

# *Imported Fire Ants in the U.S.: Development of Quarantine Treatments vs. Management Treatments*

A detailed illustration of a fire ant, shown from a side-top perspective. The ant is reddish-brown with a segmented body, six legs, and antennae. Its abdomen is notably larger and more rounded than that of a typical ant. The illustration is centered on the slide, with the text overlaid on it.

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USDA

# APHIS vs. ARS



Plus many others



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# USDA-APHIS-PPQ-CPHST- Gulfport Lab Imported Fire Ant Section

- Laboratory has been active since 1960s
- Mission – to develop methods and tools for the survey, detection, regulation, and control of the imported fire ant as related to the U.S. Federal Imported Fire Ant Quarantine
- Is the sole laboratory in the U.S. responsible for developing regulatory (quarantine) treatments to support the U.S. Federal Imported Fire Ant Quarantine



# Impacts of Imported Fire Ants in the U.S.

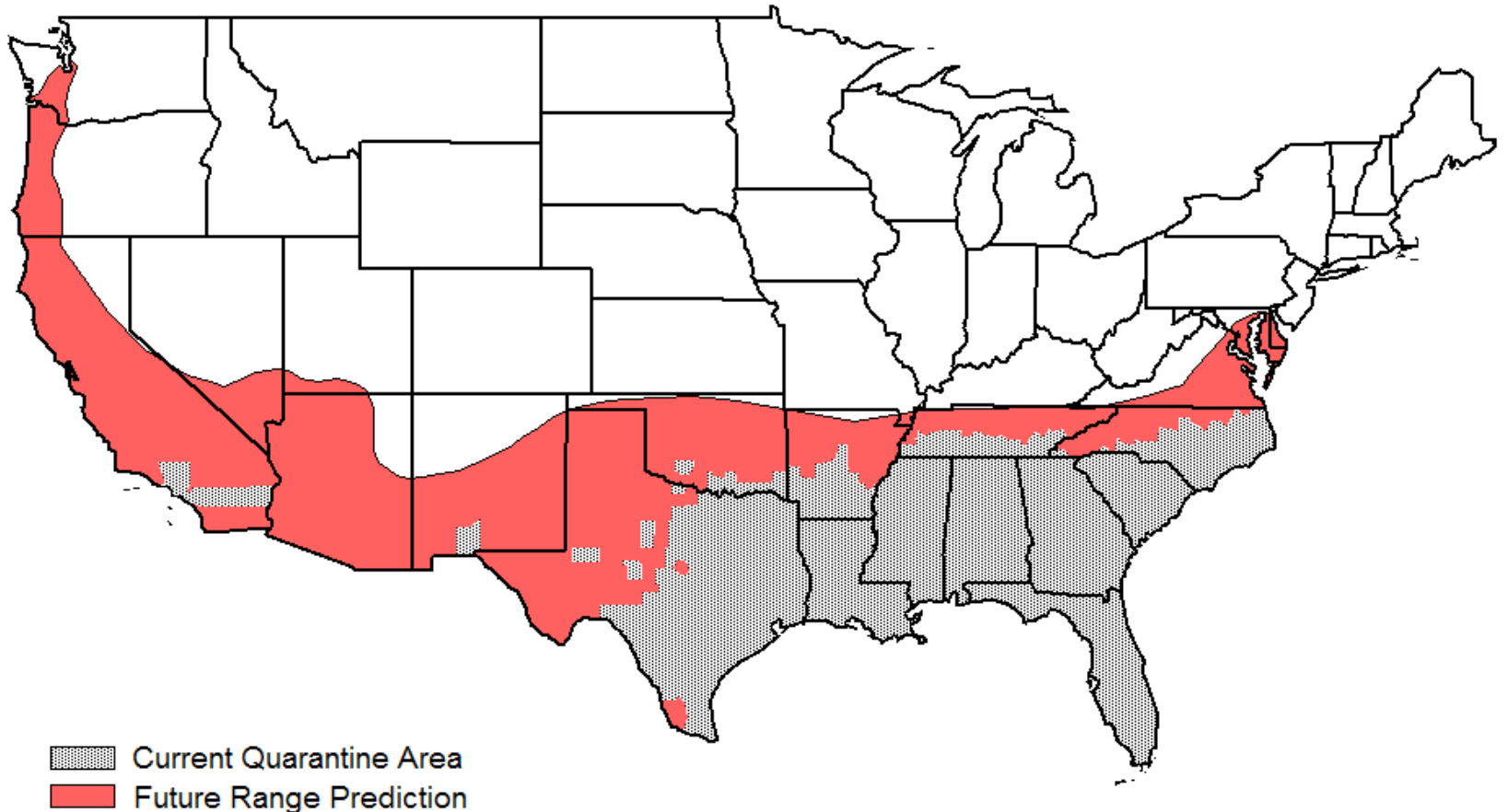
- Economic impact • \$6 billion (US\$) per year
- Human health
  - Allergic reactions, secondary infections, rare mortality
- Wildlife
  - Mortality, damage
- Agricultural
  - Crop damage, equipment damage
- Benefits
  - Feed on sugar cane borer, ticks, boll weevil, boll worm



# U.S. IFA Regulated Areas and Areas of Potential Infestation

## Potential Range of the Red Imported Fire Ant

Modified from Korzukhin *et al* 2001



# U.S. Federal Domestic Imported Fire Ant Quarantine

- Goal – prevent artificial spread of IFA within the U.S.
- Regulates articles that could contain IFA
  - IFA queens and reproducing colonies
  - Plants and sod with roots and soil attached
    - Nursery stock
    - Grass sod
  - Baled hay and straw
  - Used soil moving equipment



# Level of Control: Quarantine vs. Management

- In the U.S., there is zero-tolerance by non-infested states for IFA
- Quarantine treatments
  - must eliminate IFA from the commodity at the time of treatment and keep the commodity free of IFA for some specified period of time so the commodity can be moved into a non-infested area
- Management treatments
  - eliminate IFA from commodities or areas at the time of treatment, but are not required to maintain IFA free status for any period of time (ex. baits) and are generally used to control IFA in a fixed area
- Level of control
  - Quarantine = 99-100% for a specified period of time
  - Management = 70-90%

# Types of Tools: Quarantine vs. Management

- Quarantine treatments – limited in number
  - Used in regulatory situations
  - Rely on insecticides, primarily contact insecticides
  - Restricted use pesticides (require license to use)
    - May allow higher rate of application than general use pesticide
- Management treatments – many to choose from
  - Used by homeowners, land managers, etc.
  - Includes insecticides (contacts and baits), biological controls, mechanical devices, physical methods (hot, cold), electrical, barriers
  - General use pesticides (anyone can use)





# Testing Guidelines: Quarantine vs. Management

- Quarantine treatments (specific to IFA)
  - generally requires 3-7 years field testing prior to initiating USDA approval process for inclusion in quarantine
  - testing over multiple years (consistency of efficacy and multi-year residual activity)
  - testing in multiple media types (containers), and multiple soil types (grass sod and field-grown/B&B); both media and soil type impacts insecticide efficacy
  - testing in different geographical/climatic regions and over different seasons (impact of temperature, rainfall, photodegradation, etc on insecticide efficacy and residual activity/degradation)

# Testing Guidelines: Quarantine vs. Management

- Best Management Practices treatments
  - generally requires 2-4 years less intensive field testing to support recommendations
  - may focus on storage areas in combination with insecticide treatments
- General home and land owner management treatments
  - labeled and ready for use (some testing by universities, etc. to support management recommendations to general public)

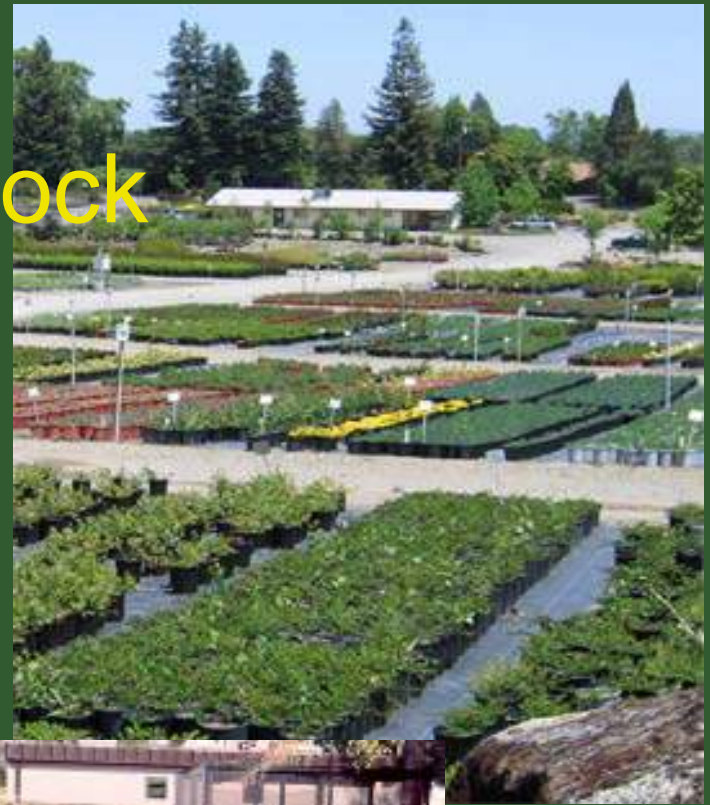
# Regulations for Use: Quarantine vs. Management

- Quarantine treatments require:
  - pesticide labeling through the U.S. Environmental Protection Agency (U.S. EPA)
  - U.S. National Environmental Policy Act (NEPA) requires federal agencies to consider environmental impacts during decision making
    - prepare Environmental Assessments (EA) to determine whether proposed actions would cause significant environmental impacts
  - APHIS program approval in addition to above
    - Quarantine level efficacy
    - Review under several U.S. Executive Orders
      - Determination of no significant economic impact on a substantial number of small entities/businesses
- Management treatments require:
  - pesticide labeling through the U.S. EPA

# Quarantine Containerized Nursery Stock



Pre-plant granular insecticide  
incorporation



Pre-shipment container drench



# Quarantine

## Field Grown Nursery Stock

Pre-harvest in-field treatment

Bait followed by contact insecticide



Post-harvest balled-and-burlapped treatments

Immersion

Drench/watering in with chemical solution



# Quarantine Grass Sod

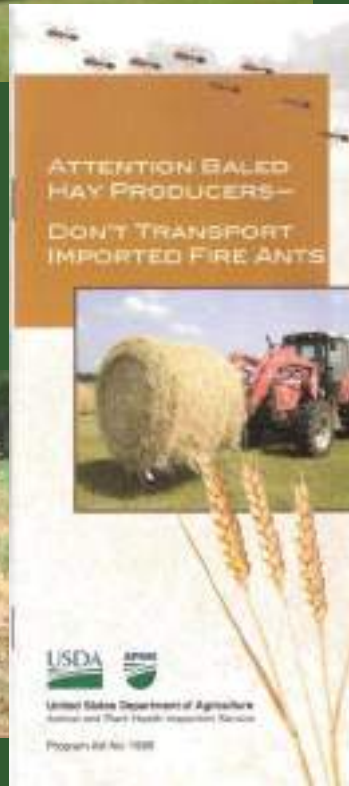
Broadcast insecticide applications



# Best Management Practices Baled Hay and Straw

Baled hay and straw are ineligible for movement if stored in direct contact with the ground

Best Management Practices (BMPs) for hay producers were published in Feb. 2009 – focuses on storage treatments



# Best Management Practices Migratory Bees and Equipment



- Bee equipment was implicated in the original California IFA infestation
- Since then, apiary equipment has been rigorously inspected in the western states of the U.S.
- Best Management Practices were developed to help beekeepers move IFA-free equipment





# Conclusion: Quarantine vs. Management

	Quarantine	Management
Level of control	99-100%	70-90%
Tools available	Limited Applicators License required	Many No license required
Testing guidelines	3-7 years plus approval process for inclusion in U.S. regs	None-4 years for recommendation
Regulations beyond EPA label	Many	None

Thank you / Questions

