

IF/VF TIRES CASE STUDY ANTICOMPACTIION IN ACTION



THE PROBLEM: SOIL COMPACTION AND REDUCED PRODUCTIVITY

Patrick McHugh, owner of McHugh Farms in Onalaska, Wisconsin, says he sees yield losses of 20% to 30% in compacted areas of his fields, especially in dry years. That's why avoiding soil compaction is a big part of his farming strategy on the 2,000-acre operation where he grows corn, soybeans, vegetables and fresh market sweet corn.

Compacted soil can't hold as much of the water and air that crops need, and the tender root tips can't penetrate compacted layers to reach buried nutrients. Compacted soils are more prone to nitrogen (N) loss from denitrification. They lose water to runoff rather than capturing it by infiltration. And they take more energy to work, raising fuel costs.

"When I look at my yield maps, you can easily see the yield difference, and in the tracks throughout the field, how much of a difference the yield loss is," McHugh says. "And you know, in 10 years, if you add even 10% loss, it makes a huge difference and adds up in a hurry—even if it's just \$3 corn."



Patrick McHugh, owner of McHugh Farms

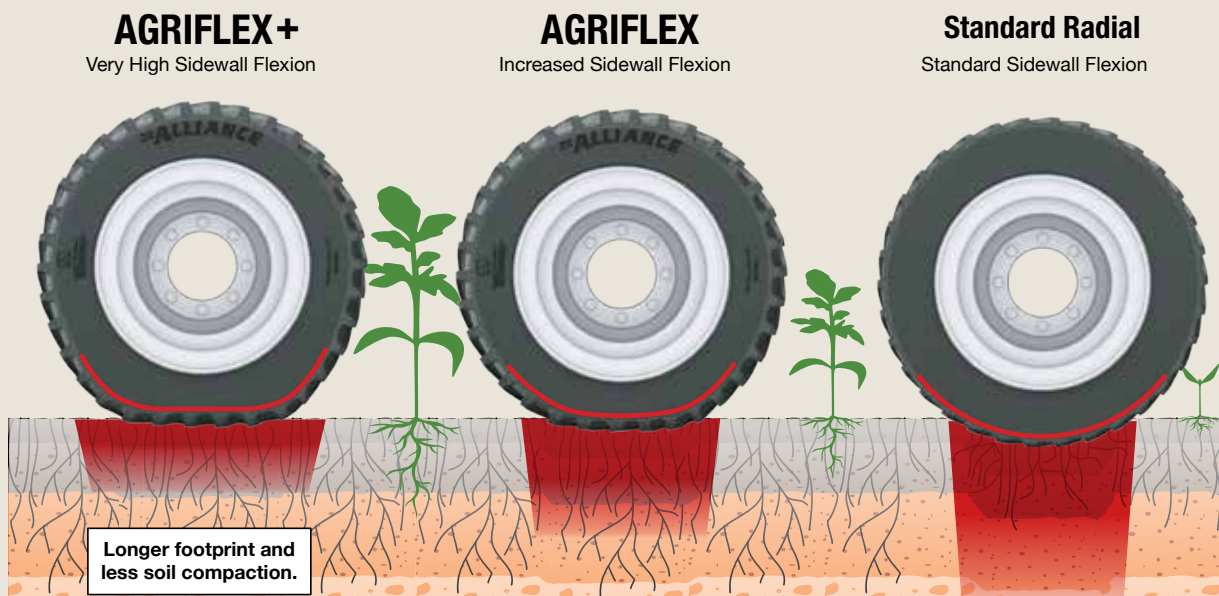
THE SOLUTION: IF/VF TIRES CAUSE LESS SOIL COMPACTION

McHugh's tire dealer, Alton Degenhardt of Degenhardt Tire in West Salem, Wisconsin, got him interested in the Alliance Agriflex+ VF tires. By weighing McHugh's tractor while simultaneously adjusting the inflation pressure of his tires, Degenhardt demonstrated that being able to run a VF tire at 40% lower pressure than a conventional radial could reduce compaction significantly. Because VF tires can flex much more than conventional tires can, they create a larger footprint—which means more lugs on the ground, more horsepower transmitted into motion, and a better ride. McHugh says he could feel the difference from the cab of the tractor.

"These VFs that we put on with Alliance this year have been a great improvement—we've been very happy with them," McHugh notes. "You can certainly notice a lot less bouncing out in the field, a lot more control. You can even turn the tires easier and you can get through the field at quicker speeds, so we've been very happy."

In addition to the data he has started collecting on compaction, McHugh found some visual proof of the difference a VF tire can make: when it was time to do the penetrometer test in the VF field, he had trouble finding ruts to sample.

THE ALLIANCE AGRIFLEX® ADVANTAGE



For more on soil compaction and tires, ask your Alliance Tire dealer about Agriflex IF and VF tires, see a video of Patrick McHugh at <https://bit.ly/2GVzyTy>, or get a free copy of Alliance Tire's white paper on soil compaction at yhta-offers.yokohama-oh.com/soil.

MCHUGH'S SIDE-BY-SIDE EXPERIMENT



Patrick McHugh decided to test his new Alliance Agriflex+ VF tires for himself to see how much less soil compaction they cause. McHugh runs a Massey Ferguson 8680 with a set of Alliance Agriflex+ 354 VF R-1W radials and a Massey Ferguson 8650 with a set of conventional radials from another manufacturer.

Using a penetrometer that measures the force required to push a pointed steel tip into the ground as well as how deep the compaction layer is, McHugh and two team members from Dairyland Laboratories went out into a field—same soil types, same farming practices—to compare soil compaction on ground run over by the Agriflex+ VF radials with ground he ran the conventional radials on. They measured compaction directly under the tread bar, between tread bars, and in undisturbed areas.

TEST SUBJECTS

Tractor 1: Massey Ferguson 8680

Tires: Alliance Agriflex+ 354 VF

Total tractor weight: 41,000 lbs

Front tire pressure: 12 psi

Rear tire pressure: 10 psi

Tractor 2: Massey Ferguson 8650

Tires: Standard radial R-1W

Total tractor weight: 44,000 lbs

Front pressure: 20 psi

Rear pressure: 23 psi



OBSERVATIONS

Tractor/Tires	Avg. penetrometer reading/depth Under tread bar	Avg. penetrometer reading/depth Between tread bars
MF 8680 with Alliance VF tires	145 lbs. /14.8"	152 lbs. /13.5"
MF 8650 with standard radials	183 lbs. /11"	190 lbs. /11"
Alliance VF advantage	38 lbs. less compaction; Compaction zone starts 4" deeper	38 lbs. less compaction; Compaction zone starts 2.5" deeper

PERFORMANCE PAYOFF

It is important to note the dramatic difference in inflation pressure between the standard radials and the VF tires. Under nearly the same load, the Agriflex+ VF tires have less than half of the inflation pressure on the rear tires and just a little over 50% of the inflation pressure in the fronts. Because tire inflation pressure and soil compaction pressure are very closely related, the tractor with the VF tires exerts dramatically less pressure on the field: about half as much. McHugh and Alliance are planning more testing later in the season. In the meantime, says McHugh, he is convinced that it's worth investing in the VF tires.

"We run solid-seeded rows, 8-inch row spacing, so there is no way around having to plant into tire tracks," he explains. "After we put on the Alliance VF tires, we noticed a large difference in seed emergence and being able to get to the proper depth with our drill, which we were not able to do in years past."

Patrick McHugh says his Alliance Agriflex+ 354 VF tires provide more than just protection against soil compaction during a rainy spring like this one. When every hour counts and a rain shower can sideline your planter for days, it helps to have the light footprint and the improved traction be able to get a head start in marginal weather.

"You know you can get out into the field in mid-morning instead of waiting 'till afternoon," he says. "And sometimes three or four hours is the difference between getting that field done or not getting that field done. So it can pay for itself sometimes in one day."

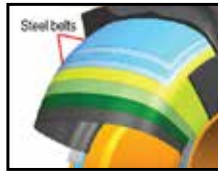
WHY ALLIANCE AGRIFLEX IF/VF?

There is a direct relationship between tire inflation pressure and soil compaction pressure. That's why increased flexion (IF) and very high flexion (VF) tires can decrease the risk of compaction so dramatically. With IF and VF tires, you can choose the benefit you want:

- Reduce inflation pressure. IF tires can carry the same load as conventional radials with a 20% reduction in inflation pressure. With VF tires, you can reduce the pressure by 40%.
- Increase load. At the same inflation pressure as conventional radials, IF tires can carry 20% more load and VF tires can carry 40% more.

Alliance combines IF/VF engineering with stubble-resistant compounding and steel belts to create some of the most durable ag radials in the industry. In addition to offering unbeatable puncture resistance, Alliance's steel belts dissipate heat more efficiently than synthetic belts, and create a flat contact patch for a larger footprint, more even weight distribution, and better traction.

In short, Alliance Agriflex IF and VF tires are designed and built to protect your fields from compaction and boost the performance of your equipment.



The only steel-belted IF/VF range in the industry

Steel belts in the tread area adds durability. Steel belts also distribute weight evenly and guard against punctures.



Stubble Guard Compound

Our special compounds help protect against punctures caused by harsh stubble, adding life to the tire.



Comfortable ride on the road and high traction on the field

Sidewall deflection enhances overall driving comfort allowing the operator to work longer hours



Helps reduce soil compaction

Larger footprint reduces soil compaction and keeps ruts to a minimum. Lower pressure and larger footprint minimizes damage to sensitive terrain.

10-YEAR WARRANTY

Alliance Agriflex+ radials — and all of Alliance's premium, steel-belted farm radial tires — are backed by an industry-leading, 10-year warranty. The warranty is simple: two-year free replacement and 10 years of pro-rated coverage, as well as an aggressive, three-year stubble and field hazard warranty.

And with Alliance Tire's Warranty Wizard app, adjustments are easy to handle via smartphone. The bottom line: everything about Alliance farm radials is designed around performance and getting farmers back into the field.



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Distributor:

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