

ATTRACTION

N.2 / OCTOBER 2024

Shaping the future
of agriculture

Adaptive Tire
Management
System

The art
of compound

Conquering
the forest



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EDITORIAL

Dear Reader,

Welcome to the latest edition of aTraction, Trelleborg's magazine specifically designed for professionals in the agricultural industry.

In this issue, we explore a wide range of topics, all connected by a common and crucial theme for those in this field: technological progress. Our world is advancing rapidly, driven by research and the development of new solutions that not only boost the efficiency of our products but also align with the sustainability standards demanded by today's environment.

On the following pages, you will see how our daily work strives to address the evolving needs of modern agriculture by offering innovative, cutting-edge tires and solutions for our community of customers.

This commitment is testified by professionals in the agricultural and forestry sectors who have experienced firsthand how our tires have helped them enhance productivity in their daily operations. Do you want to learn more? Dive into the pages of this magazine to find out.

Enjoy your reading!



ROBERTA D'AGNANO
EMEA Marketing Director
Yokohama TWS



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Driving innovation in the off-highway industry: Trelleborg's smart solutions for tomorrow's tires

Tires are connecting. As the world is moving into the era of innovation and digital transformation, the tire industry is also implementing new connected technologies under the umbrella of **Artificial Intelligence of Things (AIoT)**, a combination of artificial intelligence (AI) technologies and the internet of things (IoT) infrastructure that is paving the way for the transformation of vehicle maintenance and performance.



In fact, real-time data processing of the actual tire usage helps not only the OEMs to examine and improve existing specifications, allowing them to adjust existing and new products to specific customer circumstances, but it is also and foremost a powerful ally in the end-users' operations. It is not by chance that, according to the latest industry research, the global Smart Tire Market is expected to reach a value of US\$ 200 billion by 2033, expanding at a CAGR of 7.8% over the next ten years, with the off-highway sector playing a consistent part in the growth.

More precisely, the benefits connected tires offer in terms of predictive maintenance, operational efficiency, and long-term cost savings are driving their adoption in various demanding applications. At the same time, as technology advances, the capabilities and reliability of smart tires are expected to improve, further solidifying their role in the future of off-highway operations.



In this complex scenario Andrea Evangelisti, our Digital Innovation & Solutions Director, explores the evolution of our digital solutions in the tire market. "So far, the scenario has mainly revolved around **Tire Pressure Monitoring Systems (TPMS)**, electronic systems designed to monitor the air pressure inside the pneumatic tires of various types of vehicles, providing real-time tire-pressure information to the driver, or remotely, to the fleet manager", he comments. These kinds of solutions rely on sensors placed inside the tire

collecting data about internal pressure and temperature, then transmitting the information directly to a video terminal placed on vehicle or rather to the cloud and returning it back to be displayed on the chosen device. "Usually, such solutions allow for the creation of reports and the recording of statistics and analytics history", says Evangelisti.

"For example, our **TPMS** allows operators to measure pressure and temperature every five seconds, providing instant access to vehicle status and monitoring data through a computer or mobile devices. Furthermore, thanks to the full connectivity and cloud data transmission, the operator or the fleet manager can benefit from automated email notifications in emergency situations and personalized vehicle warnings."

But what if the gathered data could also show a way to deploy adaptive solutions at full vehicle scale; for example, capable of adjusting tire pressure dynamically,

based on real load sustained by tire and terrain characteristics? What if vehicles could adapt other controls linked to operations' parameters?

"In the case of farming equipment", Evangelisti points out "the tire sensing with the soil can also be a reliable source for information gathering and automated equipment decision making".

As the addition of **smart technologies** has become part of the evolution of agricultural tires, more and more attention is being paid by producers everywhere to the effects of tire pressure on tractor performance and soil issues like compaction, since optimal tire pressure can lead productivity increase while reducing fuel consumption, improving crop yields and preventing damage of soil.

For this very reason, Trelleborg has developed an **Adaptive Tire Management System (ATMS)**, allowing tractors to always work effectively according to the application, but not only.

The ATMS represents a real revolution because it is able to measure the dynamic load of each tire. The driver is constantly advised on how to fully optimize the tractor configuration, in each working operation, through the most appropriate tire inflation pressure, the correct tractor ballast and implement set up, and the inputs for the tractor engine and transmission management.

The system infrastructure can be customized for different agricultural machines including tractors, harvesters, and trailers.

According to Evangelisti, "The great advantages of the **ATMS**, when compared to a **TPMS**, are its **new functionalities**, such as the tire dynamic load, the tractor load distribution, and the recommended tire pressure". During work and depending on the type of activity, the farmer is then constantly informed on **how to optimize the tractor set-up** with regard to the most appropriate tire inflation pressure and ballasting for optimized traction and floatation on soil and better set-up for road handling at lower rolling resistance.

"Consequently, while **Tire Pressure Monitoring Systems (TPMS)** have significantly enhanced vehicle safety and reliability by ensuring proper tire pressure, **Adaptive Tire Management Systems (ATMS)** represent a further evolution in the smart tire field, with a comprehensive approach that provides real-time optimization and predictive maintenance, ultimately offering superior safety, improved fuel efficiency, and extended tire lifespan", sums up Evangelisti. As technology advances, **ATMS** showcases the future of intelligent tire management, setting a new standard for vehicle performance, soil performance and safety.



"A unique tire for my unique sprayer"

Doff brothers' thoughts about their own TM1000 ProgressiveTraction®

Autumn arrived in northern Europe and, with it, the season of the quintessential autumn vegetable: Brussels sprouts. Dutch farmers Johan and Henk Doff are specialized in this crop on their farm in Uithuizen, Groningen (Netherlands). The brothers cultivate one hundred hectares of Brussels sprouts on a sticky clay soil, so spraying the vegetable required the proper equipment for the conditions.



Spanning a coastline of five hundred kilometres going from the northern Netherlands to Germany, the Wadden Sea is a sight to behold. Slightly inland, we find a lot of agriculture, thriving on the fertile polder soil. Brothers Johan and Henk are among the farmers who work this sticky clay soil and know all the particularities of working on this very specific terrain. "In this highly specialised crop, crop protection plays a crucial role. In wetter conditions, the soil becomes very heavy. The heavy machine easily leaves traces in the fields and crop. It's a tricky balance and you really need the right equipment for the job."

A few years ago, Johan started looking for a combination of a self-propelled sprayer and tires up

for the job. The criteria being very specific, it took him a while to figure out what would work best. Two years ago, he decided on the Delvano ST27 on Trelleborg TM1000 ProgressiveTraction® tires and hasn't regretted it since. "It was a very conscious decision", Johan explains. "I did thorough research and found that the TM1000 ProgressiveTraction® tires on the Delvano ST27 would be ideal for the work we do." The Delvano ST27 is an impressive self-propelled sprayer with a tank capacity of 6.000 liter. The sprayer boom spans a whopping 55 meters

and is equipped with 3 separate spraying circuits, one of them dedicated to disinfecting the rows of plants next to the tramlines in the field, to avoid the spray of potential infections. The Trelleborg TM1000 ProgressiveTraction® tires in size 480/95R54 are almost 2.3 meter tall and give the sprayer a ground clearance of more than 1.5 meter.

Among the advantages of this combination, Johan cites the great load capacity. The VF tire is ideal for a central tire pressure control system, which allows the brothers to imitate tracks: perfect for slippery soils. "The option to pick a 54 inch tire convinced me: these tires have a big air chamber which was very important



to us, because it adds to the track effect, allowing us to ride with very little tire pressure."

"This unique sprayer needed a unique tire", Johan continues, "so I took my time looking for the perfect fit. The TM1000 ProgressiveTraction® proved ideal for the Delvano in a crop like Brussels sprouts. Now that we have used it for a while, I can honestly say that I am very happy with my choice of combination. The Trelleborg TM1000 ProgressiveTraction® is the perfect tire for this application!"



[Click here to watch the full interview!](#)

The art of compound

Whether for Agriculture, Material Handling or Construction, the quest is for **robust, durable, eco-friendly tires**. At Trelleborg, we meet these demands through constant searching and the right dose of **AI**.

As fundamental as it is in the tire sector in general, developing the right compound for each application in the off-highway segment is even more essential, since the tire DNA bears the ultimate responsibility for performance, safety and, last but not least, sustainability.

It doesn't take long to realize that we have a problem on our hands.

Today's customers expect top-tier productivity in challenging contexts while minimizing environmental impact. On the other hand, tire manufacturers know that it is no easy feat to engineer a "sustainable tire" that assures comparable or superior performance to standard compounds, using alternative raw materials from reliable sourcing and in sufficient volumes.

Is there a way to get out of the predicament and get the best of both worlds?

As Trelleborg, we strongly believe there is, and it goes through exploiting the potential of digitalization and artificial intelligence along the process.

This is why **we strive to find the right balance between performance and sustainability**, employing all our resources – both human and digital – to offer our customers the best products to meet these two needs especially when



it comes to such an important issue as the compound.

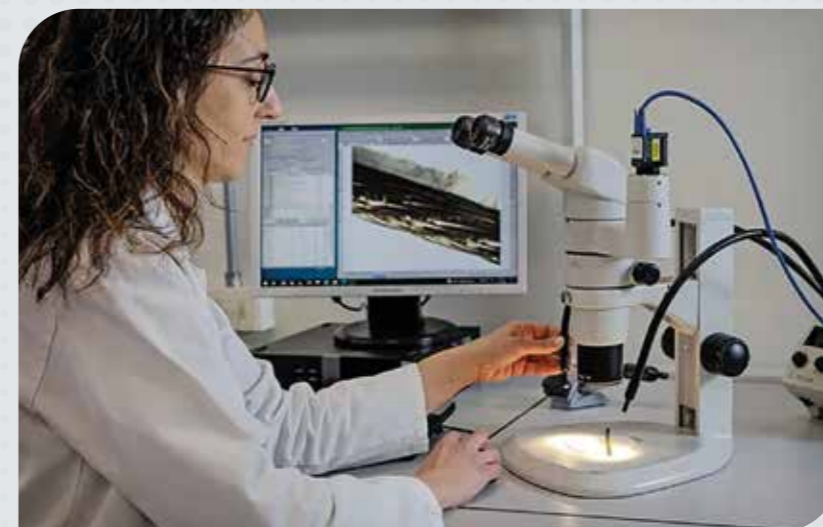
"Depending on the intended use and product category, the requirements in terms of compounds can vary greatly. Our task is to optimally balance all components, also considering the position of the compound within the tire. For this reason, the different combinations of natural or recycled together with standard fossil-based materials need to be carefully evaluated to find the right balance between performance and sustainability", explains Veronica Cantonetti, our Raw Materials - Compounding & Sustainability Director.

To address environmental concerns, off-highway tire manufacturers have shifted to polymers and fillers in recent

years, with a rising trend toward recycled materials, including textiles, and there already have been notable changes in the off-highway tires' composition.

In this regard, the achievements we have reached over the years speak for themselves. Amongst the most recent products, the agricultural **TM1 ECO POWER** tire incorporates 65% of its components from sustainable and eco-friendly sources.

Designed for both traditional and electric tractors, this new tire represents the most innovative standard for combining efficiency and sustainability, thanks to its properties that



ensure unmatched low rolling resistance, excellent traction on hard surfaces, and reduced fuel consumption.

The real challenge in this environment, according to Cantonetti, is not so much incorporating sustainable materials into the product as *"being able to simultaneously guarantee **equal or superior performance**. To further enhance sustainability in our agricultural products, we've made several improvements. We use silica from rice husks to reduce fuel consumption. We've incorporated recycled materials like pyrolyzed carbon black. Additionally, to improve tire aging resistance, we've replaced synthetic antioxidants with a blend based on cashew nut shells. This change helps minimize the leakage of chemicals into the soil."*

The remaining question is how to make the research & development process smoother and how to strengthen it in the road up ahead. That is where innovative technology enters the scene.

Human-AI collaboration at the center of tire innovation

We believe that sustainability and digitalization are two parallel paths; and indeed, in the case of compound formulation, machine learning and advanced data analysis can revolutionize the process and make compounds more efficient, safe, and sustainable.

AI is essential in developing new formulations using traditional machine learning methods. Chemists can predict the properties of desired formulations and their performance based on given recipes. This reduces development time, minimizes lab iterations, and decreases the waste of testing materials, making the process more sustainable.

However, according to Cantonetti, relying solely on **AI "is not enough"**: the know-how and experience of the chemist-technologist remain crucial in selecting the proposed solutions and evaluating technological constraints of cost and material availability.

*"We operate our AI in a way that **combines the advantages of an algorithmic approach with the knowledge and expertise of our specialists** to accelerate new formulation processes. As a result, the most suitable recipe based on specific properties is swiftly identified, also considering technological constraints",* she declares.

Applying an even more sustainable logic within the algorithm, using it for creating formulations from sustainable resources, is where the next efforts should be. Why? *"To ensure, at the same cost, a competitive product and a business model that is fully sustainable and brings even more benefits for our end consumers",* sums up Cantonetti.



Conquering the forest

Behind the Scenes with Andrea Ceri, professional lumberjack and star of “Undercut: L’oro di Legno” TV show



In the challenging world of professional forest work, equipment isn’t just a tool—it’s a lifeline. Recently, we had the opportunity to speak with Andrea Ceri, a member of the renowned Ceri Holz team.

The Ceri Holz team operates in the rugged Val di Fiemme region of northern Italy, known for its dense forests and challenging terrain. Featured in the popular TV series Undercut: L’oro di Legno, Ceri Holz is a family-run business, founded in 1984, that specializes in forest cutting, wood processing, and timber trading. Their work demands the use of high-powered machinery such as cableways, harvesters, forwarders, and skidders to manage logging tasks in some of the toughest conditions imaginable.

To meet these challenges head-on, the Ceri Holz crew equipped their machines with the Trelleborg T418 skidder tires. We asked Andrea Ceri to delve deeper into his work and shed light on the main challenges his team



encounters in the demanding world of professional logging.

How do the extreme conditions in Val di Fiemme impact your daily work?

“We’re constantly dealing with rocky, uneven ground and tight spaces. In conditions like these, our machinery takes a beating from stumps, stones, and other obstacles. Working here in the woods has always been tough, but it’s also rewarding. There’s something special about being surrounded by nature every day,

even if it means facing unpredictable conditions. You learn to respect the land and adapt quickly—it makes you stronger. But without the right equipment, it can be exhausting.”

Your team operates some pretty heavy machinery—how do you manage to stay agile and efficient in such tough environments?



“Agility is essential for us, especially when we’re working in dense forests and on steep slopes. In these conditions, having the right tires is absolutely crucial. They directly impact how well we can navigate tight spaces and challenging terrain. Without the right tire support, even the most advanced machinery would struggle with stability and performance, which could slow us down or increase the risk of damage.

That’s why selecting the right tires is a priority for us. The T418 tires, in particular, have made a big difference on our HSM 904 skidder. Thanks to their characteristics, like the reinforced sidewalls and strong fit on the rim, our machinery feels more stable, which allows us to maneuver more easily.”

What stood out to you about the T418 in terms of durability?

“One thing that immediately impressed us was the strength of its carcass, which is exactly what we need to protect against the obstacles we encounter—big rocks, stumps, and uneven terrain. That extra layer of durability really makes a difference and reduces the chances of damage when we’re deep in the woods.”

Has adopting new equipment or tools ever changed the way you approach your work?

“Definitely. Reliable equipment lets us work faster and push the limits, even in tough environments. Over the years, technology has changed the job—tasks that once took hours now take half the time. But it’s not just about speed; it’s about working smarter. The right tools reduce physical strain and help us stay efficient.

Using the T418 tires, we’ve noticed that we no longer need to worry about repairs or tire damage, even in harsh conditions. This has increased our productivity and significantly reduced downtime and costs.”



ABOUT UNDERCUT

“Undercut: l’oro di legno” is the mustwatch series for forestry enthusiasts, airing on DMAX channel and now in its seventh season.

The show features teams of professional lumberjacks, engaged in highly precise and demanding tasks. Since 2019, Undercut’s cameras have been following their stories step-by-step, showcasing the diverse aspects of a fascinating and valuable profession for their community.

The show’s powerful storytelling and realistic approach have drawn in a massive fanbase of nature lovers, forestry professionals, and enthusiasts alike.

In this new season of Undercut, lumberjacks’ work is once again being tested by climate change: thousands of cubic meters of water have hit the forests and valleys of northern Italy, swelling the rivers and bringing the reservoirs to their maximum capacity. The rain has turned the valleys into swamps, where working becomes more difficult every day. In this scenario, the lumberjacks’ teams of Undercut are called to action, to fix the problems caused by the floods and to secure their communities.



VIDEO

NEWS & EVENTS

Trelleborg Tires reveals its first Agri Rubber Track



Trelleborg introduces its first Agriculture Rubber Track, **ART1000**, at Italy's EIMA exhibition.

The ART1000 leverages Trelleborg Tires' technological expertise to bring its very first Agriculture Rubber Track designed for high-horsepower machines. Built to last, the ART1000 optimizes vehicle efficiency and performance, providing extra strength and long lasting durability. ART1000 tracks are engineered for **exceptional versatility and mobility** of farm machinery, regardless of working conditions. Its track design features advanced tread bars that minimize soil

compaction, promoting healthy root growth and nutrient absorption. The high self-cleaning capability results in **increased traction and improved ride quality** in demanding high-pull applications, maximizing overall performance and reducing operating costs. This revolutionary new technology, developed from Trelleborg Tires' extensive experience in tire manufacturing, ensures superior performance compared to the competition. With its high-quality rubber compounds and cutting-edge engineering, ART1000 provides **high wear and cut resistance**, ensuring durability for the most rigorous agricultural challenges.



Trelleborg celebrates innovation and excellence at Tractor de España® Award

Trelleborg is official partner of the **Tractor de España® Award 2024**, an event organized by the magazine Agrotécnica that annually recognizes the most advanced, efficient, and sustainable tractor models in the market. The awards ceremony took place on September 27 at the Superior Technical School of Agronomic, Food and Biosystems Engineering (ETSIAAB) of the Polytechnic University of Madrid, and it was an important occasion to promote excellence, innovation, and sustainability in agricultural machinery.

Being one of the preferred partners of leading Original Equipment brands, Trelleborg is the perfect partner for an event like Tractor de España®, which emphasizes the importance that leading players in

this sector place on **technical and scientific research**, aimed at offering increasingly modern, efficient and sustainable solutions that push the boundaries of technological progress in the agricultural tire market.

NEWS & EVENTS



Trelleborg team reaches winners podium with Farming Simulator League in Season 5

On July 6-7, farming enthusiasts and content creators gathered at FarmCon 24, the annual convention where future farming trends are presented and where the **Farming Simulator League** annual gaming competition finals are held. Trelleborg's own team has been competing in this eSport competition since 2019, with this year's team capturing a **third place win** after beating dozens of other teams. During the convention, participants got

to see a preview of Farming Simulator 25 in action, offering gamers new upgrades and the opportunity to choose from hundreds of machines fully equipped with Trelleborg solutions.

We're thrilled to be part of the newest release of this game, which will see Trelleborg continue to propel productivity, farming efficiencies and sustainability further, even in the online space.

Over 5,000 farmers are already benefiting from Trelleborg Premium Care!

5,000 members are already signed up for our **Premium Care Program** across all of Europe, an important milestone that marks the importance for the professional community we serve to rely on a high-quality brand that not only provides products but also supports the growth of their business, helping them achieve the best results every day. By empowering farmers and contractors, Premium Care aims to optimize tire performance, and provide added peace of mind through an **extended warranty** on Trelleborg's products. Additionally, the program offers many other benefits to its members, including special **promotions and previews** of the latest tech developments and exclusive access to Trelleborg's team of experts for **immediate assistance and tailored advice**.



Enhancing agricultural performance at Fendt günos 2024, in Spain

Trelleborg was among the protagonists of **Fendt günos**, one of Spain's most prestigious agricultural gatherings, on October 3 in Manzanares. The event brought together farmers, professionals in agricultural business, and machinery enthusiasts to celebrate **innovation and excellence** in modern agriculture.

The Trelleborg team engaged the farming community through a series of interactive activities at its stand. Visitors enjoyed a fantastic day filled with technical demonstrations, food, music, and entertainment.

Trelleborg's participation in Fendt günos marked the long-term partnership with Fendt and, above all, our commitment to putting farmers first, offering them more than just advanced tires for modern-day farming.



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