

Research and Regulatory Update

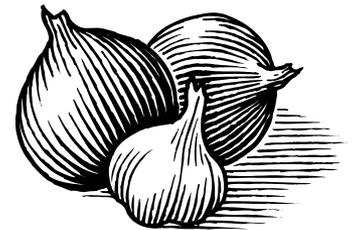
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CEO/Technical Manager

CA Garlic & Onion Research Advisory Board

2010 California Garlic & Onion Symposium

Latest research results for Growers and Allied Industry



WHITE ROT UPDATE

- Level of infection San Joaquin Valley
- Research Efforts
- Registration Status
- Grant-In-Aid Programs
 - CAGORAB
 - CADPR

White Rot Level of Infection SJV

- Total no. acres infected: 14,368
- Total fields: 93



Nomad Computer and Software

EZ-OFFICE MOBILE SOFTWARE AND THE TRIMBLE NOMAD HANDHELD COMPUTER

AN EFFECTIVE TOOL FOR GROWERS, CROP CONSULTANTS, SOIL SAMPLERS AND SCOUTS



SIMPLE USER INTERFACE:

- Familiar and easy to use Client, Farm, Field, and Job data management
- Customizable text display on screen
- Touch screen provides large buttons and map area for finger selection

SCOUTING:

- The field imagery tool allows scouts to utilize the built-in GPS receiver and digital camera on the Trimble® Nomad™ handheld computer to capture and geo-reference pictures of problems such as weeds and insects
- Enter an unlimited number of attributes, such as scouting notes or types of weeds, for mapped areas, lines, and points

SAMPLING:

- Create soil sampling grids to any size, pattern, and orientation
- Import pre-existing sampling targets or zones from EZ-Office™ software or other GIS programs
- Easily navigate to soil sample locations and other targets

HARDWARE:

- Rugged handheld to easily withstand field use
- Reliable rechargeable battery designed for all day jobs
- Versatile built-in GPS receiver, digital camera, and wireless technology



MAPPING:

- Map a field boundary in order to calculate area or drainage lines in order to measure distances
- Record soil sample points or other points of interest
- Display background Shapefiles (SHP) and geo-referenced BMP/JPG aerial photos

DATA STORAGE:

- Store data to secure internal memory or removable Secure Digital data card



VIEWING DATA:

- Data from EZ-Office Mobile software transfers easily to EZ-Office desktop software using automated data synchronization
- Data can be exported in Shapefile format to use with 3rd party applications

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Trimble Agriculture. The line everyone follows.



WHITE ROT OF ONIONS & GARLIC

Inoculum Density Vs. Disease Loss



Registration Status White Rot Products

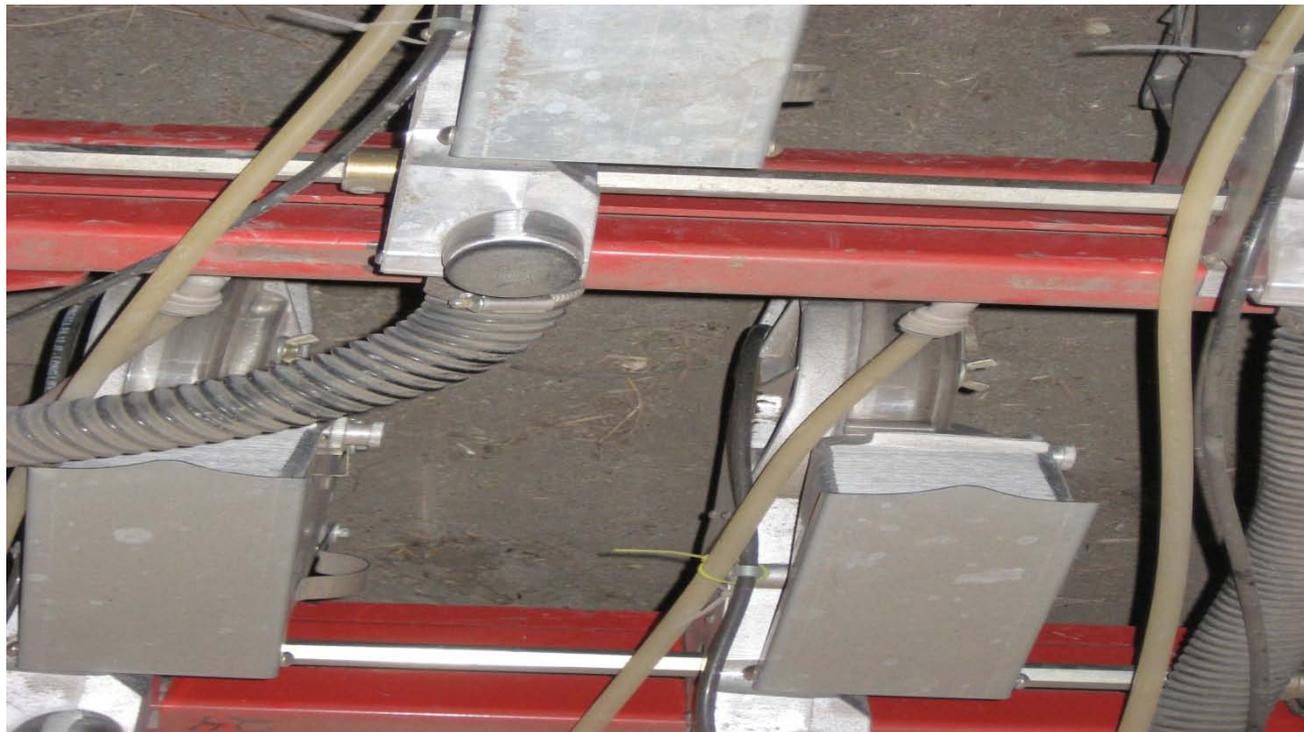
- **Folicur** (tebuconazole) *registered for soil and foliar applications July 2008*
- **Switch** (combo fludioxonil & cyprodinil) *soil application registered CA*
- **Cannonball** (fludioxonil) *registration?? CA??*
- **Endura** (boscalid) *foliar/drip irrigation in season CA*
- **BAS 510 ST** (boscalid) **CA reg.??**
- **DADS** (diallyl disulfide) *No product currently available*

2010 Research Program

- White Rot
 - **Mike Davis** (UCD) *IPM White Rot*
 - **Tom Turini** (UCCE Fresno) *Drip Irrigation*
 - **Ken Giles** (UCD-Ag Eng.) *Application techniques and equipment* (Kevin Moules)
 - **Colin Eady** (NZ Crop & Food Research Inst.) *Biotech Allium germplasm development*
 - **Bo Ming Wu** (OSU prev. USDA ARS CA) w/Davis on *White Rot management strategies*
 - **\$52,000** budgeted

Folicur Application Equipment Design Program

- **Ken Giles** (UCDavis Ag Engineering)
- **Kevin Moules** (UCD Ag Engineering Masters Program)





Garlic Rust Management

- First observed CA 1934.
- Severe outbreak spring 1998.
- Obtained Section 18 for Folicur 1999 and have continued that 18 for 7 years (except 2003).
- Azoxystrobin (Quadris) is only registered compound for use on garlic rust. It is preventative.
- Folicur (tebuconazole) can reach back and control infection once observed.
- CA DPR Registration approved 7/31/08.
- Bayer no longer selling but generic products available.





IYSP and Thrips Control

- **Researchers:**
 - **Hanu Pappu** (WA State Univ.Virology)
 - **Eric Natwick** (UCCE Imperial Valley)
 - **Donna Henderson** (UCCE Imperial Valley)
 - **Steve Orloff/Larry Godfrey** (Tulelake)
 - **Tom Turini** (UCCE Fresno County)
 - **Mike Davis** (Extension Pathologist, UCD)
 - **Howard Schwartz** (Colorado State Univ.)

Seed Corn Maggot

- Submitted Section 18 for use of Poncho as a seed treatment (Klamath Basin) 2009
- Renewal of 18 not allowed- tolerance for clothianidin established at EPA
- Bayer will decide how to proceed



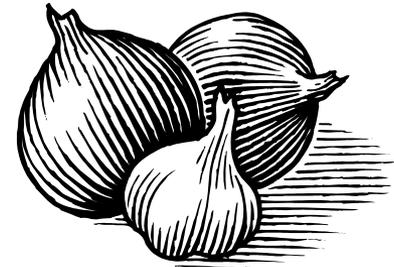
Seed Corn Maggot Program 2010

- **Rob Wilson/Larry Godfrey** (UCCE/IREC)
 - Evaluation of seed treatment products
- **Mary Ruth McDonald** (Univ. of Guelph, Ontario)
 - Seed treatments for control of onion maggot and seed corn maggot (part of IR-4 national program)

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QUESTIONS???



THANKS FOR YOUR TIME