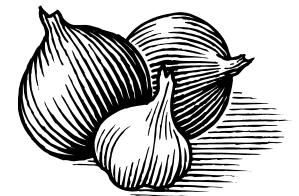


WELCOME to the 2013 CALIFORNIA GARLIC & ONION SYMPOSIUM



Kevin Lehar, Chairman
California Garlic & Onion Research Advisory Board

FORMATION OF MARKETING ORDER: MEMBERSHIP

- All fresh, dehydrated and processed garlic
- All processed onions
- All seed onion and garlic growers
- Areas include Southern desert, San Joaquin Valley and Tulelake production regions

CURRENT MEMBERS:

Sensient Dehydrated Flavors,
Christopher Ranch,
Harris Fresh,
Sequoia Packing,
The Garlic Company,
Olam Spices and Vegetables,
George Chiala Farms and their growers

RESEARCH BUDGET

Commitment to Generate
\$100K per year for :

- **White rot research:**
 - Conventional and Biopesticide research
 - Application technology
 - Precision agriculture (GPS- mapping) techniques to manage white rot infestations
- **Other pest problems:**
 - Garlic Rust
 - Iris Yellow Spot Virus
 - Bulb mites
 - Nutsedge and bindweed
 - Onion Maggot



RESEARCH FUNDING 2005-2012

- WHITE ROT RESEARCH
 - \$489,684
 - ONION THRIPS, WEED CONTROL & RUST/DISEASE MANAGEMENT
 - \$236,664
- Eight year total
\$726,348



What did we get for our \$\$?

- **BASF**
 - Provided research data to support registration of Outlook Herbicide for nutsedge control.
 - Supported IR-4 research project for registration of Endura fungicide for white rot management.
- **MONSANTO**
 - Section 24(c) for use of Roundup VVMax after dry-down to control bindweed and morningglory in garlic.
- **VALENT**
 - Supported research data for registration of Chateau on garlic.
- **FMC Corporation**
 - Section 24(c) petition to register Shark (carfentrazone) in season for bindweed and morningglory control (Shark to follow Roundup for burndown).

What did we get for our \$\$?

- **ACETO Chemical Co.**

- Developed data package and assisted with submission and registration of DADS biostimulant in CA.

- **SYNGENTA**

Jointly developed garlic rust management strategy using Quadris as preventative and Folicur Section 18 for active rust infection.

- Section 24(c) labels for use on onions after dry down for bindweed and nutsedge with Touchdown Total and Section 3 label for use on garlic.
- Through cooperative effort supported IR-4 registration of Cannonball (fludioxanil) in furrow on onions & garlic for white rot.
- Working with Syngenta Seeds to develop use of FarMor IO seed treatment for seed corn/onion maggot on onions.
- Received Priority IR-4 (A) project status for request to register X4601B for rust control.

What did we get for our \$\$?

- Working with Ag Chem Companies obtained:
- **Bayer CropScience**
 - Section 18 **Folicur** for garlic rust control (7 years running)
 - Section 3 full label for **Folicur** use to control garlic rust and for white rot management (DPR)
 - Research Authorization to evaluate **Folicur** banded commercially on 100 acres in Tulelake and SJV 2008
 - Section 18 for use of **Poncho** (clothianadin) for seed corn maggot control Klamath Basin 2009
 - Section 18 **Movento** for onion thrips control 2012 with 2013 renewal pending

What did we get for our \$\$?

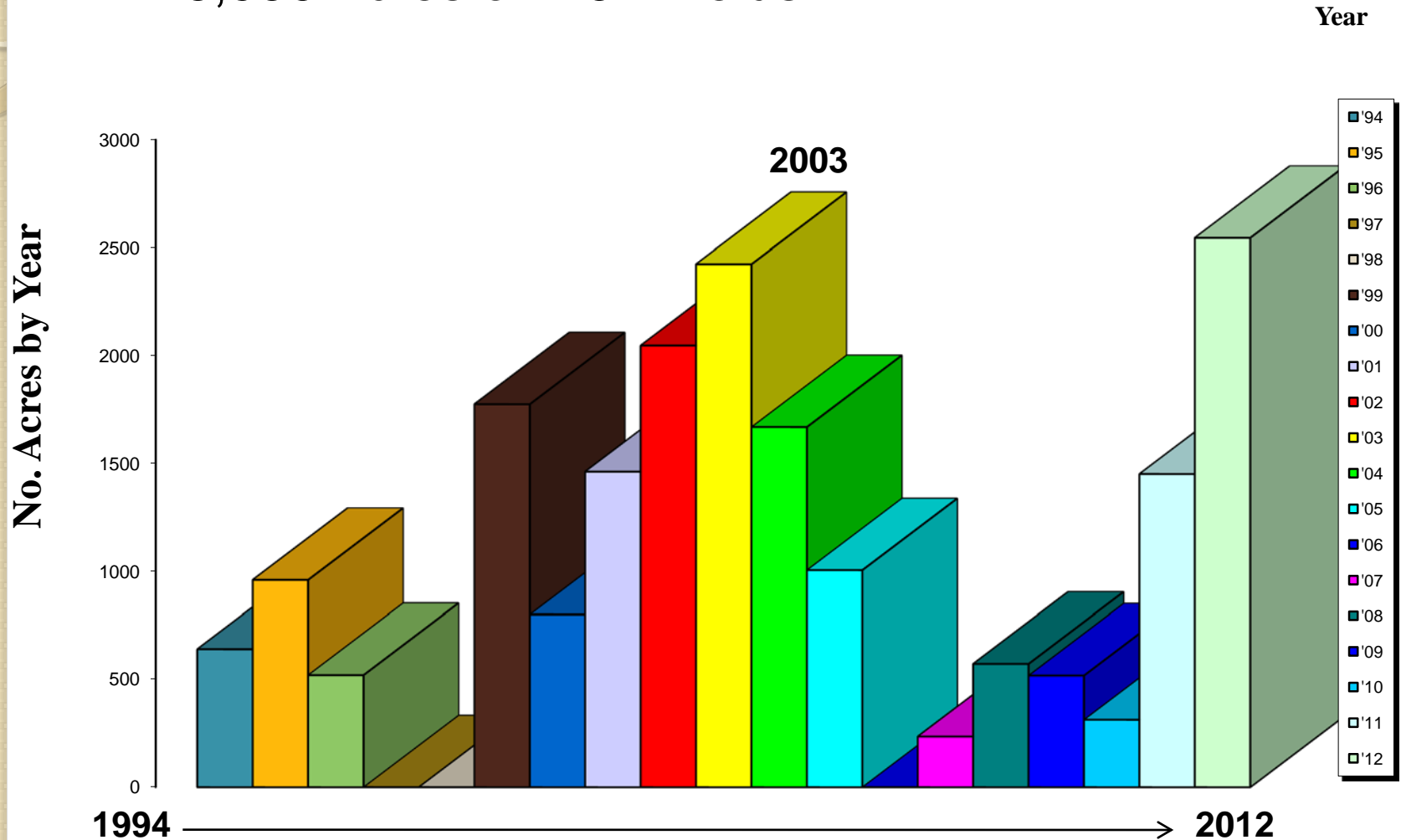
- Joint sponsor of bee research on seed onion production with (UCDavis) to determine cause of seed yield decline:
 - Bayer/Nunhems- Rick Watson
 - Bejo- Ryon Ottoman
 - Hazera- Joel Canestrino
 - CA Garlic and Onion Research Board
 - Neal Williams (UCDavis Dept. of Entomology)
 - \$20K pledged toward project

CAGORAB CORE OBJECTIVES

1. **Reinstate White Rot Master Plan**
 - Industry agreed to guidelines for preventing further spread of white rot
2. **Develop Garlic Rust Management Plan**
3. **Consider new white rot integrated strategies, including biotech, biopesticides, & cultural control**
4. **Expand scope of Research Board to Include All Allium Crops**
 - Ask dry bulb industry to participate on ad hoc basis for non-white rot problems
 - Provide a unified voice for CA Allium production
5. **Update Research Objectives with Input from all of Allium Industry**

WHITE ROT STRIKES SAN JOAQUIN VALLEY 1994 - 2012

18,936 Acres on 131 Fields



White Rot Management Plan

- **Recommendations**

- Inspection of all Garlic Seed Fields
- Garlic Seed Field Maintenance
 - Wash seed bins before use
 - Inspect all seed fields for white rot or other pathogens
 - Minimize equipment movement in and out of seed fields
 - Sanitize all equipment before entering a seed field
- Restrict Planting and Harvesting in areas know to have white rot
- Report all Fields with White Rot Infestations
- Establish Garlic Seed Certification Programs
- Develop Methods to Reduce Soil Populations w. rot

CDFA Certification of Garlic Field



White Rot Mapping Plan

- Utilize GPS mapping system
- Use software to allow mapping of infected sites
- Use computer software to treat, when possible, infected sites plus offset
- Obtain additional grant \$\$ to expand program and purchase additional hardware and software for mapping and application



EZ-OFFICE MOBILE SOFTWARE AND THE TRIMBLE NOMAD HANDHELD COMPUTER

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

EZ-Office mobile

SIMPLE USER INTERFACE:

- Familiar and easy to use Client, Files, Field, and Job data management
- Comprehensive text display on screen
- Touch screen provides logical layout and map area for finger selection

SCOUTING:

- The field imagery tool allows scouts to utilize the user's GPS receiver and digital camera on the Trimble Nomad™ handheld computer to capture and geo-reference pictures of problem areas in fields and forests
- Enter an unlimited number of attributes, such as acreage, inches of water, or variety, for individual areas, lines, and points

MAPPING:

- Map a field boundary in order to produce area or acreage data in order to measure
- Measure and sample points at other points of interest
- Display boundaries, properties (ID), and geo-referenced GPS/PC aerial photos

DATA STORAGE:

- Store data in CSV or ASCII format or interface to other Digital data tools

VIEWING DATA:

- Data from EZ-Office mobile software transfers easily to EZ-Office desktop software using a standard data synchronization
- Data can be exported to Google Earth for use with 3D map by GOOGLE EARTH

Hardware:

- Support for all of the world's hottest field use
- Superior technology (battery duration, 60,000,000 cycles)
- Versatile built-in GPS receiver, digital camera, and software technology

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WELCOME TO :

WWW.CAGARLICANDONION.COM



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Research Advisory Board

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About



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