Research and Regulatory Update

CA Garlic & Onion Research Advisory Board

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CEO/Technical Manager
WHITE ROT UPDATE

- Level of infection San Joaquin Valley
- Research Efforts
- Registration Status
- Grant-In-Aid Programs
  - CAGORAB
  - CADPR
  - USDA ARS
Summary of White Rot Strikes 1994-2007
WHITE ROT OF ONIONS & GARLIC
Inoculum Density Vs. Disease Loss

% YIELD LOSS

ASSAY LIMIT

SCLEROTIA/LITER SOIL

- GARLIC, SALINAS
- GARLIC, DAVIS
- SP ONIONS, TULELAKE
- GARLIC, KING CITY
- FALL ONIONS, NAMPA
- GARLIC, WALLA WALLA

Data from F. Crowe, 1976-1992
Research Efforts

- Biostimulants
  - Garlic Powder/Garlic Juice
  - DADS

- Chemical Control
  - Seed Treatment
  - In-furrow application
  - M. Bromide spot treatment
  - Metam sodium spot treatment

- Soil Solarization

- Flooding
Research Efforts

- Breeding for resistance
  - Extensive work evaluating germplasm for resistance
  - Work ongoing Mexico, New Zealand
  - No true seeded varieties available to date

- Biotechnology
  - NZ Partnership genome modification
WHITE ROT RESEARCH

COOPERATORS
- Chemical and Biostimulant Control
  - Mike Davis (UCDavis)
  - Harry Carlson (Tulelake UCCE)
  - Joe Nunez (Kern County)
  - Tom Turini (Fresno County)
  - Shannon Mueller (Fresno County)
  - Kurt Hembree (Fresno County)
  - Fred Crowe (Oregon State Univ. Madras)
- Biotechnology
  - Colin Eady, New Zealand Crop and Food Research Inst.

ANNUAL GIA BUDGET: $80K
- CADPR Grant: DADS implementation $40K
- NV Garlic & Onion Research Board $10K
Registration

- **Folicur (tebuconazole)**
  - Registration work through IR-4/Bayer
  - Project started 1999 for garlic rust only
  - USEPA PRIA Date is May 30, 2008

- **Proposed Uses**
  - Dry bulb onion, garlic, elephant garlic, shallot

- **Disease**
  - White rot (Sclerotium cepivorum)
  - Rust (Puccinia allii)
  - Purple blotch (Alternaria porii)

- **Rates:**
  - 20.5 fl oz/A in 4-6 inch band (white rot)
  - 4-6 fl oz/acre for rust and purple blotch
  - Max 32.5 oz/A if in-furrow treatment made

- **PHI:** 7 days
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)
- CADPR has submitted for renewal of Section 18 2008
- Azoxystrobin (Quadris) is only registered compound for use on garlic rust. It is preventative
- Only Folicur (tebuconazole) can reach back and control infection once observed
- IR-4 has submitted Folicur to EPA for registration. Expect 2nd qtr. 2008 (May 30, 2008)
IYSV
Iris Yellow Spot Virus Onions

- IYSV is a tospovirus similar to tomato spotted wilt virus
- Transmitted by onion thrips
  - No evidence of transmission by seed
- Shallots, iris, jimsonweed, leek and chives also susceptible
- Last four years found in AZ, CA, CO, GA, NM, OR, TX, UT and WA
- Considered an emerging virus
- Disease epidemic depends on:
  - Number of thrips vector species
  - Migration/seasonal dynamics
  - Proportion of transmitters
IYSP Cooperative Project

Researchers:

- Hanu Pappu (WA State Univ. Virology)
- Eric Natwick (UCCE Imperial Valley)
- Joe Nunez (UCCE Kern County)
- Tom Turini (UCCE Fresno County)
- Mike Davis (UC Extension Pathogist, Davis)
Seed Corn Maggot

- Submitted Section 18 for use of Poncho as a seed treatment (No. CA & Klamath Basin)
- Probably will not issue in time for 2008 planting
- Researchers: Joe Nunez (Kern County) & Harry Carlson (UCCE Tulelake)
QUESTIONS???

THANKS FOR YOUR TIME