

Organic Corn Seed Coat Treatments

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Introduction

Organic seed treatments have been limited in organic production. Agricoat Natural II™ is reported to be “an organic liquid biological seed treatment applied as a seed film coating and formulated with beneficial microbes, macro and micro nutrients, amino acids, organic acids, enzymes, proteins, vitamins, and minerals.” It is applied to “promote root growth and protect seedlings against early season soil-borne pathogens, improving germination, stand establishment, and uniformity.”

Materials and Methods

Two treatments, replicated eight times in a randomized complete block design, consisted of organic corn seed (BR 3448) treated with AgriCoat Natural II™ (Agricoat LLC, Soledad, CA) and a control (no seed treatment). Seed was planted May 12, 2006, at 32,000 seeds/acre in a certified organic field that had received an application of hoop compost at 12 tons/acre on April 10, 2006. Plots were harrowed on May 22, rotary hoed May 26 and June 1, and cultivated June 5 and 19, 2006. Plant stands were counted

on June 8. Plots were harvested with a combine on November 1, 2006.

Results and Discussion

In 2006, there was no difference in corn stands between treatments (Table 1), despite an average increase of 333 plants/acre with the organic seed treatment. This contrasts with 2005 results, where stands were significantly greater in the treated plots. Yields were also not different, with the coated seed plots yielding 194.5 bu/acre and the uncoated seed plots yielding 196.5 bu/acre (Table 1). These results may have been due to the warmer weather during the May planting of corn compared with cooler weather in 2005. Despite the lack of differences in 2006, yields from this organic variety were excellent, especially under the drought-like conditions of the 2006 season. Protein levels in harvested grain were also greater at 8.5% from the treated seed (Table 2).

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Table 1. Corn stands and yields at Neely-Kinyon Farm, 2006.

Treatment	Corn stands plants/acre	Corn yield bu/acre
Coated seed	26,667	194.5
Uncoated seed	24,667	196.5
LSD (0.05)	NS	NS

Table 2. Corn grain quality at Neely-Kinyon Farm, 2006.

Treatment	Moisture %	Protein %	Oil %	Starch %
Coated seed	15.69	8.49a	3.61	59.97
Uncoated seed	15.86	8.31b	3.63	60.03
LSD (0.05)	NS	0.17	NS	NS