



 **Avicta[®] Complete**
Beans

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Triple Protection Against Damaging Nematodes, Insects and Diseases

Avicta[®] 500 FS is a Restricted Use Pesticide.

What is Avicta Complete Beans?

- A combination of separately registered products containing Avicta[®] seed treatment nematicide and CruiserMaxx[®] Beans insecticide/fungicide seed treatment combination
- Offers immediate, consistent and reliable triple protection against nematodes, insects and diseases.
- Protects fields during the first three to four weeks after planting, helping ensure each seed reaches its full genetic yield potential.
- Helps complement the performance of nematode-resistant soybean varieties by offering an additional mode of action to protect against nematode damage.

Key Benefits

- Helps promote healthy, vigorous seedlings from day one.
- Proven to help increase plant stand, vigor, speed to canopy, uniformity and yield potential.
- Offers consistent protection against most damaging nematode species, including soybean cyst.
- Instantly protects against a wide variety of early-season insects and disease pathogens.
- Convenient on-the-seed treatment.
- Improves efficiency and reduces labor and replanting costs.
- Protects seed investment and the value of the traits and genetics by shielding the soybean plant when it is most vulnerable.
- Delivers positive return on investment.

Nematode Protection

Avicta, the nematicide component of Avicta Complete Beans and a true nematicide, provides advanced protection against most major yield-limiting nematode species including:

- Root-knot
- Reniform
- Lance
- Lesion
- Stubby-root
- Stunt
- Sting
- Soybean cyst

Insect Protection

Containing the active ingredient found in market-leading seed treatment insecticide Cruiser®, Avicta Complete Beans targets pests from emergence through the first weeks of development, offering consistent and reliable protection against early-season insect pests including:

- Thrips
- Threecornered alfalfa hopper
- Grape colaspis
- Leafhopper
- White grub
- Soybean aphid
- Bean leaf beetle
- Seedcorn maggot
- Wireworm

Disease Protection

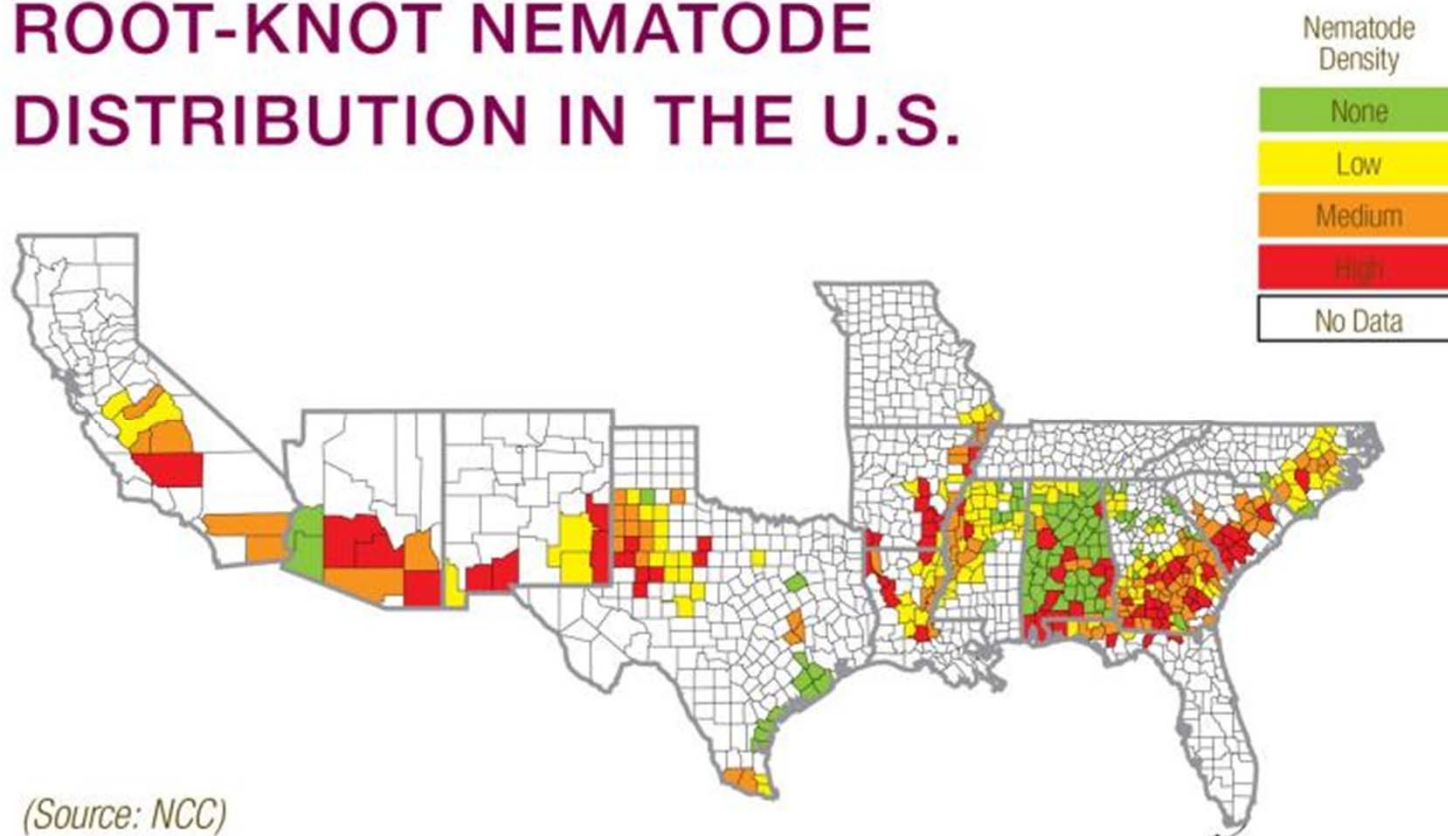
Avicta Complete Beans contains the fungicide active ingredients found in market-leading ApronMaxx® seed treatment fungicide to protect soybean plants from harmful diseases that hinder emergence and growth, potentially leading to reduced stand, vigor and yield. Avicta Complete Beans protects against the following disease pathogens:

- Early-season *Phytophthora*
- *Pythium*
- *Rhizoctonia*
- *Fusarium*
- *Sclerotinia* (white mold)
- *Phomopsis*
- General seed rots

Soybean Nematode Facts

- Soybean nematodes arise in any soil type, but damage is usually more apparent in sandier soils, or under stress conditions.
- Certain types of nematodes can be difficult to diagnose.
- Changing production practices such as an increase in no-till and minimum-till farming are escalating soybean nematode populations and increasing their threat to soybean production.

ROOT-KNOT NEMATODE DISTRIBUTION IN THE U.S.

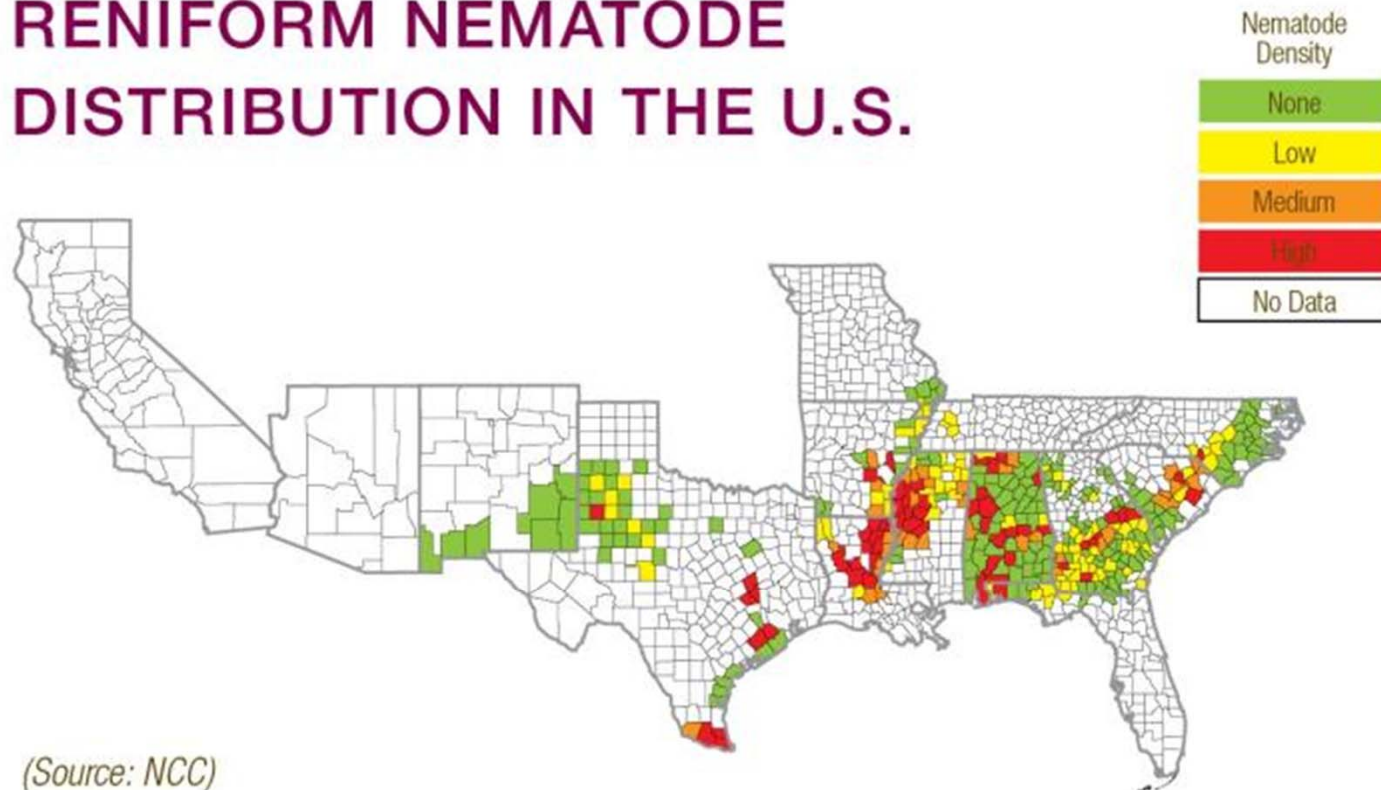


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RENIFORM NEMATODE DISTRIBUTION IN THE U.S.



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Soybean Nematode Damage

- Soybean nematode damage is frequently misdiagnosed since many symptoms can be attributed to other problems.
- Symptoms can include:
 - Root branching
 - Dark, stunted roots
 - Swollen roots
 - Visible galls on roots
 - Reduced feeder roots
 - Poor plant stand
 - Chlorosis or yellowing of the leaves
 - Stunted plants

Soybean Nematode Damage

- Often times, nematode damage may be impacting crop yield even if there are no visual symptoms.
- Growers who historically have battled nematodes in their cotton and corn fields can expect to see yield loss from nematodes in their soybean crops.
- A crop rotation of cotton, corn and soybeans is not an effective method of inhibiting some nematode populations.
- Because cotton, corn and soybean are host crops to several of the same nematode species, growers need to implement a treatment program to ensure soybean fields are adequately protected.

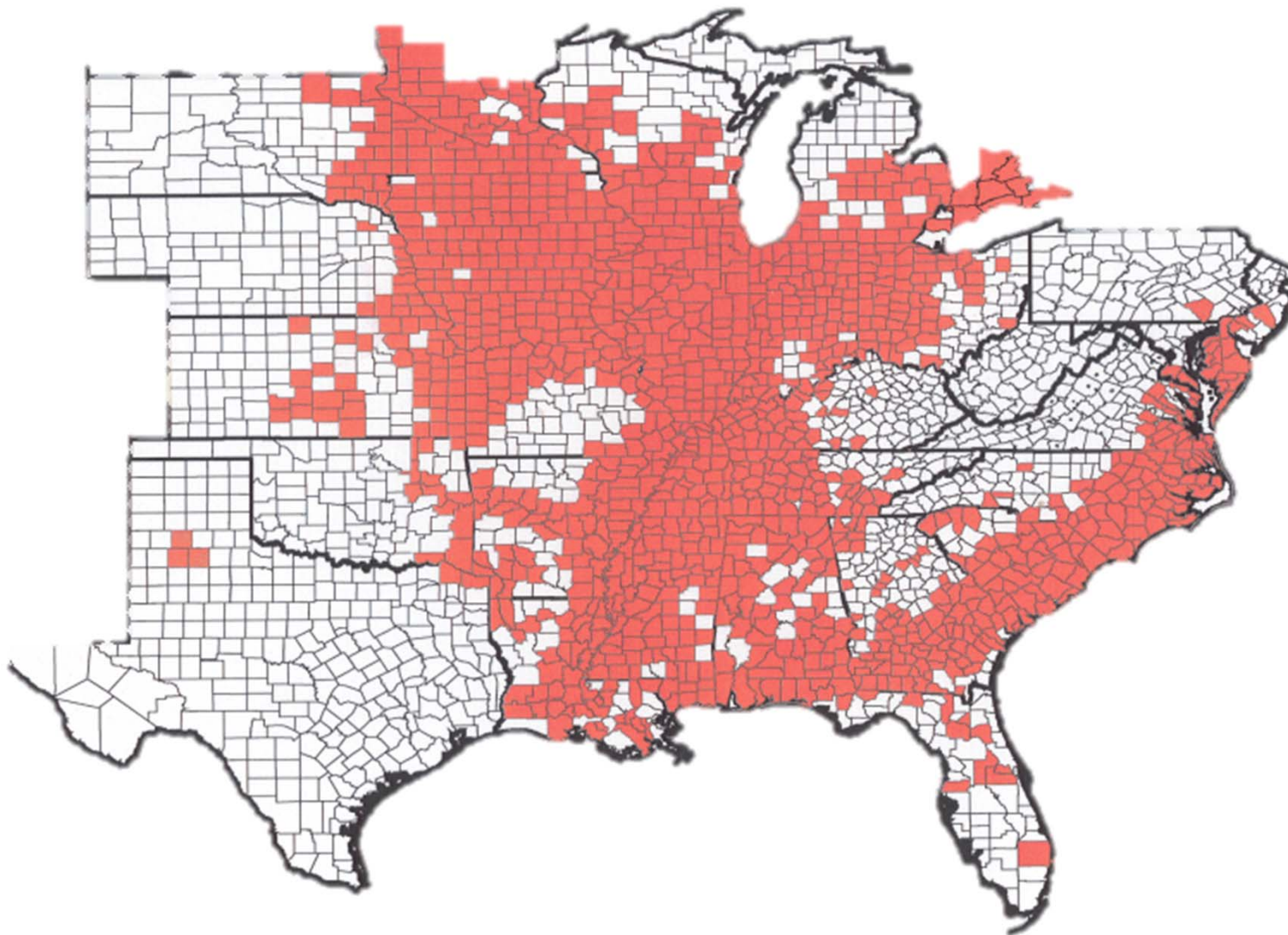
Soybean Cyst Nematode (SCN)

- A plant-parasitic nematode and a major yield-limiting pest in soybeans.
- Under optimum conditions, completes life cycle in 24 to 30 days.
- Infects the roots of soybeans to establish specialized feeding sites, while the female nematode eventually becomes a cyst.
- Symptoms vary but can include suppression of root and shoot growth, chlorosis of the leaves, reduced nodulation, loss of seed yield, and tiny white or yellow cysts on the roots.
 - Symptoms are often confused with nutrient deficiency, stress from drought, herbicide injury or other diseases.

Soybean Cyst Nematode (SCN)

- Observation of adult females and cysts on the roots is the only accurate way to detect and diagnose SCN infection in the field.
- Cultural practices, including crop rotation and the use of resistant cultivars, are used to decrease damage from SCN.
 - Not an effective method of destroying nematode populations.
 - No rescue treatment to offset impact of early-season damage.

Soybean Cyst Nematode Distribution



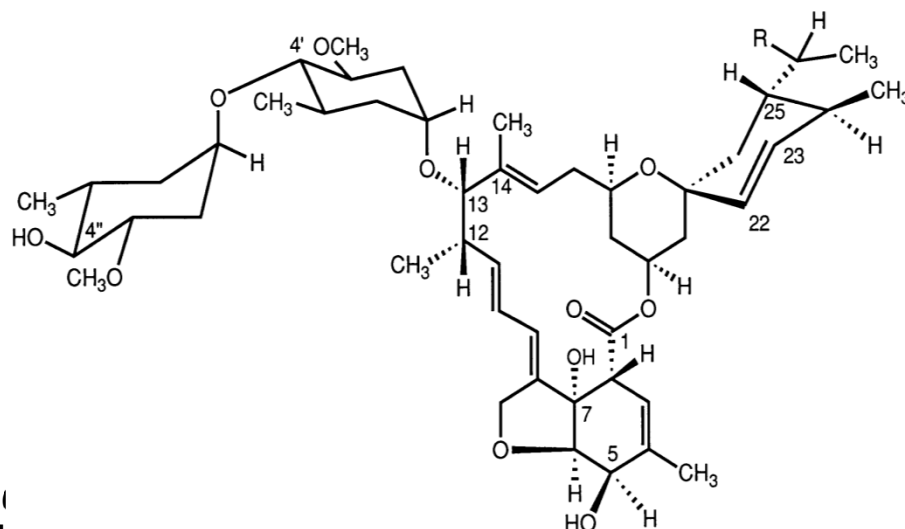
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What is Abamectin?

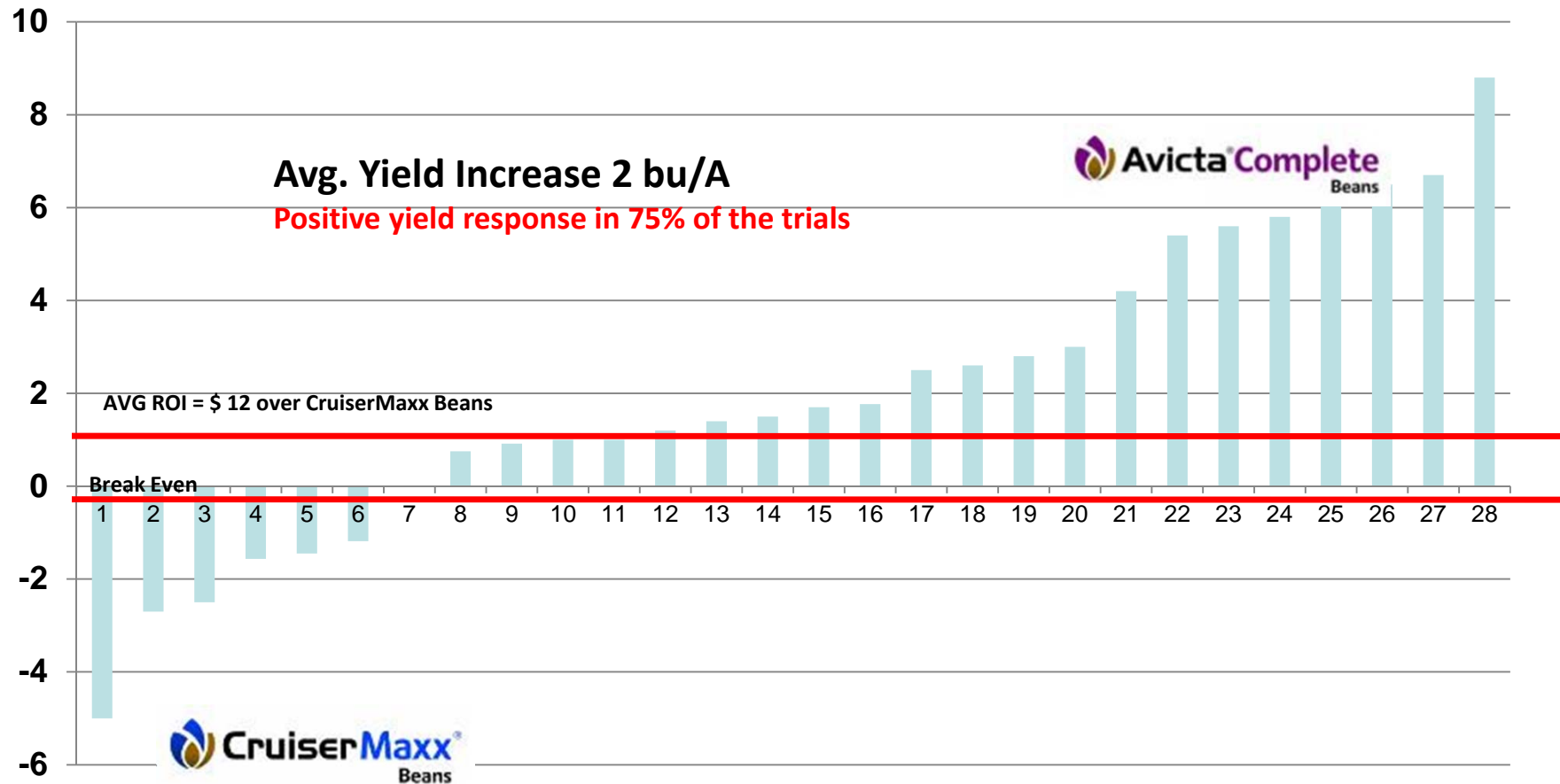
- The active ingredient in Avicta, the nematicide component of Avicta Complete Beans
- Stimulates release of the neurotransmitter GABA
- Chloride ions flow into cells blocking nerve impulses
- Pests are paralyzed irreversibly within hours
- Greater reduction in oxygen uptake and mobility at 1 and 24 hours than aldicarb (Nordmeyer & Dickson 1989)
- Depending upon species and life stage – maximum mortality can take up to 4 days



~80% avermectin B1a

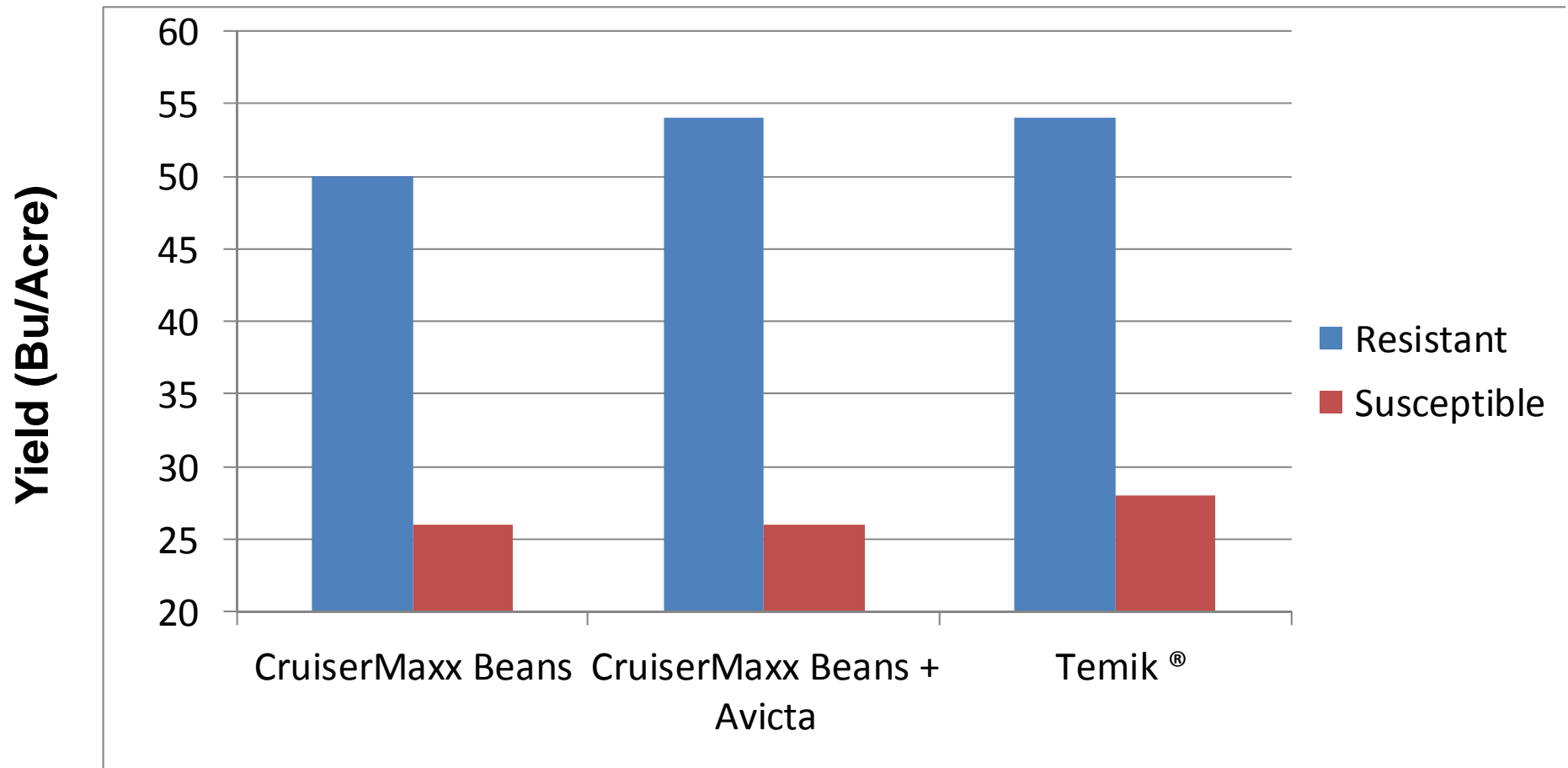
~20% of avermectin B1b

Efficacy of Avicta Complete Beans on Soybean Cyst Nematode in the South (AR-NC)



- 28 trials (2005- 2009)
- Avicta Complete Beans was applied to known SCN resistant varieties
- ROI was determined based on \$8.50 beans per bushel

Soybean Yields (Root-knot Resistant vs. Susceptible)



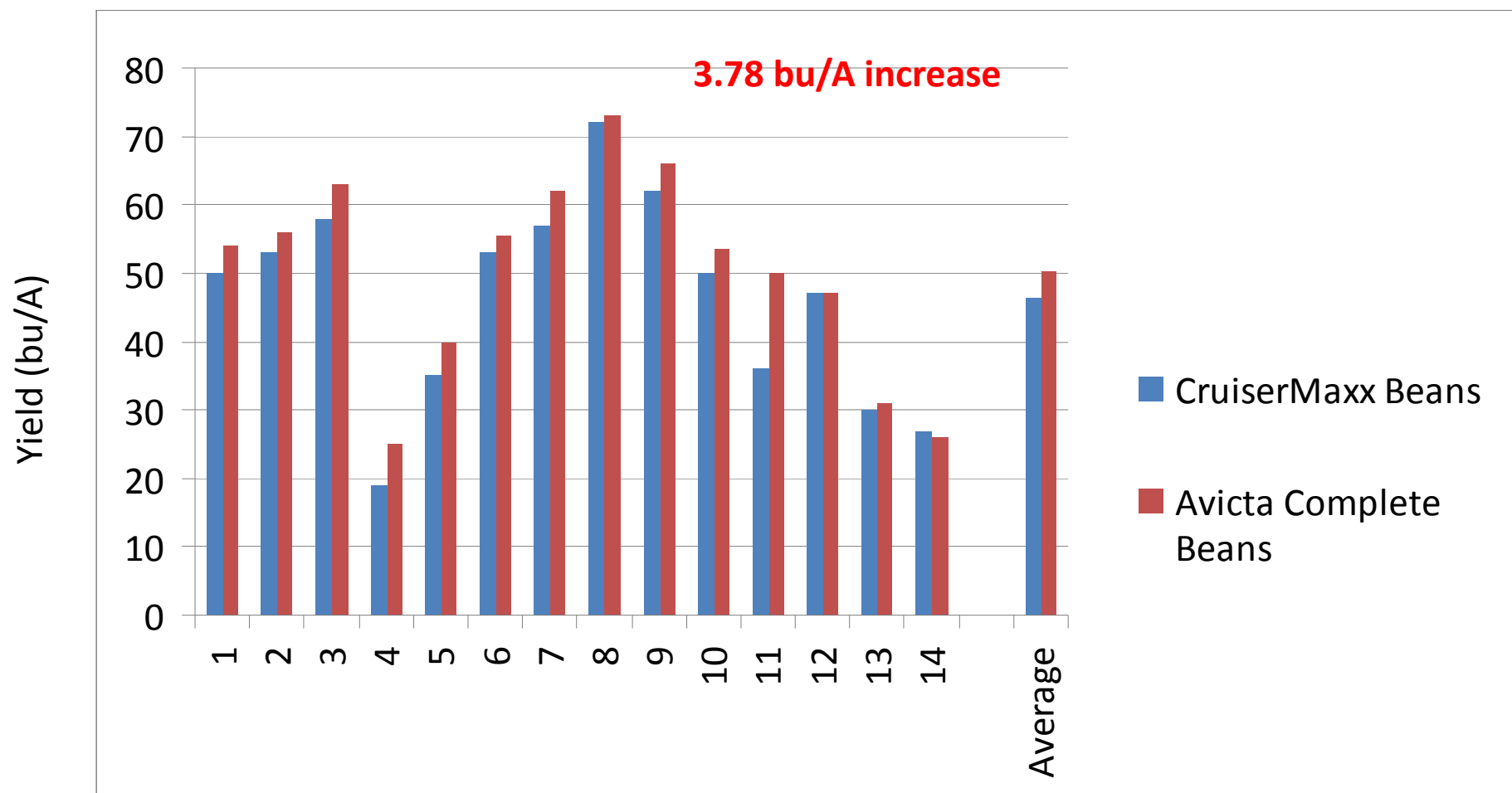
Dr. Scott Monfort – Univ. of Arkansas

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Efficacy of Avicta Complete Beans on Root-knot Nematode (2008-2009) – AR, LA, MS, NC

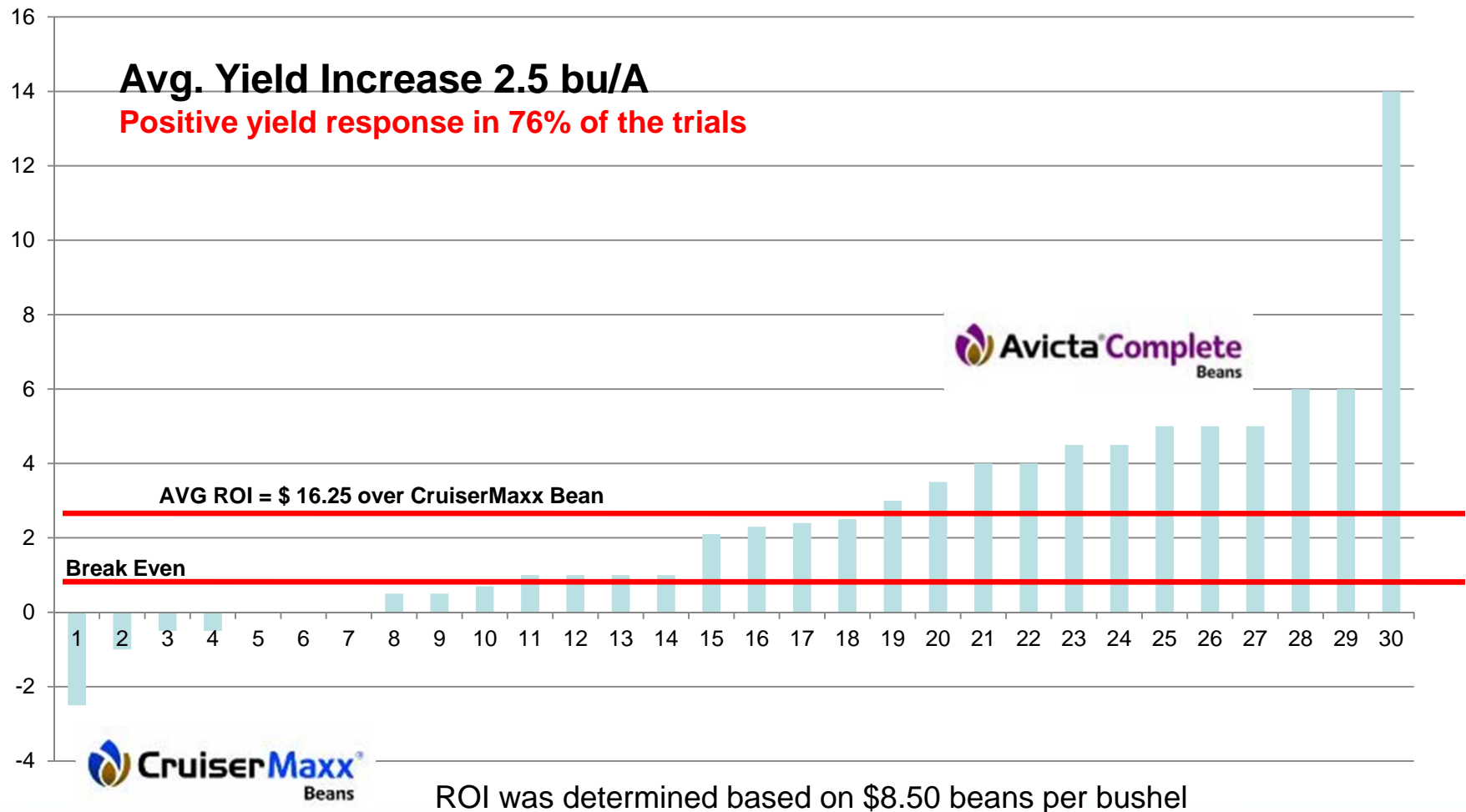


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Efficacy of Avicta Complete Beans on Root-knot nematode (2008-2010)



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Soybean plants treated with CruiserMaxx Beans (right) have smaller roots than plants treated with Avicta Complete Beans (left).



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 **CruiserMaxx[®]**
Beans

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2010 Soybean Seed Treatment Trial

Tim Britton – Agent
Johnston County Extension
Smithfield, NC
2 WAP

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Avicta Complete Beans is a combination of separately registered products containing Avicta 500 FS nematicide, plus one or more of the following products: CruiserMaxx premix; CruiserMaxx Plus; Cruiser 5FS, Apron XL and Maxim 4FS; or Cruiser 5FS and an ApronMaxx fungicide. CruiserMaxx Beans is one or more separately registered products containing the following: CruiserMaxx premix; CruiserMaxx Plus; CruiserMaxx and Apron XL; Cruiser 5FS, Maxim and Apron XL; or Cruiser 5FS and an ApronMaxx brand fungicide.

Avicta technology is protected by U.S. Patent No. 6,875,727.

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