# Evaluation of seed coating treatments in soft white winter wheat

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## OBJECTIVES

To evaluate Specialty Fertilizer Products, LLC (SFP) and Verdesian Life Sciences (VLSci) seed treatments (Tuxedo, Surgent, and Take-Off) individually and in combination for effects on soft white winter wheat growth and grain yield and quality of in Southwest Idaho.

## SEED TREATMENTS

**Proposed benefits:**

**Surgent Micronutrient Seed Treatment**

Proposed benefits:

- ✓ Immediate and Constant source of Zinc & Manganese
- ✓ Stronger emergence, Healthier root growth, Vigorous plant growth, Increased yield potential
- ✓ Patented polymer technology loaded with Zinc & Manganese
- ✓ Enhanced availability of the micros compared to inorganic sources
- ✓ Application rate: 5-6 oz. per 100 pounds of seed

**Tuxedo Micronutrient Seed Treatment**

- ✓ Similar to Surgent, with more concentrated polymer coating.
- ✓ The technology creates an as-needed micronutrient source - protecting Zinc & Manganese from outside interference and keeping it available to the crop longer.
- ✓ The exclusive polymer technology protects zinc from chemically bonding with other compounds and minerals commonly present in the soil - allows for a lower, more economical application rate.

**Take Off Seed Treatment**

- ✓ Accelerates germination, emergence, establishment and canopy closure and pushes the seed toward a faster start, helping plants avoid early-season disease pressures that can inhibit yield potential throughout the growing season.
- ✓ Quicker germination, emergence and growth means the crop achieves greater photosynthetic capacity and better preservation of soil moisture
- ✓ Improves nutrient uptake and utilization
- ✓ Facilitates carbon fixation and increases nitrogen utilization
- ✓ Triggers the plant to grab more available nitrogen and improves plant health to help maximize yield potential

## DISCUSSION

- ✓ Two evaluated winter wheat varieties responded differently to seed treatments.
- ✓ No significant differences in grain yield associated with seed treatment were noted for Brundage.
- ✓ For Stephens, the highest yield was obtained with Surgent seed treat. Tuxedo and Tuxedo + Take-Off products resulted in comparable to traditional seed treat.
- ✓ The lowers yield was obtained with Take-Off.
- ✓ There were not significant differences in test weight associated with seed treatments.
- ✓ Further analysis of grain protein data is pending.
- ✓ The study will be repeated for several years at several locations to draw definite conclusions.

## PRELIMINARY RESULTS

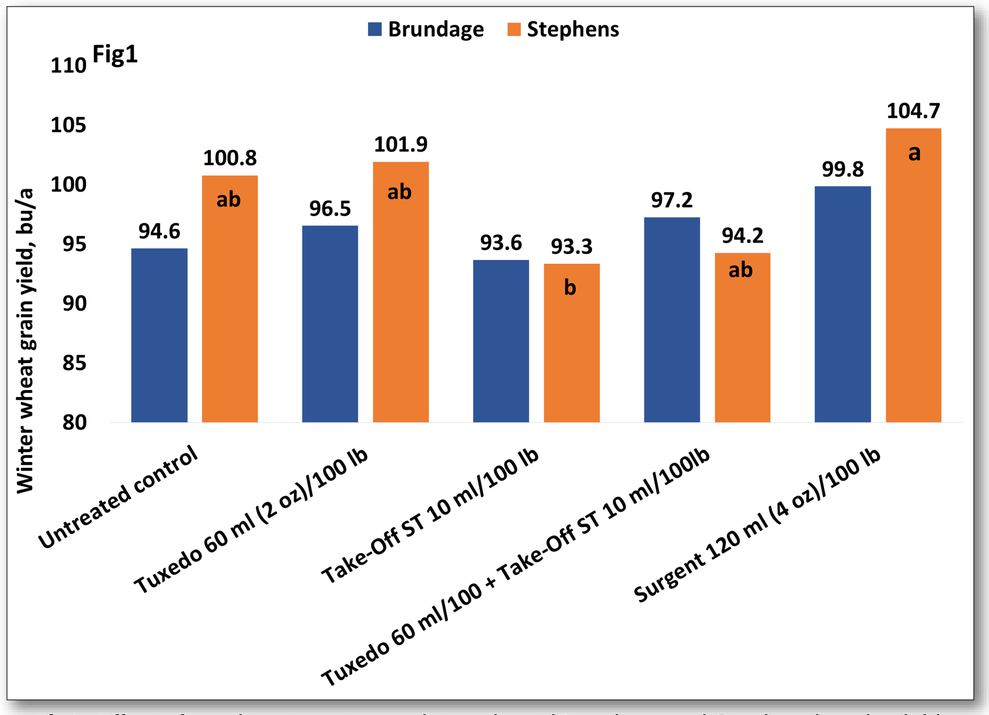


**Fig1.** Effect of seed treatments on winter wheat (Brundage and Stephens) grain yield, Parma, ID, 2015.

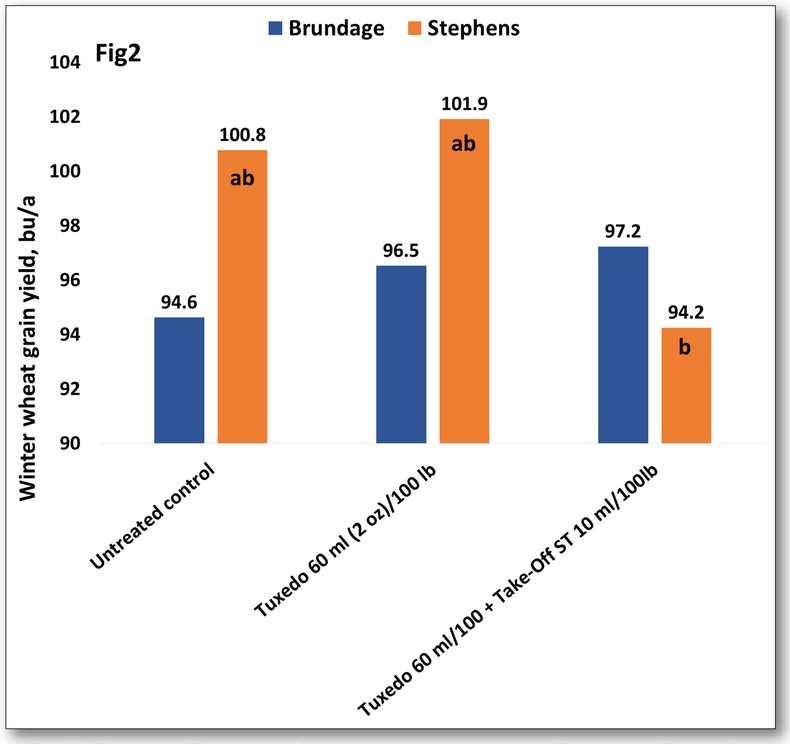


**Fig2.** Effect of Tuxedo (alone) seed treatment vs Tuxedo + Take-Off ST seed treatment on winter wheat (Brundage and Stephens) grain yield, Parma, ID, 2015.

## TREATMENT STRUCTURE

| Trt | Variety | Seed coat treatment |
|---|---|---|
| 1 | Brundage | Untreated control (with commercial seed treatment in place) |
| 2 | Brundage | Tuxedo, 60 ml (2 oz)/100 lb |
| 3 | Brundage | Take-Off ST, 10 ml/100 lb |
| 4 | Brundage | Tuxedo, 60 ml/100 lb + Take-Off ST, 10 ml/100 lb |
| 5 | Brundage | Surgent, 120 ml (4 oz)/100 lb |
| 6 | Stephens | Untreated control (with commercial seed treatment in place) |
| 7 | Stephens | Tuxedo, 60 ml (2 oz)/100 lb |
| 8 | Stephens | Take-Off ST, 10 ml/100 lb |
| 9 | Stephens | Tuxedo, 60 ml/100 lb + Take-Off ST, 10 ml/100 lb |
| 10 | Stephens | Surgent, 120 ml (4 oz)/100 lb |

## MATERIALS AND METHODS

- ✓ Study was conducted at University of Idaho, Southwestern Research & Extension Center, Parma, ID, in 2014-2015.
- ✓ Wheat seed was treated with coating products using a plastic mixer.
- ✓ Brundage and Stephens winter wheat was seeded November 11, 2014, using a 140 lb/a seeding rate, into 10 x 40 ft plots. The crop was sprinkler irrigated every 10 days.
- ✓ The effect of seed coat treatment on winter wheat grain yield has been analyzed with SAS 9.4, using Duncan's Multiple Range Test, at 90% confidence level.

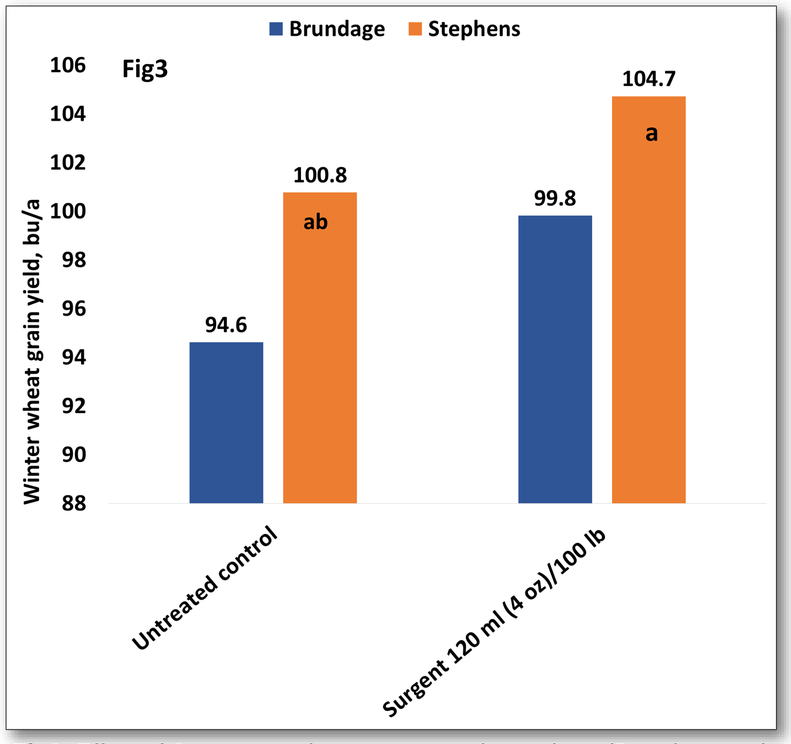


**Fig3.** Effect of Surgent seed treatment on winter wheat (Brundage and Stephens) grain yield, Parma, ID, 2015.


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