

Press Kit

Boulogne-Billancourt – November 10, 2013

Michelin at Agritechnica in Hanover, Germany – November 10-16, 2013

Michelin presents the world's largest tractor tyre, the MICHELIN AxioBib IF 900/65R46, and innovates with four other tyres that meet the needs of farmers, today, tomorrow and beyond



Press conference: Sunday, November 10 – 1:30-2:00 pm – Convention Center, room 11.

Michelin stand, Hall 9, D05

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**MICHELIN, the official supplier of innovations
that ensure the mobility of agricultural stakeholders**

The Michelin Agricultural Product Line is closer than ever to agricultural stakeholders. As a partner to equipment manufacturers, it meets the needs of today's farmers while anticipating their future needs.

In 2014, Michelin is extending its tyre lineup to fully cover all phases of the crop cycle and adapt to new types of use. Two new tyres are being presented.

- **The MICHELIN SprayBib VF420/95R50**, integrating Michelin Ultraflex Technology, in a new size for sprayers.
- **The MICHELIN BibLoad Hard Surface**, a new range for compact and telescopic loaders.

To accompany new developments in farm equipment, Michelin at Agritechnica, the world's leading farm machinery trade show, is presenting **the world's largest tractor tyre: the MICHELIN AxioBib IF900/65R46**. The tyre has a width of 900 millimeters, a diameter of 2.32 meters, a per-tyre load capacity of 10,600 kg and the ability to operate at 65 km/h¹. These impressive statistics demonstrate:

- The power of Michelin's innovation capacity.
- The Group's ability to anticipate technical challenges and help manufacturers define the agricultural equipment of the future, thanks to the substantial resources allocated to research and development.
- The adaptation of Michelin Ultraflex Technology to ever-larger tyres in order to provide farmers and farm operators with enhanced traction and less soil compaction, thereby improving their output.

Michelin is working closely with farm equipment manufacturers to develop its new generations of tyres. At Agritechnica, the MICHELIN AxioBib IF900/65R46 will be fitted on the New Holland T9 and Deutz-Fahr's all-new Series 11. Krone has also announced that it will use the tyre on its next generation of combine-harvesters, which will deliver more than 1,100 horsepower.

Lastly, Michelin is presenting **two concept tyres** that provide an initial response to the farm mobility concerns of tomorrow and beyond, by inventing innovative tread patterns and exploring paths that will lead to the development of "smart" tyres, like the MICHELIN Concept QR Code tyre.

Emmanuel Ladent, Director of Michelin's Agricultural Tyre Product Line

¹ Where authorized by local legislation

Michelin is innovating for today's farms

- The MICHELIN BibLoad Hard Surface, specially designed for farm work on hard surfaces
- The MICHELIN SprayBib VF420/95R50, for new generations of sprayers

Michelin is innovating for the farms of tomorrow

- The MICHELIN AxioBib IF900/65R46, the world's largest tractor tyre

Michelin is innovating for the farms of tomorrow... and beyond

- The MICHELIN Concept tyre: new tread patterns for new types of use
- The MICHELIN Concept QR Code: a first step toward the "communicating" tyre

MICHELIN Total Performance

A philosophy of mobility

Michelin Group: Milestones

Michelin Group: Key figures

The new MICHELIN BibLoad Hard Surface tyre

The preferred partner for farm work on hard surfaces

Key points

In addition to working in the fields, farmers are spending more time in farm courtyards, on roads between silos and storage areas and on other asphalt surfaces. Some farmers spend up to 50% of their work time on hard surfaces.

Because types of use and machines are evolving, Michelin must support new generations of compact loaders and telescopic machines.

The new **MICHELIN BibLoad Hard Surface** tire is **purpose designed** to support farmers working on these types of surface.

The new MICHELIN BibLoad Hard Surface introduces a new tread with blocks in the shape of a beveled diamond that improve grip and resistance when moving laterally.

Today's farms increasingly use compact loaders and telescopic equipment. What's more, with the rapid growth in farm size, these machines are spending more time on the road as well as in asphalt farm courtyards and platforms. It has been noted that on average farmers are spending more and more time on hard surfaces – up to 50% of their working time in some extreme cases.

In response, Michelin has introduced a new range of tyres perfectly suited to these new farm machines and types of use: the radial MICHELIN BibLoad Hard Surface line-up.

In developing this range, Michelin integrated a large number of usage studies, with dozens of farms in France, Germany and Russia testing the tyres in real-conditions of use. Compact loaders and small telescopic machines were equipped with GPS data acquisition systems and the conditions of use were thoroughly analyzed. By characterizing usage in this way, Michelin was able to define the specifications for the perfect tyre. Because of changes in use, today's machines must carry out a large number of lateral, longitudinal and transversal movements on hard, wet and even snow-covered surfaces. The challenge is to offer a solution that responds to all of these difficult conditions, which is why Michelin developed an innovative, multi-directional tread. For the same reasons, the tyre sidewalls were made much more robust.

As a result, the new MICHELIN BibLoad Hard Surface stands apart because of its unique tread. With its patented tread, the Michelin BibLoad Hard surface is the first tyre with diamond-shaped tread blocks made up of beveled facets. Offering no fewer than six different grip angles, these progressive facets make the block more rigid regardless of the tread depth. Carved down to the base of the tread block, the bevels help to spread stress across the casing layer during lateral movements, while also facilitating the evacuation of mud.



The dozens of farmers who helped to develop the tyre were all in agreement about the tread's rigidity, which makes the vehicle highly responsive and the sidewalls more resistant to cuts and scrapes. They also said that the tyre made for a very comfortable ride. Developed to complement the MICHELIN XMCL range of tyres for use on loose soil, the new MICHELIN BibLoad Hard Surface tyres have a void ratio of 50% instead of 70%, which help to reduce noise and improve driving comfort.

This ability to produce a tyre that delivers more performance across the board – which would be impossible without the right technology – is at the heart of the Michelin Total Performance philosophy. At the Michelin Technology Center, 6,600 researchers, backed by an operating budget of €622 million, are working to design the tyres of tomorrow.

While the MICHELIN XMCL tyre is still the market benchmark for use on loose soil, Michelin has expanded its product portfolio with the new BibLoad Hard Surface, which is dedicated to farm work on hard surfaces and designed to accompany changes in farming and farm equipment use.

The MICHELIN BibLoad Hard Surface offers four clear advantages:

- Greater longevity thanks to an optimized footprint.
- Reduced hourly costs compared with a lugged tread, resulting from its superior longevity.
- Enhanced resistance to cuts and scrapes thanks to its reinforced sidewalls.
- Improved comfort and stability thanks to the rigidity of the tread.

The new MICHELIN BibLoad Hard Surface tyre range will be brought to market in 2014 in the following sizes:

- 400/70 R20
- 460/70 R24

The size offering will be extended in 2014 and 2015 to accompany changes in equipment design and meet farmers' needs.

The MICHELIN SprayBib tyre now available in size VF420/95R50

Enhanced safety and productivity for crop conditioning equipment

Key points

Within the crop cycle, the different crop conditioning phases are the key to a successful harvest.

Conditioning crops while protecting the soil poses a difficult challenge. Moreover, this task must often be carried out during working periods shortened by weather conditions.

Michelin supports farmers with the new SprayBib VF420/95R50 tire, which complements the size VF380/90R46 tire.

Delivering all the benefits of Michelin Ultraflex Technology, the tire operates in the field at lower pressure thus more effectively protecting the soil. It also improves the stability of machines that carry heavy loads and can be driven at speeds of up to 65 km/h where authorized by local legislation.

With its new MICHELIN SprayBib VF420/95R50 tyre, the French tyre maker has introduced a size that is unique in the crop-conditioning segment.

Its aspect ratio of 95 guarantees enhanced safety and stability for users of sprayers and other crop conditioning machines, which are becoming bigger in line with the general trend in farm equipment in order to meet productivity, speed and load capacity requirements. These machines can now carry more than 4,500 liters in their tanks. Only a tyre with a maximum 95 aspect ratio can guarantee optimal stability, especially at high speeds of up to 65 km/h².

In addition to user safety, which is first and foremost among Michelin's values, the Group provides farmers with all the benefits of Michelin Ultraflex Technology. Its VF designation means that the new MICHELIN SprayBib more effectively protects the soil by applying less pressure and distributing it more evenly thanks to the tyre's large footprint.

For example, for a load index of 177 (7,300 kilograms), a tyre integrating IF technology requires a pressure of 4.8 bar. Thanks to its effective use of VF technology, Michelin can improve work in the field with its SprayBib VF420/95R50 inflated to a pressure of only 3.6 bar.

² Where authorized by local legislation

This ability to function at low pressure provides farmers with a decisive advantage, enabling them to take to the fields as soon as winter ends without harming the soil and to more effectively manage their operations in working periods that are sometimes shortened by weather conditions.



Following the launch of the MICHELIN SprayBib VF380/90R46 in 2011, Michelin will bring to market the SprayBib VF420/95R50 in 2014. Unique in the market, this size tyre was developed through close cooperation with John Deere, the world's leading manufacturer of sprayers and crop conditioning machines.

Tyres integrating Michelin Ultraflex Technology also evacuate mud more effectively and reduce vibrations. This not only protects the soil but also provides benefits for users (improved comfort) as well as for the equipment (less chassis resonance and fewer vibrations that can negatively impact onboard electronic systems). This ability to deliver more performance in the same tyre through the use of advanced technologies and innovative solutions perfectly illustrates the MICHELIN Total Performance strategy.

By extending the SprayBib range with the new VF420/95R50 tyre, Michelin has demonstrated its ability to integrate innovative technologies that satisfy farmers' needs throughout the crop cycle.

Michelin unveils the world's largest tractor tyre: the MICHELIN AxioBib IF900/65R46

Michelin, the preferred partner to high-power tractors

Key points

Delivering horsepower of 300, 350, 400 or 500, high-power tractors have arrived on the market in response to farmers' demands for greater productivity.

Because of Michelin Ultraflex Technology, MICHELIN tires are still the most cost-effective, flexible, soil-friendly solution. As a result, it is Michelin's duty to support the development of high-power tractors.

Consequently, the largest manufacturers of tractors and harvesting equipment work closely with Michelin in win-win partnerships.

In addition to the AxioBib IF850/75R42 unveiled at SIMA 2013, Michelin, at Agritechnica, is presenting the world's largest tractor tire: the MICHELIN AxioBib IF900/65R46, with a diameter of 2.32 meters (RCI 50) and a per-tire load capacity of 10,600 kilograms.

In this way, Michelin has created a full family of tractor tires capable of meeting the needs of farmers, both now and in the future.

The Michelin Group is proud to present the world's largest tractor tyre, which is 900 millimeters wide and 2.32 meters high and has a per-tyre load capacity of 10,600 kilograms and a maximum speed of 65 km/h³. Reaffirming its leadership in breakthrough innovations is part of Michelin's longstanding commitment to the farming community and of the day-to-day dedication of research and development teams and their constant quest to improve mobility.

The world leader in radial agricultural tyre technology, which it created, the Michelin Group also brought to market the first 2.05-meter agricultural tyre in 1999, presented its Michelin Ultraflex Technology in 2003, and again shook up the industry by introducing the first 2.15-meter agricultural tyre in 2006.

Thus it was logical for Michelin to develop the **world's largest tractor tyre**. At Michelin, large size and advanced technology always go hand in hand. The leader in radial agricultural tyre technology, Michelin is the only tyre maker with the complex manufacturing capabilities to build this crowning achievement into its lineup. The MICHELIN AxioBib IF900/65R46

³ Where authorized by local legislation

reaps all the benefits of Michelin Ultraflex technology. Capable of operating at pressures as low as 0.8 bar, it can maximize its footprint without compacting the soil.

Because Michelin is the preferred partner of farm equipment manufacturers, helping them to design and produce the machinery of tomorrow, the MICHELIN AxioBib IF900/65R46 tyres will not only be displayed on the Michelin stand. It will also equip the New Holland T9 tractor (Hall 3, stand C03) as well as Deutz Fahr's new Series 11 tractor (Hall 4, stand B27), which is premiering at Agritechnica. Krone has already announced that its next generation of forage blowers delivering more than 1,100 horsepower will be equipped with the MICHELIN AxioBib IF900/65R46 to offer users improved productivity and enhanced output thanks to the tyre's greater traction.



The Michelin AxioBib IF900/65R46 provides users with the following benefits:

- **More traction.** The oversize lugs and wide tread band transmit all of the tractor's power to the ground.
- **More flexibility.** Thanks to Michelin Ultraflex Technology, the sidewalls increase the tyre's footprint, thus protecting the soil.
- **More traction.** Leveraging the full range of the Michelin Group's expertise, the bead attachment was specially designed to avoid shifting on the rim. This means that these tractors can transmit all their engine torque without harming the soil.

This ability to deliver more performance in the same tyre through the use of advanced technologies and innovative solutions perfectly illustrates the MICHELIN Total Performance strategy.

With the new AxioBib IF900/65R46, Michelin is continuing to support advances in machinery through this 2.32-meter tyre, which simultaneously delivers maximum traction and minimum soil compaction, © to mention an attractive design that enhances the look of tractors that deliver more than 350 horsepower.

What equipment manufacturers say:

“It’s easy to make increasingly powerful engines. What’s needed is to find a new generation of tyres to accompany the new generation of tractors. We need to offer the ideal matchup to enable farmers to grow their operations.”

Neil Payne, Marketing Manager for high-horsepower tractors
New Holland

“For our next generation of tractors, which will deliver 350 to 440 horsepower, our specifications are to transmit all the power to the ground while reducing soil compaction. That’s why we turned to Michelin.”

Alessandro Plebani, Development Manager for high-horsepower tractors
Same Deutz Fahr

“In the autumn, our forage blowers often operate in damp conditions. Most of them are driven by service providers that harvest for farmers. Protecting the soil is vitally important for our customers. That’s why we partnered with Michelin for our next-generation machines that will deliver up to 1,100 horsepower.

Heinrich Wingels, Marketing Director, **Krone**

The **MICHELIN AxioBib IF900/65R46** is already available as original equipment on the most recent generation of high-power tractors. It will be introduced in the replacement market in 2015 for latest-generation tractors that require oversize tyres.

Michelin is innovating for the farms of tomorrow... and beyond

Michelin reinvents the agricultural tyre tread to pave the way for new types of use

The MICHELIN Concept agricultural tyre could be available in 2020

Key points

Michelin provides its research, development and innovation teams with considerable resources.

Their mission is to design the safer, more efficient tires of the future while also exploring all paths created by changing types of usage.

Because farms are becoming bigger and bigger and tractors are spending more time on roads, Michelin has reinvented the agricultural tire. One example is this new tread, which breaks with the traditional agricultural tire.

The agricultural tire of the future may well look like this MICHELIN concept tire.

On display at Agritechnica for the first time in an international trade show, the MICHELIN concept tyre was developed at the Michelin Technology Center, which is staffed by some 6,600 researchers on three continents and backed by an annual budget of €622 million. Their mission is to rethink and design the tyres of the future.

The agricultural tyre-testing unit in Clermont-Ferrand, the Group's historical base, devotes some 12,000 hours a year to testing agricultural tyres. The behavior and handling of more than 900 tyres are studied every year through 50 major types of tests. The Center's developers and testers are committed to exploring all paths as they seek to design the tyre of the future, even if its shape is somewhat unconventional.

Agricultural tyre treads have a strong visual identity as they are generally comprised of ribs arranged in two V-shaped rows. But is this traditional shape indispensable?

The shape of the tread is not enough in itself. To make a significant difference in the field and meet farmers' needs, all details must be taken into account – from the rigidity of the tread blocks and the angle at which they grip the soil to the solidity of the bead wires and the quality of the rubber compound. So while all agricultural tyres may resemble each other to a certain degree, they are not alike. And it's technology that makes the difference.

As part of this commitment to continuous improvement that stems from Michelin's enormous research and innovation capabilities, the Group's researchers have with the concept tyre pushed back commonly accepted barriers in tread design, with the goal of delivering enhanced performance.

The tyre illustrates just one of many paths pursued by Michelin to develop effective solutions that satisfy contradictory demands, such as developing a tyre capable of operating on both hard and damp soil and on sloping land. In terms of behavior and handling, is this tyre better adapted to mainly road use? Only the future will tell whether or not this concept tyre will one day be brought to market.



Michelin is innovating for the farms of tomorrow... and beyond

With the MICHELIN Concept QR Code tyre, Michelin once again demonstrates its extensive technological skills

Michelin lays the foundations for a “communicating” agricultural tyre

Key points

The world is increasingly connected, as is the agricultural world. Tires must also be among a vehicle's "smart" functions.

While it's essential to have the right tire for the right type of use, it's equally crucial to adapt tire pressure to the load, even if the latter varies regularly.

By integrating a QR Code in the sidewall of its CargoXBib Concept tire, Michelin has laid the foundations for a “communicating” tire. The QR code sends data directly to an animation that enables users to understand changes to be made in tire pressure depending on the load.

In this way, Michelin is ready to respond to one of the major challenges facing farmers in the more distant future: tire pressure control systems.

In addition to these functions and the tire's potential, the MICHELIN Concept QR Code tire also illustrates Michelin's technology capabilities. The tire features a large-size coding system with a “black on black” contrast effect molded directly into the rubber.

In today's farming vehicles, a growing number of functions are interconnected and provide information that the farmer needs to do his job right. Farmers know that in the field they must be able to count on the right tyre for each type of use. They also know that the right pressure for the right load is essential both for safety and for soil protection.

Because loads vary quickly throughout the working day, Michelin has developed a communicating concept tyre. It features a QR Code that is molded directly in the tyre's sidewall. Via a smartphone that reads the data matrix, it sends the data directly to an animation that provides users with all the information they need to ensure correct tyre use. Thanks to this application, the tyre becomes a “smart,” “communicating” component that connects to the entire machine.

This innovation illustrates the current trend toward supplying users with information about their tyres. Using this technology, Michelin has showcased the MICHELIN CargoXBib's unique ability to meet the demands of tyre pressure control systems on farm trailers and tankers.

With its unique highly resistant casing, the MICHELIN CargoXBib can be driven with 4 bar of pressure on roads and 1 bar of pressure in fields. Today, Michelin is capable of providing

farmers with tangible, innovative, intelligent solutions that help them optimize their crop output.

The technological achievement is not only to have designed an entire ecosystem that enables a tyre to become a “smart” component of the vehicle. It’s also in the effective control of the technology. For the first time a large size (75 x 75 mm) QR Code was created using a “black on black” contrast effect, with different shades molded directly into the rubber on the tyre sidewall. This is the same technology that enabled Michelin to innovate with the MICHELIN Pilot Sport Cup 2 tyre, which creates a “velvet” effect with the sidewall markings. Equipped with this tyre, the Porsche 918 Spyder set a new lap record on the Nürburgring circuit.

What’s more, the MICHELIN Concept QR Code tyre illustrates the extent of the Michelin Group’s efforts to develop future applications that enable the tyre to be constantly in phase with all of the vehicle’s responsibilities and applications.

MICHELIN Total Performance **Michelin's philosophy serving farmers**

MICHELIN Total Performance: reconciling seemingly contradictory areas of performance.

MICHELIN Total Performance offers a unique way of designing tyres that deliver enhanced performance across the board thanks to the deployment of leading-edge technologies.

In every phase of the crop cycle, in the field and on the road, efficient performance and soil protection are essential to ensuring the long-term sustainability of farm operations. Because tyres are key farm productivity factors, farmers are increasingly demanding.

Michelin is committed to delivering more performance in the same tyre and is leveraging its expertise to enable farmers to develop their operations while safely protecting their land and other resources.

That's why Michelin never focuses on just one area but is passionately dedicated to constantly and simultaneously improving tyre performance across the board.

Michelin teams meet this challenge effectively by deploying cutting-edge technologies.

Michelin improves soil protection, tyre longevity, fuel efficiency and other areas of performance, simultaneously and uncompromisingly.

MICHELIN Total Performance is at the heart of the Group's philosophy and is the hallmark of all its tyres, both now and in the future.

Michelin Group: Milestones

For more than a century, MICHELIN has dedicated all its expertise and innovation to enhancing mobility for motorists around the world.

1889: Founding of **Michelin et Cie**.

1891: Michelin files its first patents for removable and repairable tyres.

1895: Michelin introduces Éclair, the first car to be fitted with pneumatic tyres.

1898: Birth of **Bibendum**, the Michelin Man.

1900: First **MICHELIN guide** published.

1905: Introduction of the **semelle Michelin** tread with hobnails to improve tyre grip and durability.

1910: First 1/200,000 scale Michelin **road map** published.

1913: Michelin invents the **removable steel wheel**.

1923: First **low-pressure car tyre** (2.5 bar).

1926: Michelin creates its first **Green Guide for tourists**.

1930: Michelin files a patent for the **integrated tube tyre**.

1938: Michelin introduces **Metalic, the first truck tyre with a steel casing**.

1946: Michelin invents the **radial tyre**.

1959: Michelin introduces the first radial tyre for earthmovers.

1979: The Michelin radial tyre wins the Formula 1 championship.

1981: The MICHELIN Air X is the first radial aircraft tyre.

1989: Michelin launches the first online travel itinerary service, on France's Minitel teletext network.

1992: Launch of the fuel-efficient MICHELIN ENERGY™ tyre.

1993: Michelin invents the new C3M tyre manufacturing process.

1995: The US space shuttle lands on MICHELIN tyres.

1996: Michelin invents the vertically anchored PAX System tyre.

1998: The first Michelin Challenge Bibendum, the leading international clean vehicle event.

1998: The Michelin Man's 100th birthday.

2000: Michelin Man voted best logo of all time by an international jury.

2001: Michelin brings to market the world's largest earthmover tyre.

2003: Launch of MICHELIN brand automotive accessories.

2003: Michelin brings to market the MICHELIN XeoBib, the first tyre to integrate Michelin Ultraflex Technology, a true breakthrough innovation in the marketplace.

2004: New corporate signature introduced: "**Michelin, a better way forward.**"

2004: **First Michelin ExelAgri dealer certifications awarded.**

2006: Michelin revolutionizes truck tyres with MICHELIN Durable Technologies.

2007: Launch of the new MICHELIN ENERGY™ Saver tyre, which reduces fuel consumption by nearly 0.2 liters per 100 kilometers, thereby lowering carbon emissions by almost 4 grams per kilometer.

2009: 100th edition of the MICHELIN guide France.

2010: Market launch of the MICHELIN Pilot Sport 3 and MICHELIN Pilot Super Sport tyres.

2012: European launch of the new MICHELIN ENERGY™ Saver+ and MICHELIN Agilis+ tyres.

2013: **Michelin unveils the MICHELIN AxioBib IF900/65R46, the world's largest tractor tyre.**

Michelin Group: Key figures

Founded:	1889
Production base:	69 production sites in 18 countries
Number of employees:	113,400 worldwide at December 31, 2012
Research and development:	More than 6,600 researchers working in 25 facilities on three continents: North America, Europe and Asia
2012 R&D budget:	€22 million, up 5.1% over 2011
Annual output:	166 million tyres produced, over 10 million maps and guides sold in more than 170 countries, and 970 million itineraries calculated by ViaMichelin
2012 net sales:	€21.5 billion