



CORN

Aspire®: Impact on Nitrogen Uptake (Greenhouse Trial)

Objective

- Quantify the impact of Aspire® (0-0-58-0.5B) compared to MOP (0-0-60, potash) on nitrogen (N) uptake and plant growth in corn with low vs. high potassium (K) rates.

Overview

- Optimizing Nitrogen Use Efficiency (NUE) relies on potassium ions (K⁺) to balance the negative charge of nitrate (NO₃⁻) as it is taken up by roots and distributed throughout the corn plant.
- Aspire is an innovative K fertilizer that uses Nutriform® technology to combine potash along with two forms of boron (B) (fast and slow-release) for optimal nutrient delivery and distribution.
- Adequate levels of K, B, and N can aid in nutrient uptake and optimize nutrient recovery. Nutrient efficiencies can be greater with Aspire compared to potash.

Trial Details

CROP: Corn (*Zea mays*) **YEAR:** 2023
LOCATION: Sabanci University, Turkey
DATA SOURCE: Dr. Ismail Cakmak
EXPERIMENTAL DESIGN: Pot trials conducted under greenhouse conditions and averaged across two soil types.

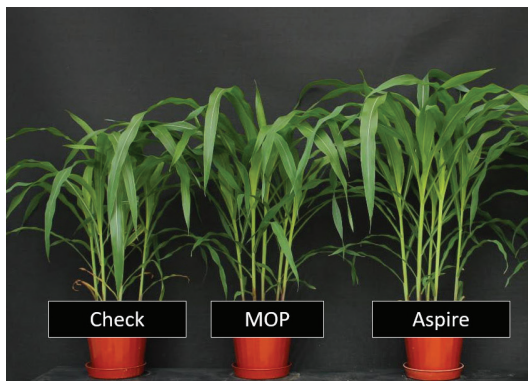
- Loam (7.8 pH, 244 ppm K, 0.1 ppm B)
- Clay (4.6 pH, 81 ppm K, 0.4 ppm B)
- All treatments received N fertilizer.

Treatments:

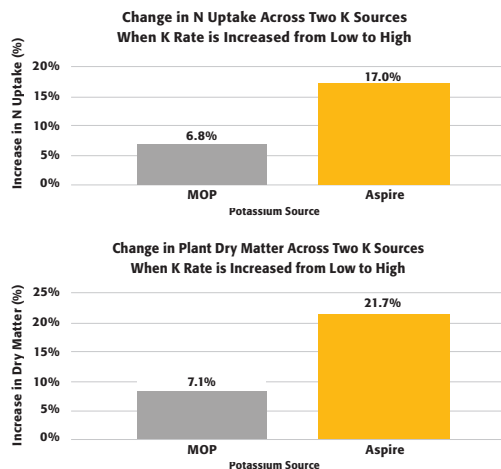
- Low rate of MOP
- High rate of MOP
- Low rate of Aspire
- High rate of Aspire

Study Details:

- Fertilizers were homogeneously mixed with soil, simulating broadcast and incorporated applications.
- Above ground dry matter and nutrient uptake was determined 37 days after planting.



Plant growth with nitrogen only (Check), nitrogen plus MOP (MOP), and nitrogen plus Aspire (Aspire).



Summary

- Increasing the K rate from low to high resulted in increased N uptake and plant dry matter production.
- Aspire applications increased N uptake an additional 10.2% over plants grown with MOP when K rates were increased from low to high.
- The increase in plant dry matter at 37 days (≈V6 growth stage) was 14.6% greater in plants treated with Aspire than those with MOP.
- Nitrogen Use Efficiency in V6 corn can be improved when K and B nutrition is supplied with Aspire compared to MOP, as demonstrated by N uptake and plant dry matter production.



10.2%

Increased N Uptake with Aspire over MOP when K rates were increased from low to high

14.6%

Increased plant dry matter with Aspire over MOP when K rates were increased from low to high



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Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

WARNING: Contains boron. Use of boron may result in crop injury. DO NOT place this product in direct contact with the seed.

For more information, go to [AspireBoron.com](https://www.aspireboron.com).