



# Comparative Trials in WHEAT/BARLEY

2019/2020 Growing Season

During the 2019/20 growing season, 6.6 million hectares of wheat were planted in Argentina, representing a 6.5% increase compared to the previous season. During this campaign, Kioshi Stone conducted trials with Mist product protocols in wheat and barley crops, in two locations: Rafaela, Santa Fe (carried out by UNL FCA) and INTA Barrow, respectively.

### 1. Trial conducted by UNL FCA in Rafaela.

Crop: **Wheat**

Variety: DM Algarrobo

Treatments: Control

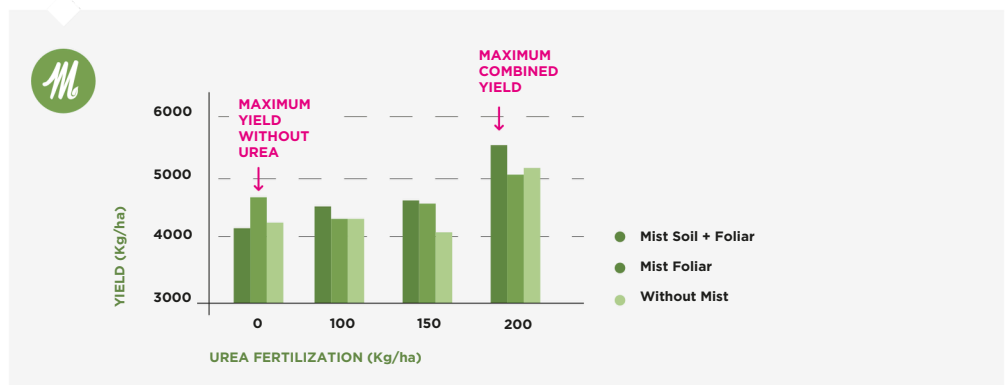
Foliar MIST N 5 l/ha

Soil-applied MIST N 3 l/ha + Foliar 3 l/ha

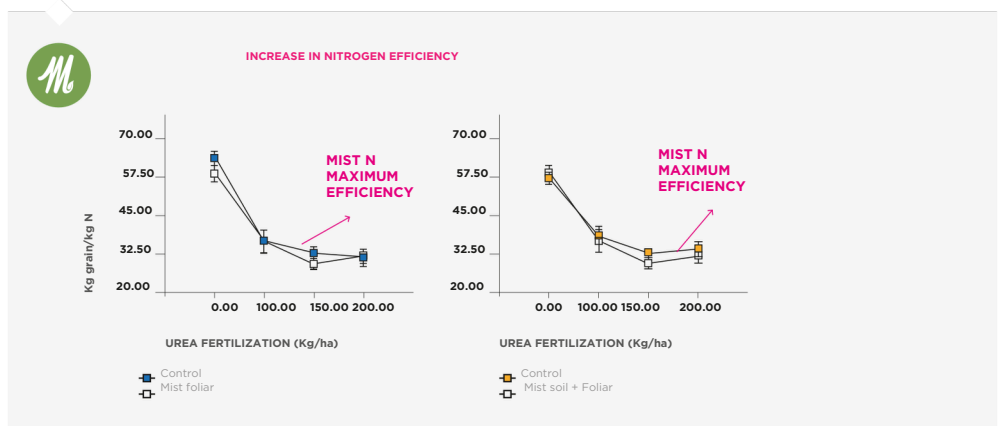
The trials were carried out under different nitrogen availability conditions, generated by fertilization with 0, 100, 150, and 200 kg/ha of urea.

### Results

The treatment with MIST N applied as Soil + Foliar + 200 kg of urea showed a 30% yield increase compared to the control where no urea was applied.



Regarding the relationship between the kilograms of grain and the kilograms of N available at the beginning of the crop (soil + fertilizer), it allows us to estimate the nitrogen use efficiency. It is verified that the combined use of Urea + Mist N improves the nitrogen efficiency curve.



## 2. Chacra Experimental Integrada Barrow (INTA-MDA)

Crop **Barley**

Variety: Andreia

Treatments:

1. Control (without fertilization).
2. Producer's control (100 kg/ha DAP at sowing + 200 kg/ha urea at tillering).
3. 50% dose of traditional chemical fertilization with the addition of Mist (\*).
4. 100% Mist (\*\*).

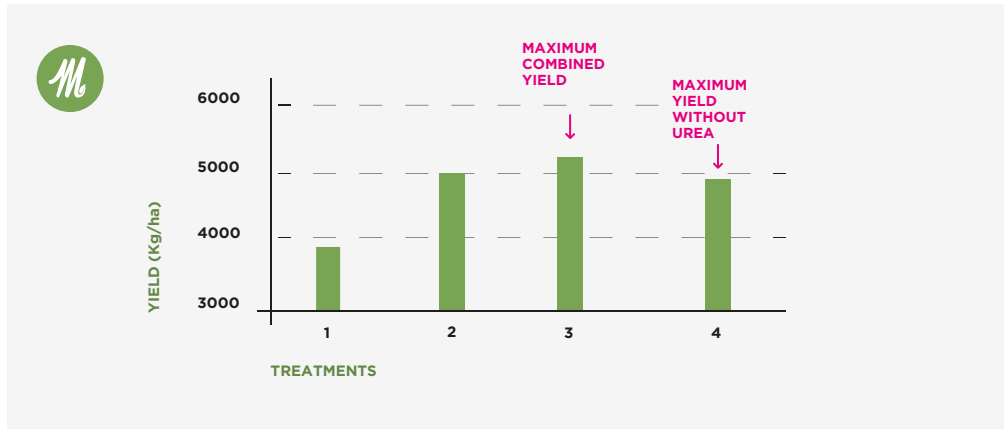
### Results

Statistically significant differences among treatments were detected for yield. All fertilization treatments significantly outperformed the unfertilized control. The most outstanding treatments, both in yield and quality, were the producer's control (2) and the 50% dose of traditional fertilizers with the addition of Mist (3), with no significant differences between them in yield.

The application of different nutrients in the form of nanoparticles improved barley yield by up to 25% compared to the unfertilized control. The use of nanoparticulate fertilizers also enhanced the efficiency of both diammonium phosphate (DAP) and urea.

(\*) 300 cc/100 kg seed of seed biostimulant + 50 kg/ha DAP at sowing + 1.5 L/ha Mist P soil post-sowing + 1.5 L/ha Mist TPS and 100 kg/ha urea at tillering + 3 L/ha Mist N at flag leaf + 1.5 L/ha Mist CLK at heading.

(\*\*) 300 cc/100 kg seed of seed biostimulant + 3 L/ha Mist P soil post-sowing + 3 L/ha Mist N at tillering + 3 L/ha Mist TPS at first node + 3 L/ha Mist N at flag leaf + 3 L/ha Mist CLK at heading.



Finally, after reviewing the two trials conducted in different areas (with varying climate and soil conditions), the efficiency of Mist products, whether applied to the soil or via foliar application, equaled the yield of other fertilization approaches.

Our products are formulated with the objective of ensuring practicality in logistics, storage, and application, while reducing costs as well as the carbon footprint, thereby decreasing environmental pressure.



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