

OMRI™
Listed
Organic Materials
Review Institute

EndoFine® SI

SOIL CONDITIONER



ADJUVANTS
plus

1755 Division Road North
Kingsville, Ontario
N9Y 2Y8
(877) 512-4659 toll free



EndoFine® is a registered trademark of Adjuvants Plus Inc.

Sylvan

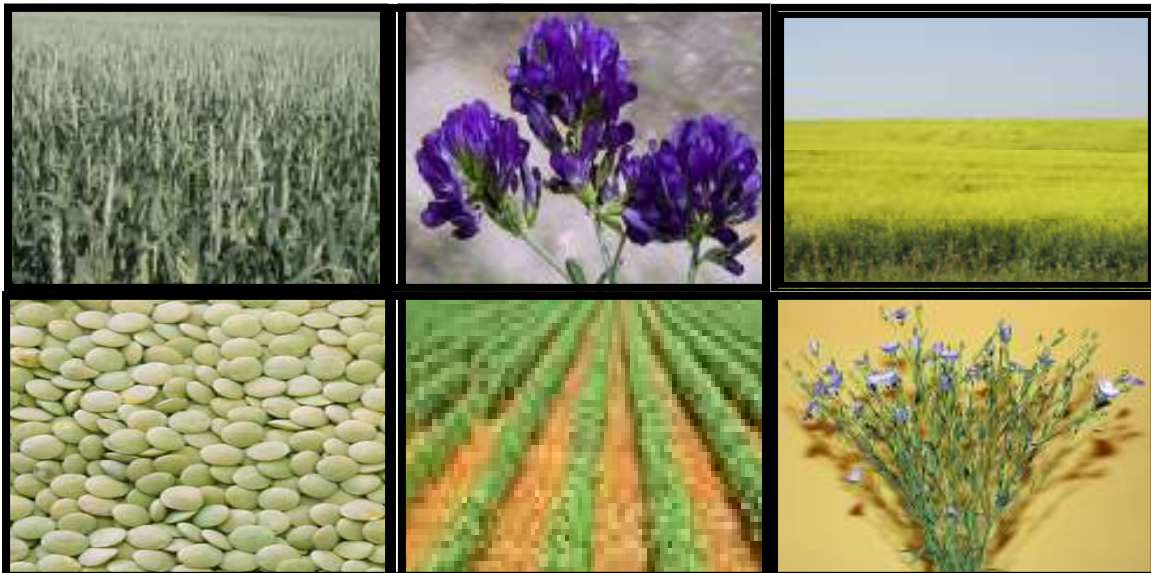
90 Glade Drive
Kittanning, PA 16201
<http://sylvaninc.com>
(866) 352-7520 toll free

EndoFine[®] SI

SOIL CONDITIONER

KEY FEATURES/BENEFITS

- ◆ PRE-DISPOSES PLANT FOR OPTIMAL YIELD AND CROP QUALITY BENEFITS
- ◆ DRY SEED APPLICATION; EASE OF HANDLING; NO LIQUIDS
- ◆ 2006 — 2008 GROWER TESTIMONIALS FOR VALUE ON VARIOUS CROPS — WHEAT, BARLEY, RYE (PULSE) AND LEGUME CROPS — PEAS & SOYBEANS; HIGHER YIELDS, IMPROVED GERMINATION
- ◆ BETTER PLANT ROOT DEVELOPMENT, IMPROVED GERMINATION FOR CROP GROWTH
- ◆ IMPROVES POD SET, TILLERING
- ◆ IMPROVES UTILIZATION OF FERTILIZER N,P,K
- ◆ REDUCES FERTILIZER COSTS
- ◆ IMPROVES NODULATION OF LEGUMES FOR NITROGEN FIXATION
- ◆ IMPROVES PROTEIN LEVELS IN CEREAL CROPS
- ◆ COMPATIBLE WITH SOIL RHIZOBIUM AND BENEFICIAL MICROFLORA



* Varies with growing conditions

**Average Yield Results
Various Crops
2008 Farm Use USA/Canada**

(Multiple farm locations - GPS Yield Data)

	Average Increase - Bu/Acre
Spring Wheat	3.3 bu/acre
Soft Red Winter Wheat	2 bu/acre - Canada 3 bu/acre - USA
Field Peas	3 bu/acre
Flax	2 bu/acre

**Average Yield Results
Various Crops
2007 Farm Use**

(Multiple farm locations - GPS Yield Data)

	<u>Average Increase - Bu/Acre</u>
Soybeans	6 bu/acre
Field Peas	3 bu/acre
Spring Wheat	4 bu/acre
Barley	4 bu/acre

WHEAT / BARLEY



ENDOFINE® SI Soil Conditioner. . . Healthier, Safer, Better Crops . . . Naturally!

EndoFine® SI is the newest development in the product line of naturally occurring soil conditioner to help growers improve the health and yield of wheat and barley crops. With it your crop will benefit from better uptake of nutrients through the natural reduction of plant stresses via the plant itself..

You will:

- lose less production
- use fewer chemical pesticides
- save time spraying
- produce environmentally healthier wheat and barley plants that are less prone to stresses
- have an earlier harvest in some cases

The **EndoFine® SI** has proven to be one of the most capable, organically certified soil conditioners available. It offers growers a realistic and innovative solution for a growing demand for healthier, safer, natural, environment-friendly agricultural crops.

The organism in **EndoFine® SI**, is a mixture of fibrous naturally occurring soil conditioners. It provides improved soil conditions for beneficial microflora, for example Rhizobium species that promotes healthy growth.

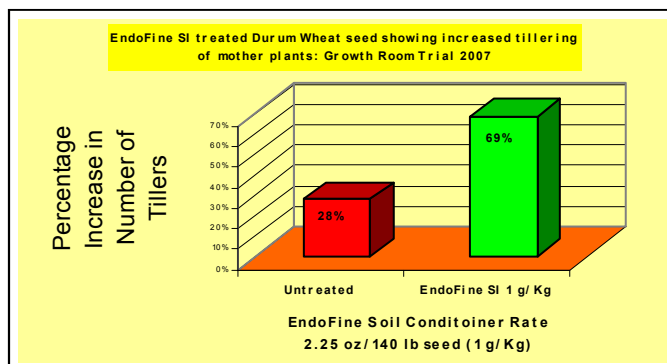
EndoFine® SI is a naturally occurring soil conditioner that is an aggressive beneficial endophyte, which:

- contributes to the uptake of nitrogen (N), phosphates (P) and potassium (K) as well as several micronutrients
- rapidly colonizes plant tissue, establishing a symbiotic relationship
- assists in providing nutrients to plants, enabling them to better tolerate environmental stress factors such as drought, disease, temperature extremes and chemical and microbial pollutants

Field trials show the following feature benefits:

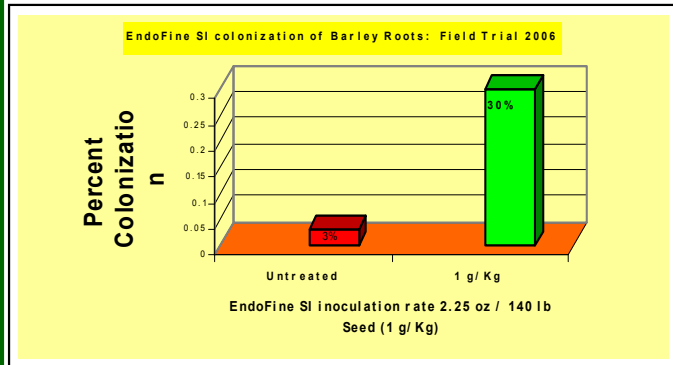
- Rapid emergence
- Faster growth
- Increased tillering
- Improved yields
- Earlier harvest

TILLERING RESPONSE



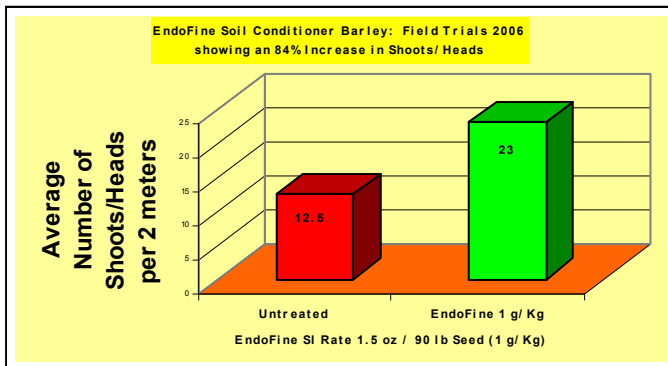
EndoFine® SI helps wheat and barley farmers grow a more profitable crop in a sustainable manner. It does this in a 100% natural organically certified way.

EndoFine SI gives wheat and barley a head start.



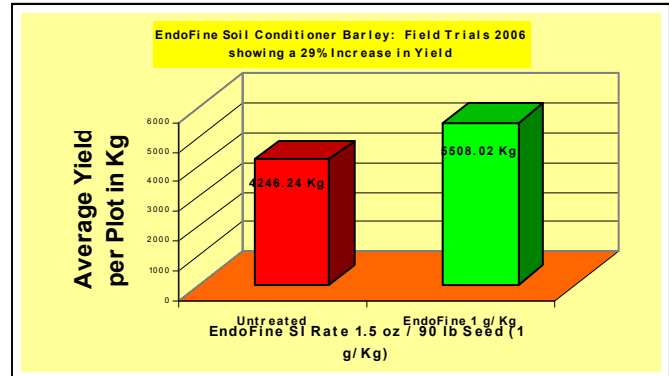
By treating your wheat and barley seeds with **EndoFine® SI** you re-establish the natural relationship between the wheat and barley plants and beneficial organisms in the soil. This encourages beneficial micro-organisms to colonize roots, leaves, stems and shoots, resulting in a more efficient uptake and use of nutrients/micronutrients, thereby achieving quicker plant establishment and producing healthier plants with a greater number of tillers and higher yield.

YIELD RESPONSE



Supplied as a dry powder, **EndoFine® SI** is typically applied at the rate of 2.5 oz./140 lb of wheat seed and 1.5 oz./90 lbs. of barley seed (1 gm/kg of seed).

YIELD RESPONSE



EndoFine® SI delivers a cost-effective, environmentally friendly, and innovative solution for reducing plant stresses, improving the uptake of nutrients and helping plants grow naturally. You enjoy fuller, better-looking wheat and barley plants, rapid root growth, abundant tillers, and larger heads, that can help you get to the market sooner with a quality harvest.

To increase the health and productivity of your wheat and/or barley fields with **EndoFine® SI**, and for more information, contact us at:

Compare

Endofine treated wheat seemed more advanced and healthy than the untreated wheat plants. The higher emergence percentage in the treated plots was readily noticeable.



Untreated Wheat Plants

Endofine Treated Wheat Plants

2008 Grower Results
Hard Red Spring Wheat Seedling
Emergence Comparison
(9 Random x 24 Inch Seed Row Counts Each)

HRSW "Normal Seeding Rate"	HRSW @ 85% Seeding Rate	HRSW "Normal Seeding Rate"
EndoFine @ 1 gm/kilogram	EndoFine @ 1 gram/kilogram	No EndoFine Seed Treatment
31	15	33
40	30	18
19	17	19
24	39	21
35	15	15
47	45	17
30	42	27
18	27	17
39	27	24
283 Emerged Wheat Plants	257 Emerged Wheat Plants	191 Emerged Wheat Plants
	90%	68.5%

- **EndoFine treated seed had a 48% increase in seed emergence; the non-treated seed had a 31.5% reduction in seedling emergence (see photographs)**

Wheat Tillering Comparison Field Trial Manitoba 2008



- ◆ Untreated Portion of the field - 13 viable Tillers within the sample
- ◆ EndoFine treated portion of the field - 17 viable Tillers within the sample

Conclusion: 30% more viable tillers on the EndoFine treated wheat vs. the untreated wheat

SOYBEANS



ENDOFINE® SI Soil Conditioner. . . Healthier, Safer, Better Crops . . . Natu-

EndoFine® SI is the newest development in the product line of soil conditioners to help growers improve the health and yield of soybean crops through the natural reduction of plant stresses via the plant itself. Your crop will benefit from better uptake of nutrients.

You will:

- lose less production,
- use fewer chemical pesticides
- save time spraying
- produce environmentally healthier soybean plants
- less prone to stresses and resulting in some cases
- earlier harvest.

The **EndoFine® SI** has proven to be one of the most capable, organically approved soil conditioners available, finally offering growers a realistic and innovative solution for a growing demand for healthier, safer agricultural crops, environment friendly naturally!

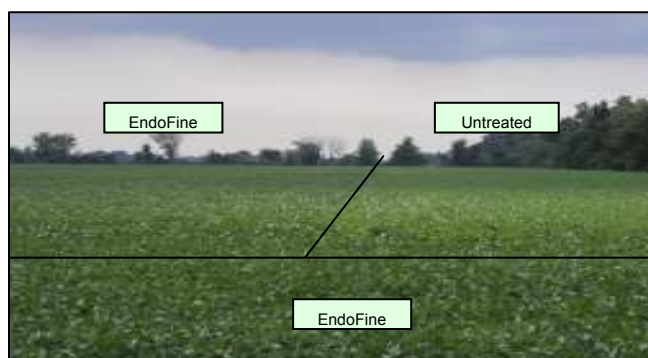
The organism in **EndoFine® SI** contains a unique patented strain of *Clonostachys rosea*, is the key to its success. *C. rosea* is naturally present in almost all soil types around the world, particularly in virgin soils.

EndoFine® SI is a naturally occurring soil conditioner that is an aggressive beneficial endophyte, which:

- Contributes to the uptake of nitrogen (N), phosphates (P), potassium (K), as well as several micronutrients
- Rapidly encourages colonization of plant tissue establishing a symbiotic relationship
- Assists in providing nutrients to plants allowing plants to better tolerate stresses, reduces environmental stress factors such as drought, disease, temperature extremes and chemical, microbial pollutants.

Field trials show the following feature benefits:

- Improved yields



EndoFine® SI growth response to soybean seeds



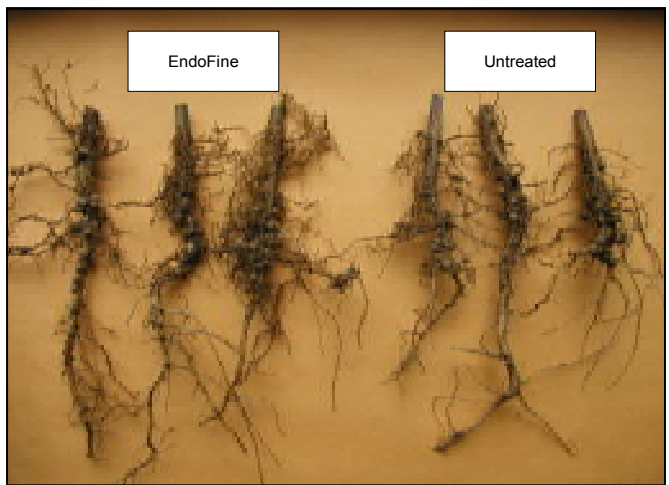
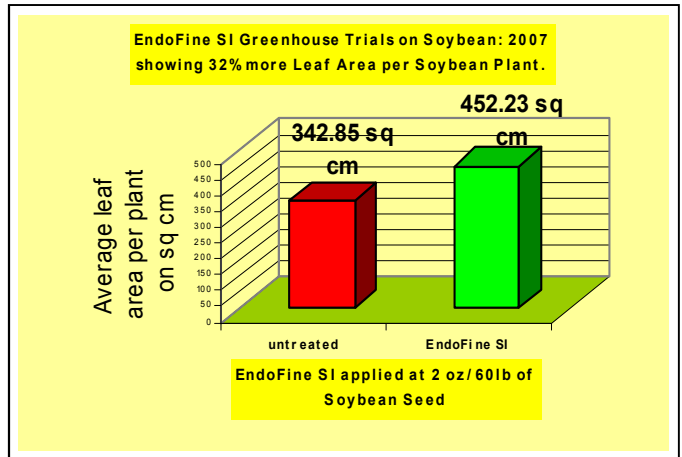
EndoFine® SI soil conditioner assists beneficial microflora to colonize. This helps soybean growers grow a more profitable crop in a sustainable manner. It does this in a 100% natural organically approved way.

EndoFine® SI gives soybeans a head start.

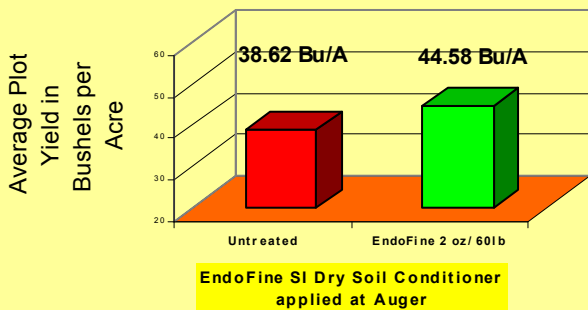
By using **EndoFine® SI** you re-establish the natural relationship between the soy plant and beneficial microflora, encouraging it to colonize roots, leaves, stems and shoots resulting in a more efficient uptake and use of nutrients/micronutrients, thereby getting quicker plant establishment, producing healthier plants and higher yield.

Yield Response

Soybean Growth (University Trial)



EndoFine SI soil conditioner Soybean: Field Demo 2006 showing a 15% Increase in Yield



Supplied as a dry powder, **EndoFine® SI** is typically applied to seed at 2 oz./60 lb. soybean seed (2 grams/kg of seed)

In all **EndoFine® SI** delivers a cost-effective, environmentally friendly, and innovative solution for reducing plant stresses, improving the uptake of nutrients and helping plants grow naturally. You enjoy fuller, better looking soybean plants, rapid root growth, abundant flowers and pods, faster growth that can help you get to the market sooner with a quality harvest.

To increase the health of your soybean fields with **EndoFine® SI**, and for more information contact us at:

The information contained herein is believed to be accurate and true. Please consult label for warranty.

Field Peas Grower Results 2008

Plant Counts

EndoFine® SI Applied to Pea Seed Area

(5 X 20 foot seed row sections
EMERGED PLANT COUNT)

Random Count	#1	#2	#3	#4	#5
# seedlings emerged	126 plants	127 plants	118 plants	129 plants	118 plants
AVERAGE	123.6 Plants				

Rhizobium only Pea Seed

Area (5 X 20 foot seed row sections
EMERGED PLANT COUNT)

Random Count	#1	#2	#3	#4	#5
# seedlings emerged	94 plants	89 plants	109 plants	90 plants	117 plants
AVERAGE	99.8 Plants				

***Conclusion: 24% increase in emergence for EndoFine tested seed vs.
Rhizobium treated seed.**

EndoFine SI on Field Peas 1 gm/kg of seed

Manitoba 2008

23.7% better emergence in the Endofine portion of the field



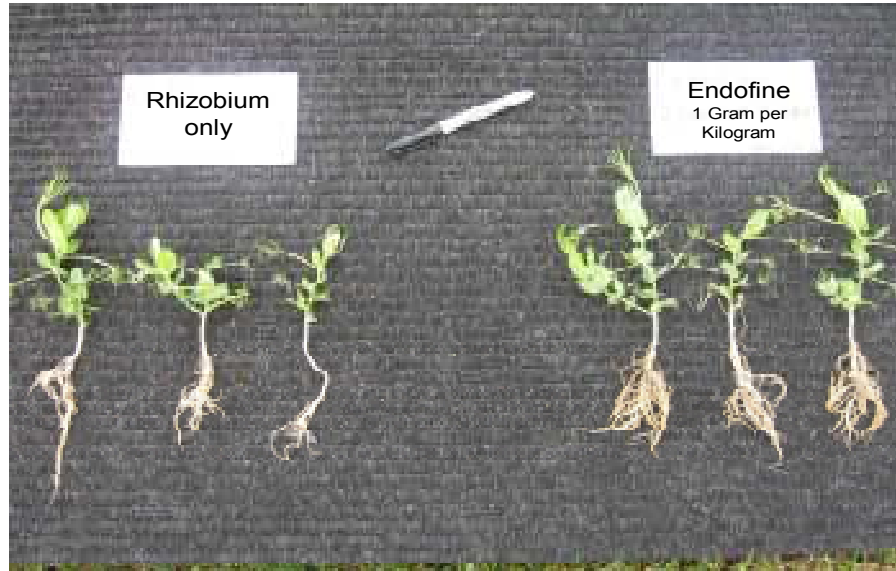
Endofine Treated
(darker, greener, thicker stand)



Rhizobium only

Field Peas

Plant Height / Fibrous Root Density



Field Peas

Fibrous Root Development and Nodulation



* Photos from Manitoba Farm Results 2008

Field Peas 2008 Farm Results

Nitrogen Fixing Nodulation Count (Three Plant Random Sampling)

- **Untreated** Portion of the Field

—Plant #1 - 7 Nodules	}	→	Average 7.0 Nodules per Plant
—Plant #2 - 5 Nodules			
—Plant #3 - 9 Nodules			

- **EndoFine Treated** Portion of the Field

—Plant #1 – 49 Nodules	}	→	Average 34.3 Nodules per
—Plant #2 – 12 Nodules			
—Plant #3 – 42 Nodules			

- **Conclusion:** A 5X or 80% increase in nodulation for nitrogen fixation

Flax

2008 Farm Results

Flax Seedling Emergence Comparison (12 Random x 24 Inch Seed Row Counts each)

FLAX “Normal Seeding Rate”	FLAX @ 85% Seeding Rate	FLAX “Normal Seeding Rate”
EndoFine @ 1 gram/kilogram	EndoFine @ 1 gram/kilogram	No EndoFine Seed Treatment
50	48	45
58	43	71
59	47	119
98	97	45
116	93	32
75	85	75
33	55	62
64	96	63
47	51	95
92	40	43
51	51	59
73	68	62
816 Emerged Flax Plants	774 Emerged Wheat Plants	772 Emerged Flax Plants
	94.8%	94.6%

- **Conclusion:** EndoFine treated seed had a 5.7% increase in seed emergence.
(See photograph)

FLAX

Manitoba 2008 Farm Results

**Endofine SI Dry Seed Application
1 Gram/kg seed**



5-6% Better emergence under ideal planting conditions

Untreated Flax Seedlings



Although the treated Flax looked good, it was not as advanced or robust looking as the treated Flax.

Seedling Growth Comparison

Endofine treated seedlings were taller on average.
Average treated plant was like the tallest untreated plant.



Flax Comparison of Root / Shoot

Most of the noticeable differences were above the soil surface, as roots looked very similar
darker green foliage and more robust plants in the treated portion of the field



Side by Side Comparison of Eight (8) flax seedlings each



Field Peas Alberta 2006

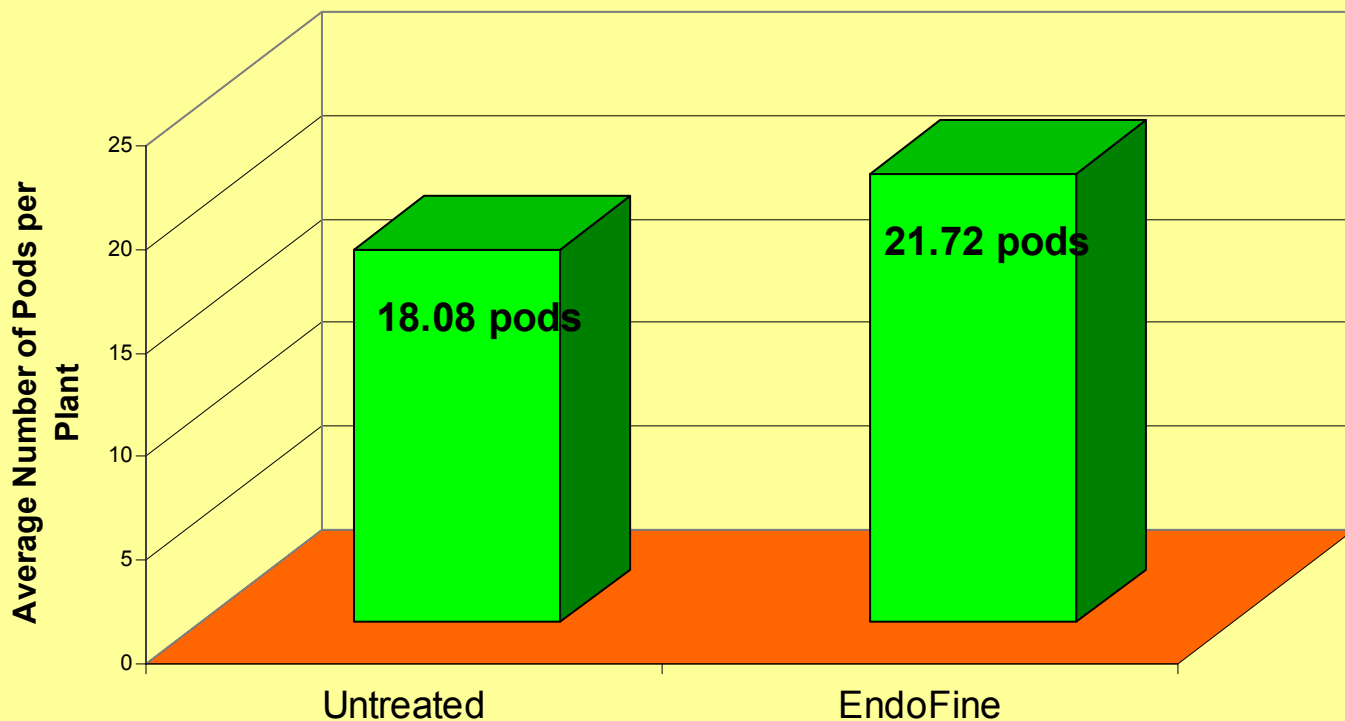


Root Growth

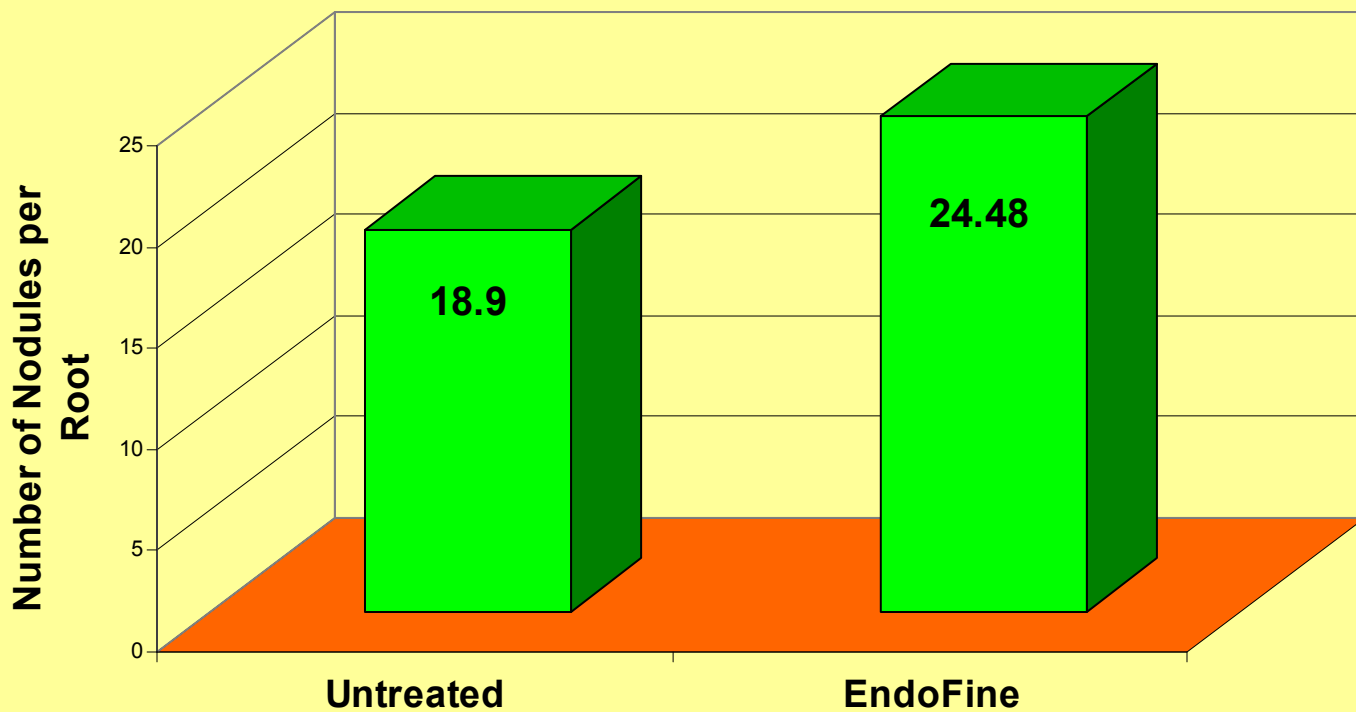


EndoFine[®] SI

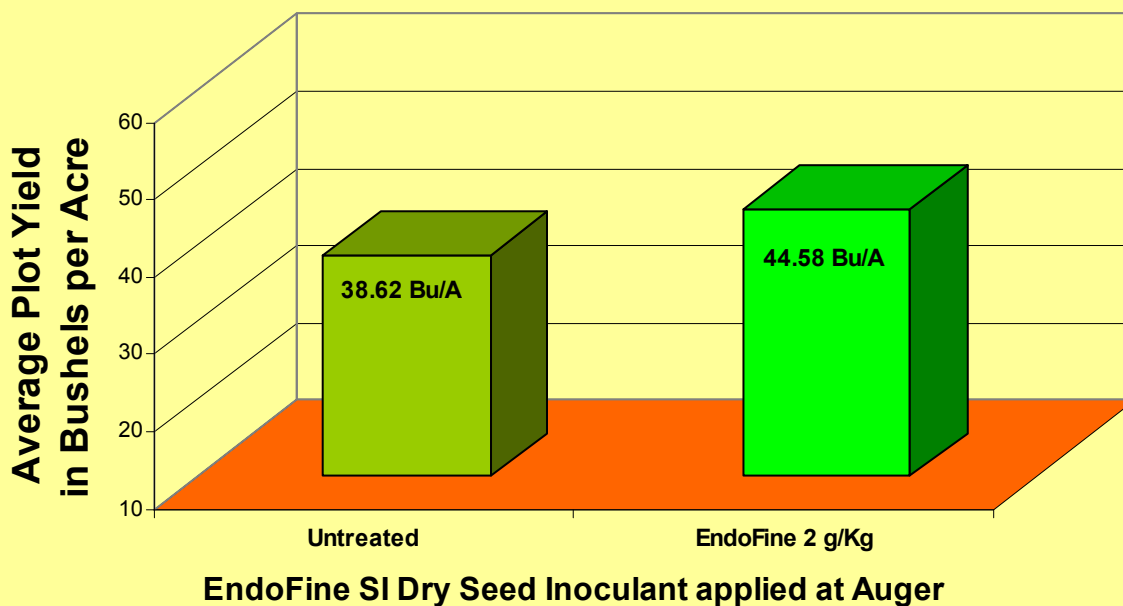
Denotter Farms, A.C. Kent Soybeans
Seed Treated with EndoFine 2006 showing a 20 % increase in Pods



Denotter Farms, A.C. Kent Soybeans
Seed Treated with EndoFine 2006 showing a 29% increase in nodules



**EndoFine SI Inoculated Food Grade Soybeans: 2006
showing a 15% Increase in Yield**



University of Guelph Growth Room Trials with EndoFine SI Soil Conditioner Field Peas: June 2007: showing a 40% and 33% increase respectively in the Fresh Weight of Whole Pods and Shelled Peas

