

# Corn Starter Impacts Early Season Plant and Soil Properties

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## Introduction

- Starter fertilizers are applied at planting close to the seed to provide nutrients to the new seedling until the root system develops.
- High salt fertilizers can inhibit germination and low salt (LS) starters are often promoted to reduce the risk of seedling injury.
- Phosphorus is the most beneficial nutrient in starter fertilizers followed by nitrogen.

## Objectives

- Determine if starter fertilizer formulation or rate influences corn germination, growth, yield or soil electrical conductivity (EC).

## Materials and Methods

- Corn planted 6 June 2019 (AG6472)
- Fertilizers were broadcast applied based on UK Extension recommendations 21 June.
- Measured corn stand, height, and soluble salts in soil.
- Data analyzed with SAS version 9.4
- Treatments
  1. Control (untreated check)
  2. UAN (32%) - 2.5 gal/A
  3. UAN - 5 gal/A
  4. APP (10-34-0)- 2.5 gal/A
  5. APP – 5 gal/A
  6. UAN/APP- 2.5/2.5 gal/A
  7. LS Starter (9-24-3) - 2.5 gal/A
  8. LS Starter – 5 gal/A

## Results

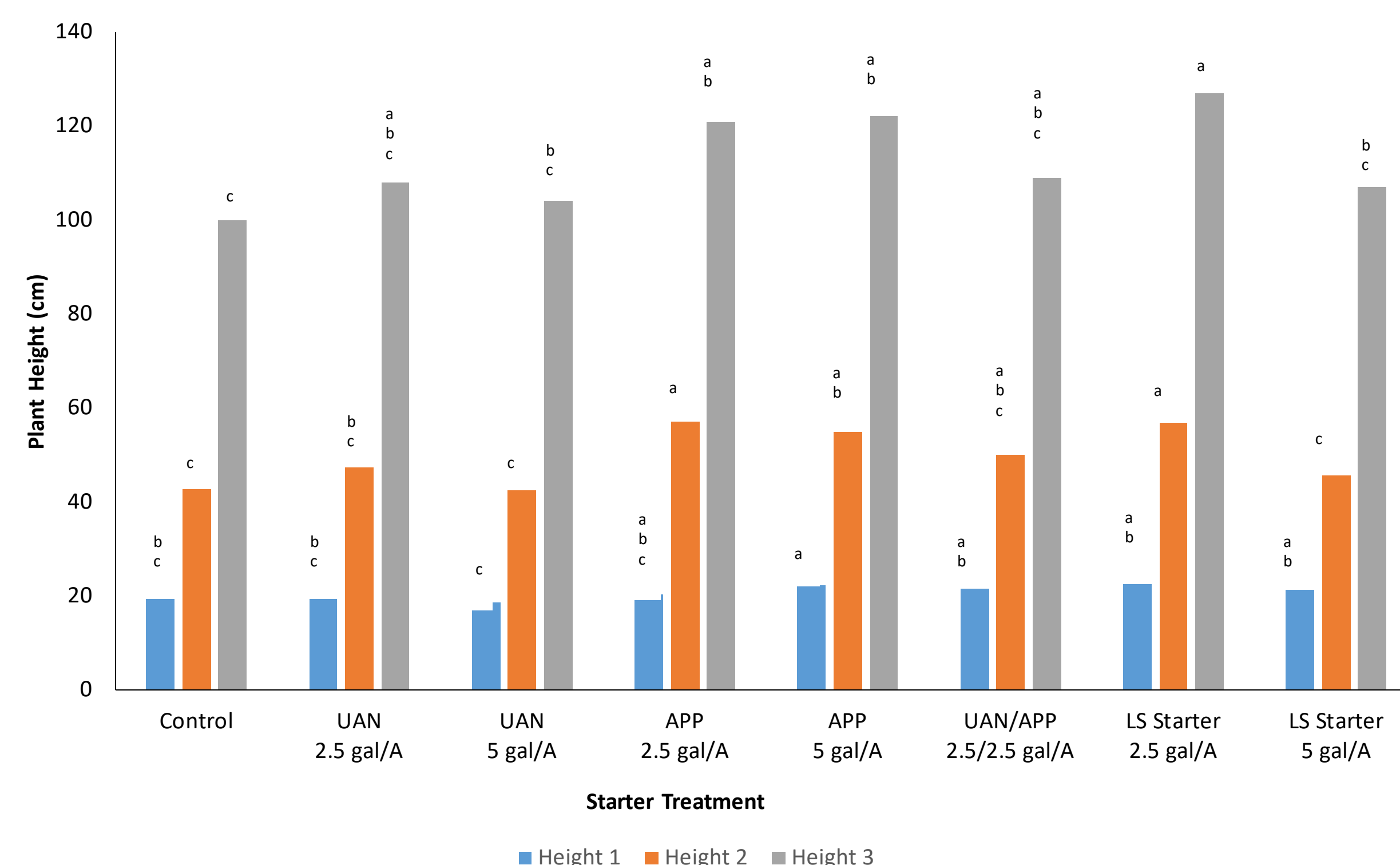


Figure 1. Plant height as influenced by starter formulation and rate. Plant heights collected 21 June, 1 July, and 11 July. Values within a height followed by the same letter are not different at the 0.1 level of probability.

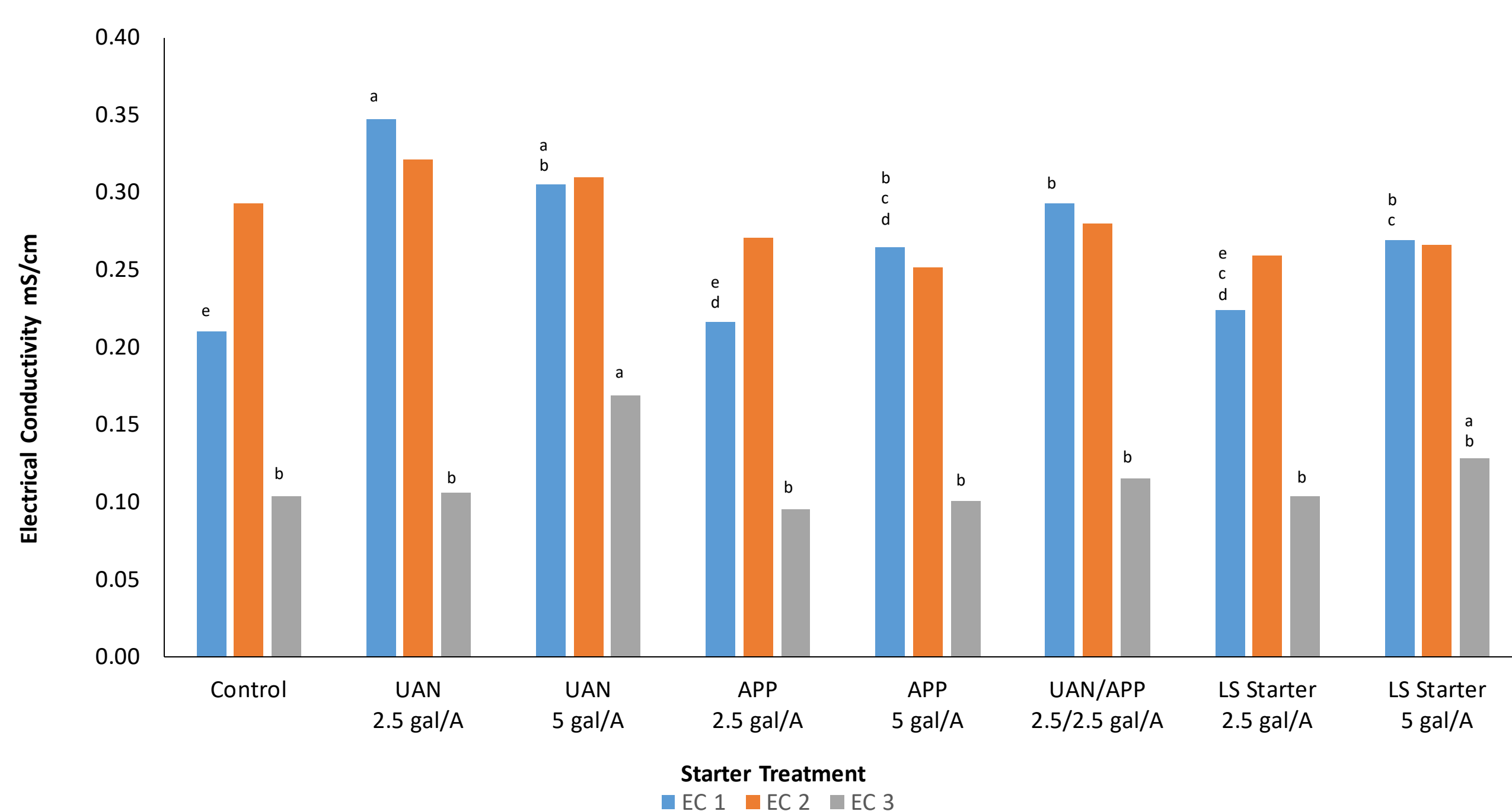


Figure 2. Electrical conductivity (EC) as influenced by starter formulation and rate. EC collected 19 June, 1 July, and 11 July. Values within an EC followed by the same letter are not different at the a 0.1 level of probability.

## Summary

- Starter with N and P resulted in greater plant heights than N alone or the untreated control.
- Generally treatments with UAN resulted in higher EC than treatments without UAN present in the formulation for the 19 June sample date.
- No differences were observed for the 1 July EC measurement.
- EC increased in the 1 July measurement due to leaching of the N-P-K broadcast application on 21 June to the EC sample depth with 2.7 inches of rain.
- Additional leaching resulting from 1.8 inches of rain resulted in a decreased EC for all treatments in the 11 July measurements.
- Starter fertilizer did not influence stand counts at any date.

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