

Ruffin-Tuff™

Nutrition



Timing:
Soil



Nutrient Type:
Micronutrients



Formulation:
Granular



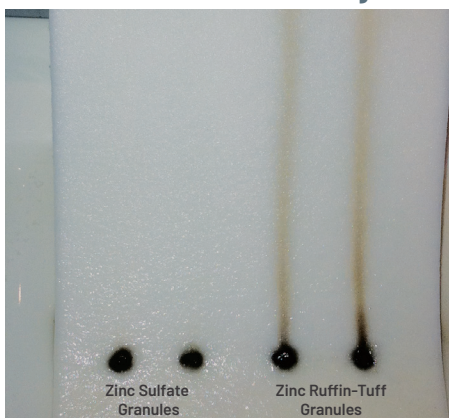
Feed your Crop – add Ruffin-Tuff to your fertilizer blend.

Ruffin-Tuff™ products are patented, lignosulfonated (LS) soil-applied granular micronutrients. The Ruffin-Tuff line is designed specifically to increase nutrient use efficiency and proactively address specific micronutrient deficiencies in the soil.

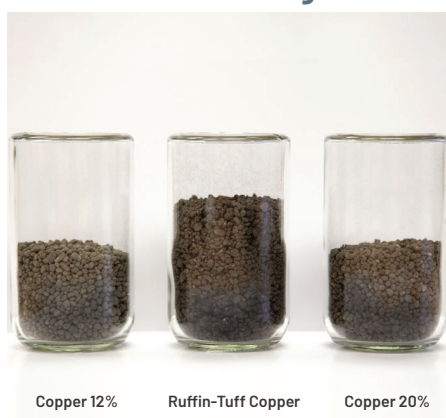
The Ruffin-Tuff Advantage – Proactively Address Micronutrient Deficiencies

- **100% Plant Available and Water Soluble** – Meaning 100% of the nutrients are available immediately to the plant.
- **Remains Plant Available in the Soil** – Patented, lignosulfonated (LS) technology protects the micronutrients, allowing them to stay available and more mobile in the soil for longer.
- **Improved Seedling Vigor and Rooting with Novel Biostimulant** – Humic Acid (17.5% of the Ruffin-Tuff formulation) helps drive nutrient use efficiency, improving seedling vigor, rooting and the overall root architecture.
- **2X More Feeding Sites for the Plant** – Contains the lowest analysis of all granular micronutrients in the industry, along with an optimum bulk density, resulting in 2X more feeding sites for the plant compared to other products.

Greater Solubility = Greater Availability



Optimum Bulk Density = Greater Feeding Sites



Greater Plant Availability = Greater Yield

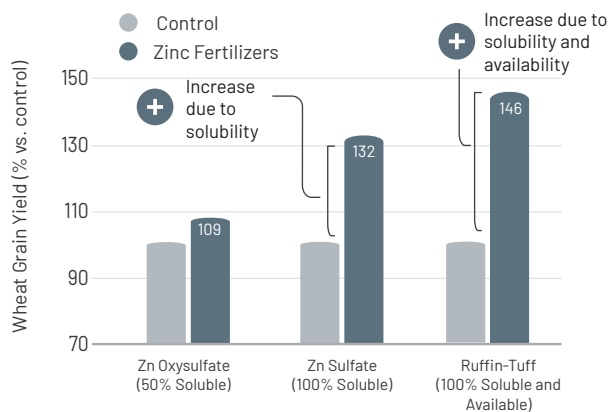


Only Ruffin-Tuff corrects Zinc Deficiency

Proven Agronomic Performance

INCREASED YIELD (GROWTH CHAMBER RESULTS)

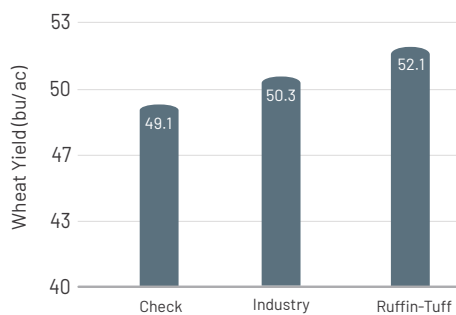
Growth chamber data showed that Ruffin-Tuff increased overall wheat yield by an average 46%, due to 100% solubility and increased availability. By improving the early season root development, Ruffin-Tuff increased yield.



Sabancı University, Dr. Cakmak, 2014 Growth Chamber data. All products soil applied at 1 lb/ac zinc equivalent. Ruffin-Tuff applied at 5x efficiency factor.

INCREASED YIELD (FIELD RESULTS)

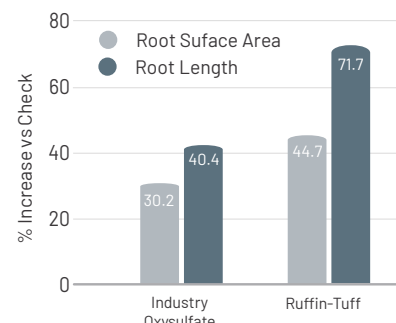
Small plot replicated wheat trials conducted in Western Canada confirmed that Ruffin-Tuff delivers increased nutrient use efficiency and yield to the crop.



2012 - Elm Creek, MB - AgQuest; 2012 - Lethbridge, AB - Hamman Research; 2013 - Saskatoon, SK - ICMS

INCREASED ROOTING

3D scanning of the roots demonstrates that Ruffin-Tuff increased the root architecture by almost 72% vs. check and 18% more than oxyulfate based micronutrients.



2012 - Elm Creek, MB - AgQuest; 2012 - Lethbridge, AB - Hamman Research; 2013 - Saskatoon, SK - ICMS; Strathmore, SK - Hamman Research



BY IMPROVING THE EARLY SEASON ROOT DEVELOPMENT, RUFFIN-TUFF INCREASED DRY MATTER WHEAT YIELD BY AN AVERAGE 46%.

Product Recommendations

- Using the agronomically approved efficiency factor (5:1), Ruffin-Tuff offers a low rate of product per acre, while still delivering more feeding sites for the plant roots to take up the nutrients.

- Please conduct a soil sample to determine if your soil will be responsive to a granular micronutrient application.
- To view the Ruffin-Tuff SDS and Product Label and to read more information, please visit www.atpag.com

Product	Analysis	Lbs of Nutrients/acre	Application Rate (lbs/ac)	Timing	Form
Zinc	10Zn-7S	1-2	2.0-4.0	Soil	Granular
Copper	5Cu-6S	1-2	4.0-8.0	Soil	Granular
Manganese	8Mn-6S	1-2	2.5-5.0	Soil	Granular
Iron	10Fe-8S	1-2	2.0-4.0	Soil	Granular
Crop Mix II	6Zn-3Mn-1.5Cu-1.5B-8S	1-2	3.5-7.0	Soil	Granular
Canola and Pulse	6Zn-3B-3Mn	1-2	3.5-7.0	Soil	Granular
Cereal	4Zn-4Cu-1Mn	1-2	5.0-10.0	Soil	Granular

Contact your local ATP representative for the maximum seed placed rates.



At ATP, we believe a proactive, science-based approach to restore the balance between plant and soil health is the single most effective way to deliver the genetic potential of the crop. We challenge the status quo by utilizing agtech to monitor and drive productivity.

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