



# Red Imported Fire Ant Impact to Quail and Wildlife

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# Red Imported Fire Ants





# Biting and Stinging





# Impact to Wildlife





# Impact on Other Arthropods





# Impact on Quail Populations

- **Dr. C. Brad Dabbert, Assistant Professor, Department of Range, Wildlife, and Fisheries Management, Texas Tech University**
- **“Protection of Quail Nests from Mammals to Increase Chick Recruitment in Habitat Occupied by the Red Imported Fire Ant” – C. D. Dabbert & R. B. Mitchell**



# History

- Northern bobwhite quail have declined over 30 years, during a period when red imported fire ant have spread through Texas
- Red imported fire ants have been observed to recruit to ground-nesting bird species, including quail, during egg hatch





# Methodology (C. B. Dabbert & J. M. Mueller)

- Captured hens in spring and fitted them with radio-transmitters, 1997 & 1998
- Protected half of the nests by broadcasting insecticide onto a 60 by 60 meter area centered on nests
- Observed hatching success and 21-day old chicks
- Monitored ant mounds and foraging



## Results (C. B. Dabbert & J. M. Mueller)

- In 1997, a single imported fire ant treatment, using the broadcast application of Amdro®, around nests resulted in 70 percent control.
- In 1998 two broadcast treatments provided 99 percent control.





## **Results** (C. B. Dabbert & J. M. Mueller)

- **Untreated areas had an average of 290 mounds per hectare**
- **When 300 or more red imported fire ants recruited to a bait cup within 30-minute period one day post-hatch, chick survival was essentially zero**



## Results (C. B. Dabbert & J. M. Mueller)

- Compared to matching sets of untreated nesting sites, hatching success did not differ from the treatments (2%).
- Treated areas had 60 percent survival of 21-day old chicks compared to 22 percent in untreated areas (38%).





# Possible Causes

- *Direct impact:* Killing chicks, stinging young birds reducing fitness
- *Indirect effects:* Altering chick activity, reduction in arthropods in the area which serve as a part of northern bobwhite diets





# Other Factors Affecting Survival

- **Habitat destruction (reduction in habitat size and quality or changing land use)**
- **Other (vertebrate) predators**
- **Drought**





# Conclusions

- Chicks surviving to four weeks of age had similar body weights, suggesting food supplies were not limited
- Red imported fire ants have degraded the suitability of habitat for the northern bobwhites throughout the Texas Coastal Prairie
- Chemical control is costly and provided only temporary ant suppression



# Management Information



## Managing Red Imported Fire Ants in Wildlife Areas

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