
PAPER 6
ANTS

**FIRE ANTS REDUCE INDOOR
POPULATIONS OF PHARAOH ANTS****Karen M. Vail¹ and David F. Williams²**¹Extension Entomology and Plant Pathology

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Pharaoh ant, *Monomorium pharaonis* (L.), nests are difficult to locate without causing damage to a structure. Buildings (2.4 m wide x 3.0 m long x 2.4 m high) were constructed with modifications (hinged paneling and attic hatches) to allow observation of hidden nests. Large Pharaoh ant colonies ranging from 32,000 to 74,000 workers per colony were introduced into these buildings. Buildings were inspected every 2 - 4 weeks to determine the following: (1) the size and composition of satellite colonies, (2) Pharaoh ant nest sites indoors and outdoors, and (3) the effects of imported fire ants, *Solenopsis invicta* Buren, on Pharaoh ant nest composition and location. Fire ants severely limited Pharaoh ant colonization and establishment in some of the buildings. The indoor presence of fire ants at food cups ranged from 9 - 72% of the observation days. On several occasions, fire ants caused the formation of small, ephemeral nests on the paneling facing the interior of the room. These nests averaged (\pm SD) 47.3 ± 59.6 workers and 0.4 ± 0.6 queens and female alates compared to the average nest found within the walls or attic with $1,556 \pm 1,121$ workers, 16.0 ± 1.8 queens and female alates, and 1.4 ± 1.2 g brood. Fire ants decreased the biomass, brood, number of females, and number of workers per colony and per building. Fire ants also decreased the mean number of nests per building. Several Pharaoh ant nests, as indicated by the movement of queens, brood, and workers, were located in the soil under the slab of the buildings. Pharaoh ant colonies would persist outdoors under the slab until they encountered fire ants. Fire ants also caused nests to be located further from the food provided. Pharaoh ants will return to a previous nest site after a disturbance or they will occupy previously used nest sites on average (\pm SD) $56.7 \pm 6.5\%$ of the time. Fire ants also reduced the percentage of nest sites previously occupied. Could fire ants control Pharaoh ants in structures? Because of the fire ants ability to sting and recruit effectively, it is unlikely their presence in structures would be tolerated.

KEY WORDS*Monomorium pharaonis*, Pharaoh ant, nest location, *Solenopsis invicta*, Imported fire ant