sloping hood, in combination with the large panoramic roof, offers excellent visibility. This is particularly important for front loader work. Since such a tractor is often used by customers in front of the feed mixer wagon and therefore has to be ready for use at all times, we now offer JDLink on the 5M tractors. This means that connected support services are also available for proactive support from a John Deere dealer.

Are there other intelligent solutions for the 5M besides JDLink?

On the new 5M we integrated the AutoTrac guidance system directly into the dashboard, like on the 6M where it is in the corner posts. All you need is preparation for AutoTrac and a StarFire receiver. The tracking function increases precision and efficiency by minimising overlaps when working in fields and grassland. An upgrade to additional intelligent functions with a G5 Universal Display is possible at any time. ■



»The 5M is particularly suitable for small dairy farms.«

MARTIN NOLTE



The 5130M with AutoTrac is ideal for mowing work.

Camelina – Gold of pleasure [Camelina sativa]

TEXT: CAROLIN SCHLEGEL ILLUSTRATION: GERNOT WALTER

In the 15th century it was dismissed as a weed, but today the camelina plant shows off its superpowers in agriculture: It is a basis for animal feed, fuel and high-quality oils.

CO-CROPPING

It grows up to 120cm high, making it a good growing partner for peas, spring wheat or oats.



FRUIT

After the pale-yellow petals bloom, a loose cluster with pods forms, in which up to 16 seeds ripen.

FEED

Camelina pellets made from leftover oil production are a protein-rich feed.



LIFESPAN

With a growing season of 110 days, camelina is suitable as a cover crop.



CONTENT RICH

The seeds contain 30-45% oil with a high proportion of linolenic acid.

OIL

Camelina oil is a high-quality cooking oil and is also used for cosmetics and for the production of paints and varnishes.



ENERGY

Camelina can be processed into fuel.





JOHN DEERE

NOTHING RUNS LIKE A DEERE

PREPARE FOR PERFECT

**EXPERT
CHECK**



Get your machine ready to give you 100% so that you can deliver the perfect next season. How can you bring up your uptime, maintain maximum performance, and lower costs, no matter your machine's age? Book an Expert Check today. That's how.



FIND OUT MORE