

## *Plant Growth Hormone Technology*



ENHANCE EARLY SEASON VIGOR.



DRIVE MAXIMUM ROOT GROWTH.



REDUCE STRESS.



MAXIMIZE YIELD POTENTIAL.



SUPPORT INCREASED PROFITS.

# **Capitalize on a Proven Formulation of Plant Growth Hormones**

Radiate® is a patented formulation of IBA & Kinetin, in optimized ratios, to enhance early season vigor and drive maximum root growth. The proven technology in Radiate provides growers consistent performance across a wide variety of crops.

By delivering these essential plant hormones in the optimum ratio, Radiate drives maximum root growth, improves plant vigor and reduces plant stress during the critical vegetative growth stages.

Radiate can be used as a foliar application during the two-to six-leaf growth period (V2-V6) or applied in-furrow at planting.

## **IBA and Kinetin**

IBA is a type of plant hormone called an auxin. Produced in the plant shoots, IBA and other auxins travel downwards to the roots, stimulating plant growth and development, including the formation of roots. Working in the opposite direction, kinetin and other cytokinins are produced at the root tips and travel up the plant, promoting cell division and other processes vital to plant growth. In Radiate, IBA and kinetin are combined in the optimum ratio to maximize physiological processes in the plant that drive root and shoot growth.

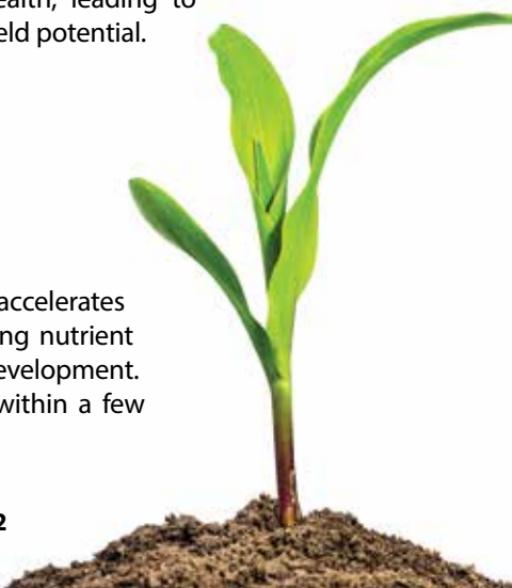
## **Greater Plant Vigor, Less Plant Stress**

Until a seedling's root system is well established, it must not only survive on a finite source of nourishment, but it is also very vulnerable to stunting or damage from a wide variety of stresses. The faster the nodal root system grows, the greater the chance of a healthy plant that can withstand environmental stress and produce maximum yields.

Radiate is a proven solution for accelerating nodal root growth. It can be used on most crops to improve early season plant vigor, reduce early season stress and improve overall plant health, leading to increased root mass and optimized yield potential.

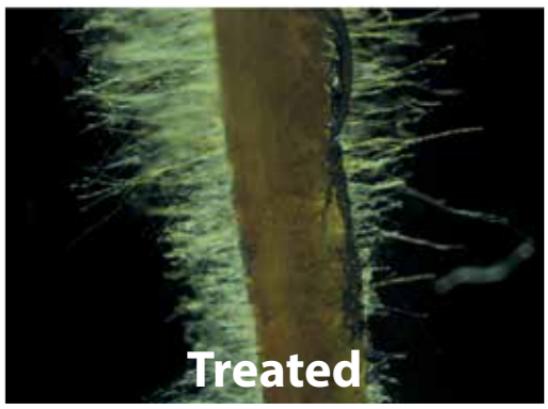
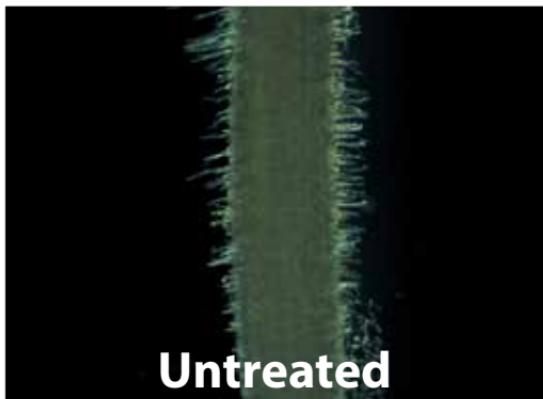
## **More Root Mass, Better Nutrient Uptake**

Applying Radiate improves and accelerates the growth of root biomass, increasing nutrient uptake and improving plant development. Increased growth can be observed within a few days of applying Radiate.



## Radiate's Effect on Root Hairs

Radiate improves the growth of the primary root system and significantly increases the number of root hairs that are responsible for much of the plant's nutrient and water uptake.



# How It Works

## Without Radiate:

- ✓ Less vigorous plant
- ✓ Fewer root hairs
- ✓ Plant vulnerable to stunting or damage from variety of stresses

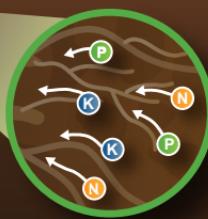
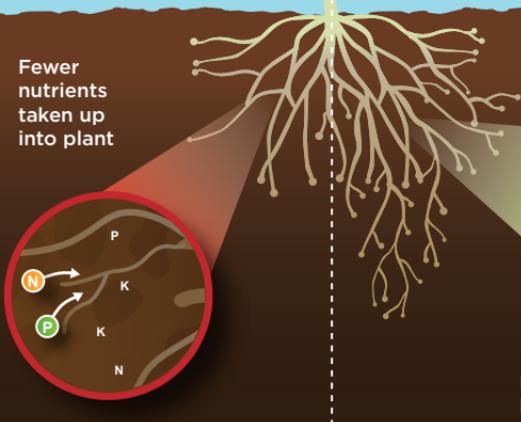


## With Radiate

- ✓ Increased ability to produce auxin and cytokinins
- ✓ Enhanced root development, including more lateral roots and root hairs
- ✓ Greater early season plant vigor
- ✓ Reduced plant stress

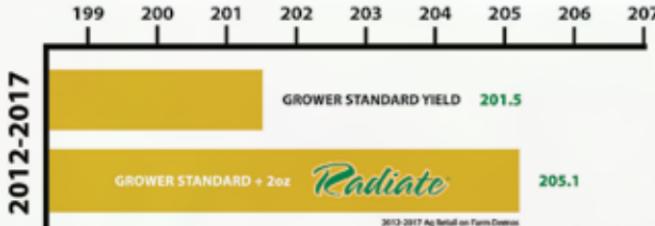
Foliar application in V2-V6 stage of growth or in-furrow application at planting

Plant hormones IBA and kinetin stimulate plant and root growth, also increasing the plant's ability to make more of these essential hormones



Healthy, more developed root system increases nutrient and water uptake

# 67 CORN TRIALS



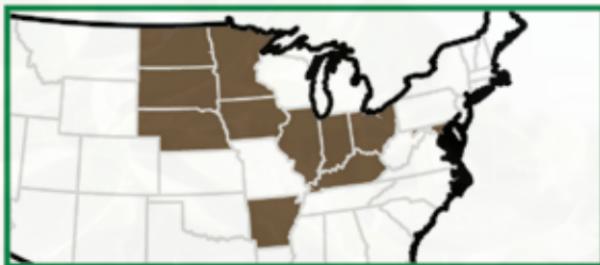
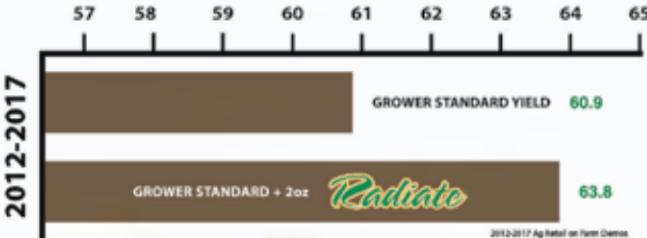
**GROWER STANDARD**



**RADIATE**



# 99 SOYBEAN TRIALS



**Soybean Pod Counts**  
Radiate foliar applied at V3 at 2 oz/acre



152 total  
3 bean  
pods/ft

Untreated

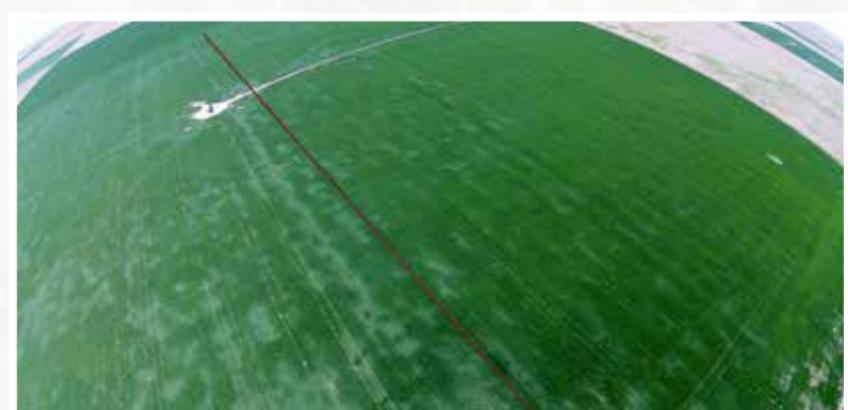
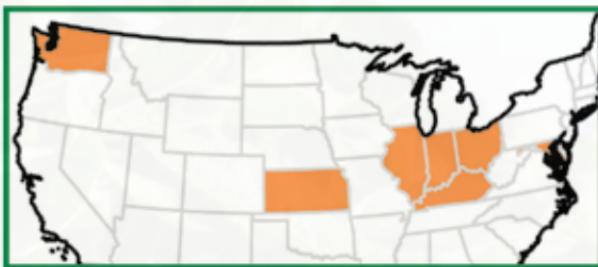
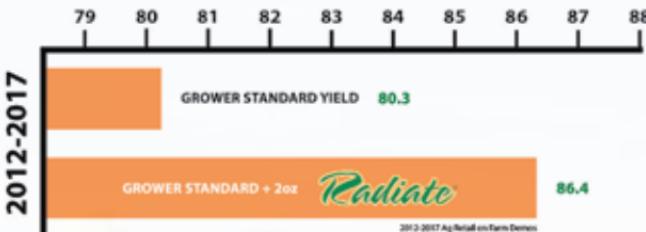


189 total  
3 bean  
pods/ft

Treated with

**Radiate**

# 14 WHEAT TRIALS

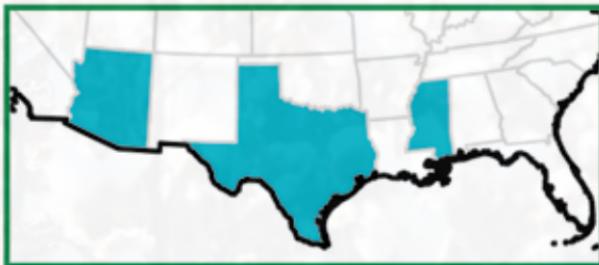
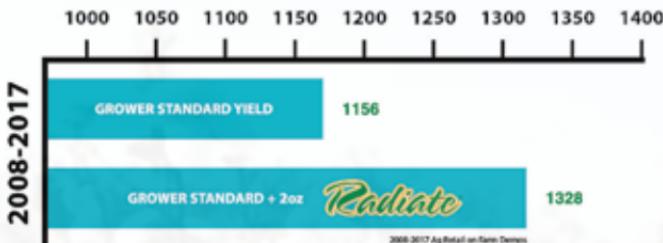


**GROWER STANDARD**

VS.

**RADIATE**

## 6 COTTON TRIALS

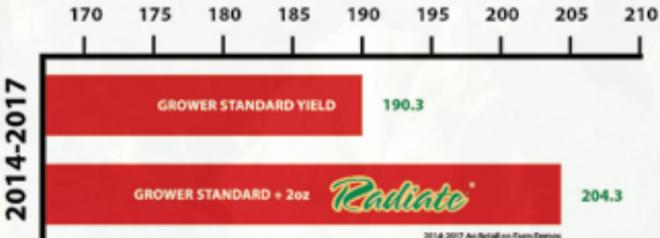


Treated with <b>Radiate</b>	1.9 Bales/Acre
Untreated Control	1.3 Bales/Acre

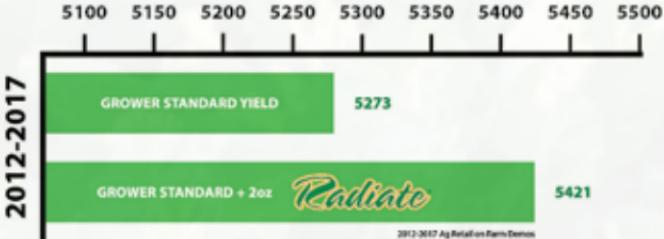
**Increase  
of 0.6  
bales/acre**  
**+46%  
more vs.  
check**

## 7 RICE TRIALS

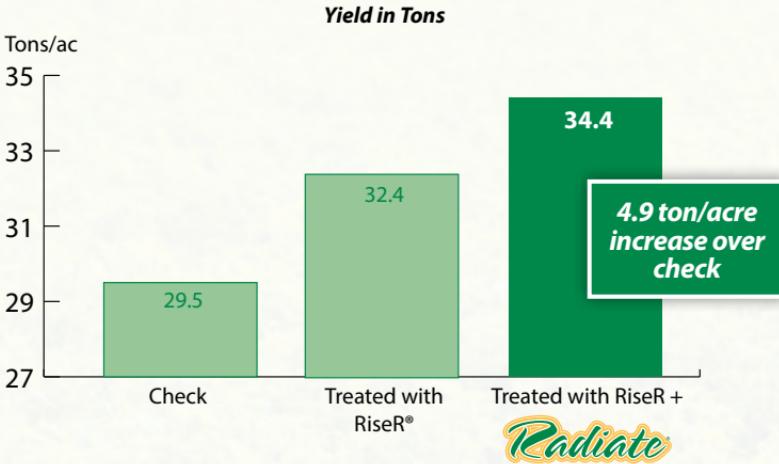
w/Quick Ultra w/Awaken®



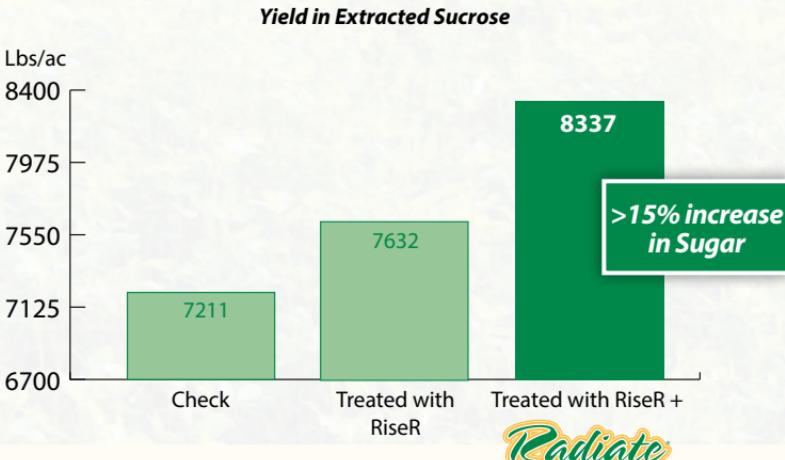
## 7 PEANUT TRIALS



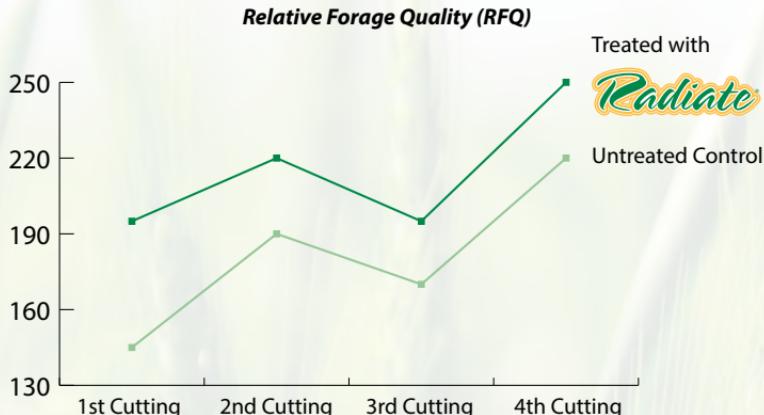
**Sugarbeets – In-Furrow Trial, Hickson, ND (2008)**  
**Radiate was applied at 4 oz/acre**



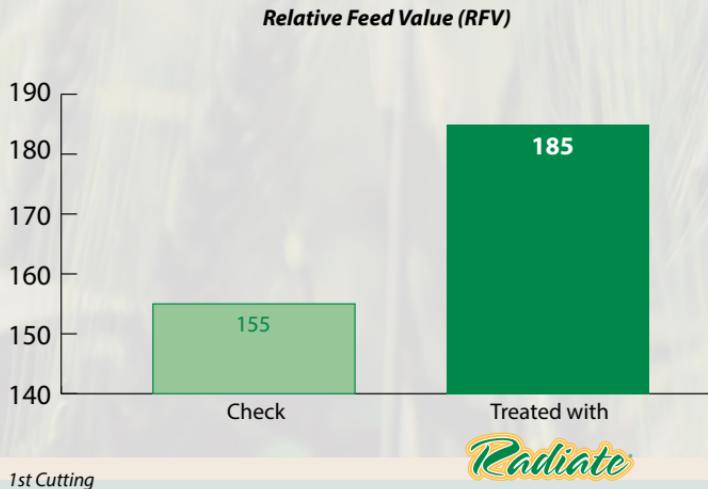
**Sugarbeets – In-Furrow Trial, Hickson, ND (2008)**  
**Radiate was applied at 4 oz/acre**



*Alfalfa – Foliar Trial, Yuma, CO (2-Year Average)*  
*Radiate applied at 2 oz/acre at green-up*



*Alfalfa – Foliar Trial, Yuma, CO (2-Year Average)*  
*Radiate applied at 2 oz/acre at green-up*



# What do growers love about Radiate?

Radiate is one of the best ways to grow strong, healthy roots for almost any type of crop. After all, if you don't use Radiate you'll never know how much of a difference it can make in your field.

*"What growers like most about Radiate is that it **offsets the stresses caused by weather**, and it **promotes a vigorous response** after various applications."*

—ROBBIE SCARBOROUGH, JR., **CPS CROP CONSULTANT (BOYCE, LA)**

*"Great crops always **start with a healthy and robust root system**. **Radiate is consistent**, too. You don't cross your fingers and just hope it happens."*

—JARED MEIER, **CPS CROP CONSULTANT (WATERVILLE, KS)**

**GET GROWING WITH RADIATE**



# At a Glance

## Application

- Foliar
- In-furrow

## Key Ingredients

- 3-indolebutyric acid (IBA)
- Cytokinin, as kinetin

## Key Features

- Improves plant vigor and health
- Reduces plant stress
- Accelerates root and shoot growth
- Compatible with NPK fertilizers, sidedress N and starter applications
- Also compatible with most post applied herbicides



# Uses and Rates

Crop	Application	Recommended Rate
Most Crops	Foliar (V2-V6) (see label for crop-specific timing)	2.0-4.0 fl oz/acre
Barley Field Corn Grain Sorghum Oats Peanuts Rye Soybeans Sweet Corn Sugar Beets Sugarcane Wheat	In-Furrow (Pop-Up & Planter Band)	4 fl oz/acre

**Consult the label for complete list of crops and rates.**



**Plant Health Stimulants** are active ingredients that have a positive effect on plant health. They are typically applied in low quantities to mimic or enhance a plant's metabolism.

### **Plant Health Stimulants** can include:

- Plant Growth Hormones
- Systemic Acquired Resistance (SAR) Induction Agents
- Amino Acid Complexes

## Contact Your Nutrien Ag Solutions Retailer

### Loveland Products, Inc.

3005 Rocky Mountain Ave.

Loveland, CO 80538

(970) 685-3300

[www.lovelandproducts.com](http://www.lovelandproducts.com)



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