2008-2009 Research Proposal Priorities (Research interests prioritized within groups)

**Diseases**

- **White Rot (garlic and onions)**
  - Evaluate mechanical methods to apply tebuconazole on onions for white rot management in Tulelake area to prevent seed phytotoxicity (direct contact with seed slows germination and can cause stand reduction)
  - Continue evaluation of DADS biostimulant under commercial conditions including alternate application timings and split applications
  - Develop practical field survey and bioassay method for determining levels of white rot sclerotia in field including use of GPS field mapping
  - Continue evaluation of chemical controls in conjunction with biostimulants. Evaluate mixtures of conventional chemicals.
  - Continue evaluation of garlic juice use as biostimulant including rate development and application methods (sprinkler)
  - Continue to evaluate in-season treatments applied via chemigation/drip irrigation
  - Continue efforts with biotechnology approach for germplasm resistant to white rot
  - Reinstitute white rot stewardship plan for all growers

- **Garlic Rust (Garlic)**
  - Screen new fungicides for activity
  - Identification of resistant varieties

- **Botrytis (onions and garlic)**
  - Determine fungicide spray timing for B. alli

- **Soft Rots (onions and garlic)**
  - Continue to evaluate copper and chlorine as control agents
  - Determine sprinkler irrigation effect on disease development

- **Downy Mildew (onions)**
  - Screen new fungicides for activity on mildew

**Nematodes**

- **Bulb and Stem (onions and garlic)**
  - Screen chemical control products as replacement for Vydate
  - Confirm effect of non-host plants/rotations on reducing bulb and stem nematode populations in field

**Insects/Mites**

- **Thrips (onions)**
  - Test new conventional chemistry and biorational pesticides to control thrips feeding and spread of IYSV
  - Continue surveys for IYSV in onion crops for incidence and impact in central and northern California
  - Species ID, virus incidence in weeds and non-symptomatic host crops of IYSV and TSWV in CA onion and garlic areas
  - Determine contribution of thrips in garlic to ISYN spread
- **Maggots (onions)**
  - Test new chemistry for maggot control
  - *Develop seed treatment data to support Section 18 state wide*
  - Determine impact of loss of OP chemistry on control

- **Bulb Mites (onions)**
  - *Develop management plan for bulb mites in San Joaquin Valley soils*
  - Determine source of infestation (seed/soil/debris)
  - Screen new pesticides for control

**Weeds**
- Screen new herbicides for pre-emergence activity
- Register Roundup on onions and Shark/ET on onions and garlic for pre-harvest control of morningglory, field bindweed and nutsedge

**Production Costs**
- *Develop crop production budgets for onions and garlic in San Joaquin Valley*