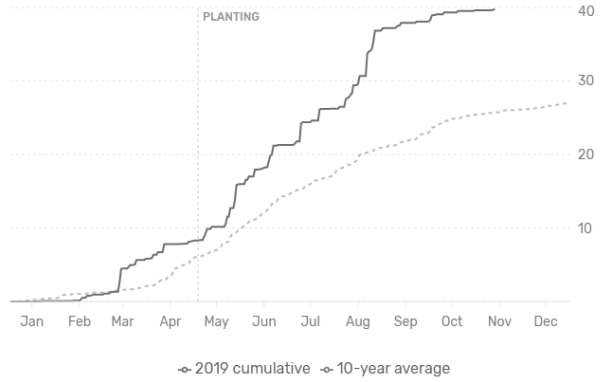
Impact of In-furrow Applied Mycorrhizae Fungi to Non-irrigated Corn

Study ID: 0908079201901
County: Hall
Soil Type: Hobbs silt loam, occasionally flooded, cool; Holdrege silty clay loam, 3-7% slopes eroded
Planting Date: 5/3/19
Harvest Date: 10/7/19
Seeding Rate: 24,500
Row Spacing (in): 30
Variety: Pioneer® P1151AM™
Reps: 7
Previous Crop: Soybean
Tillage: No-Till
Herbicides: ***Pre:*** 1.25 qt/ac Resicore®, 32 oz/ac Durango® DMA, and 1 pt/ac atrazine 4L on 5/10/19 ***Post:*** 32 oz/ac Durango® DMA, 3 oz/ac Status®, and 1.5 pt/ac Warrant® on 6/14/19
Seed Treatment: Standard Pioneer® seed treatments
Foliar Insecticides: None
Foliar Fungicides: None

Fertilizer: 110 lb/ac 11-52-0 (dry) and 10 lb/ac 10% zinc (dry) in January 2019; 35 gal/ac 32-0-0 on 4/10/19; 4 gal/ac 10-34-0 in-furrow starter at planting
Note: Small amount (<5%) of wind damage from July storm.
Irrigation: None
Rainfall (in):



Introduction: This study evaluated MycoApply® EndoPrime™ on corn. MycoApply® EndoPrime™ SC was applied at a rate of 2 oz/ac mixed with 4 gal/ac 10-34-0 starter fertilizer and applied in-furrow during planting. Product active ingredients are at right. Data collected on this study included stand counts, stalk rot, yield, visual root differences, and marginal net return.

VALENT®

Myco Apply® EndoPrime™

Soil Amending Guaranteed Analysis

21.6% Total Active Ingredients
Glomus intraradices . . . . . (5,625 propagules/g)
Glomus mosseae . . . . . (5,625 propagules/g)
Glomus aggregatum . . . . . (5,625 propagules/g)
Glomus etunicatum . . . . . (5,625 propagules/g)
15% Humic acid derived from leonardite
78.4% Total Inert Ingredients (Other)

Results:

	Early Season Stand Count (plants/ac)	Late Season Stand Count (plants/ac)	Stalk Rot (%)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
Check	22,571 A*	24,619 A	4.19 A	19.9 A	235 A	899.09 A
MycoApply Endoprime SC	21,619 B	23,619 A	4.19 A	19.5 B	226 B	857.46 B
P-Value	0.046	0.335	1	0.013	0.003	0.001

*Values with the same letter are not significantly different at a 90% confidence level.
†Yield values are from cleaned yield monitor data. Bushels per acre adjusted to 15.5% moisture.
‡Marginal net return based on $3.83/bu corn and $8.66/ac for Myco-Apply® EndoPrime™.

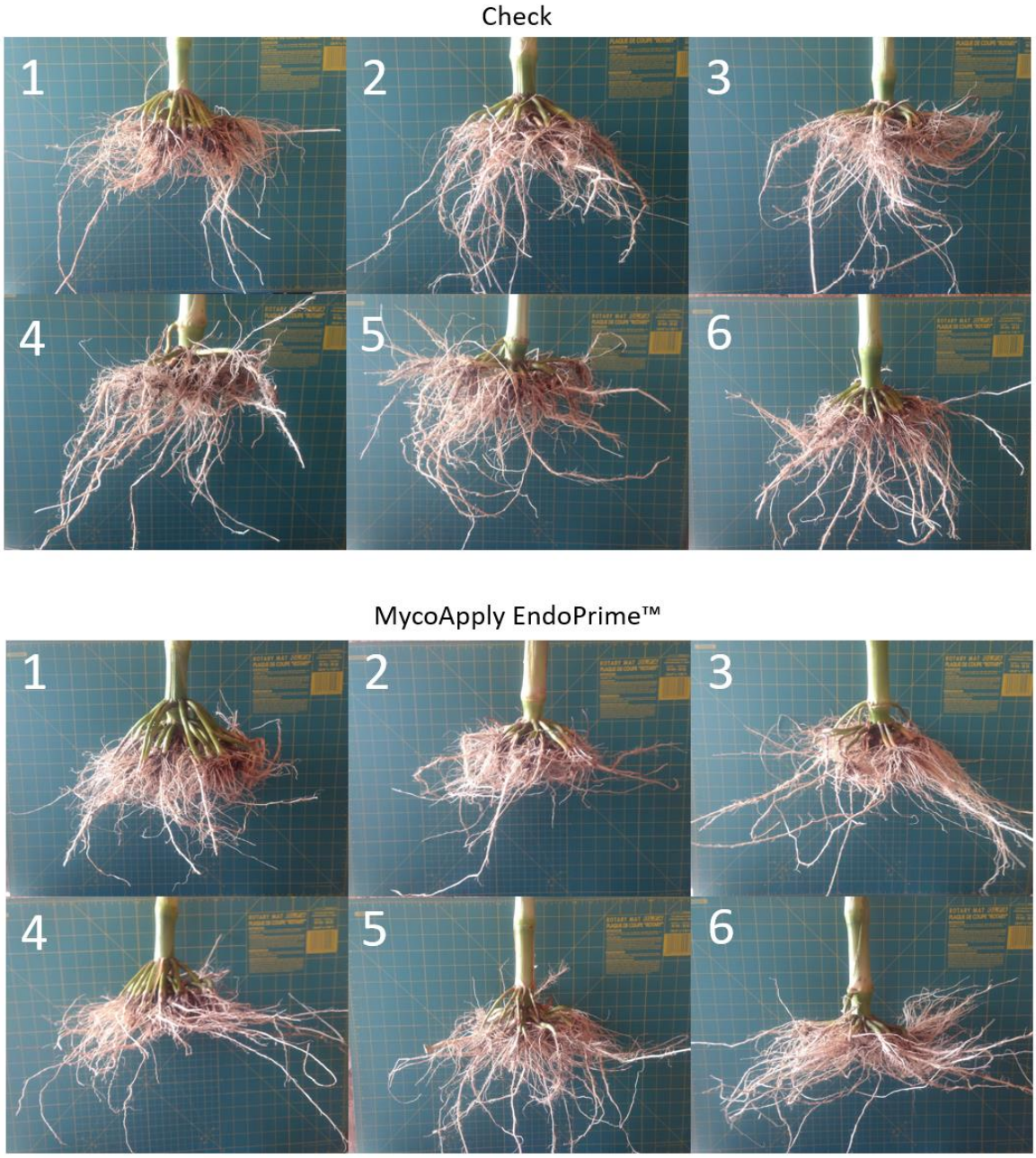


Figure 1. Root digs from six consecutive plants for check (top) and MycoApply® EndoPrime™ (bottom) taken on July 22, 2019. One replication was sampled and photographed.

Summary:

- Early season stand counts on June 5 showed a lower plant stand for the MycoApply® EndoPrime™ treatment compared to the untreated check. However, late season stand counts on September 30 showed no difference between the treatments. The same area was not counted for early and late stand counts.
- There was no difference in stalk rot between the MycoApply® EndoPrime™ treatment and the check.
- The use of MycoApply® EndoPrime™ resulted in lower yield (9 bu/ac) and lower net return ($41.63/ac) compared to the untreated check.

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