

The structure was divided into two treatment sections (Fig. 1). Section 1 consisted of the master bedroom, bathroom, closet, vanity and sitting room; and Section 2 included the remainder of the house including a bedroom, bathroom, kitchen, dining, living room and an office. The two sections were separated from each other by closing the master bedroom door.

Two types of treatments using heat were tested: infrared heaters in Section 1 and heat exchangers in Section 2. In Section 1, a total of 15 infrared heaters were installed; 10 in the master bedroom, two in the vanity area, two in the sitting room and one in the bathroom. In Section 2, five heat exchangers were used; one each in the office, dining room and kitchen, and two in the living room.

Temperature sensors were placed in both sections of the house to measure and record the temperature of the treated area over time. Section 1 received seven temperature sensors while Section 2 received 20 sensors. Care was taken to place sensors in “cold spots,” including some inside wall voids, at window frames and doorframes. Once the temperature sensors were installed, fans were strategically

TABLE 1. SURVIVORSHIP AND TEMPERATURE RESULTS FOR BED BUGS AND EGGS TREATED WITH HEAT TECHNOLOGY

Dish	Dish contents	Location in structure	% surviving 4 hours into treatment	Temperature 4 hours into treatment (°F)	% surviving 16 hours into treatment	Temperature 16 hours into treatment (°F)	% surviving 2 weeks post treatment
SECTION 1: INFRARED TREATED AREA							
A	100 bed bug eggs	Master bedroom closet	*	115	*	130	0
B	100 bed bug eggs	Master bathroom	*	116	*	133	0
C	100 bed bug eggs	Sitting room	*	132	*	123	0
1	10 bed bugs	Master bedroom wall void	100	120	0	129	0
2	10 bed bugs	Master bedroom: between mattress and box spring	0	122	0	130	0
3	10 bed bugs	Sitting room	0	122	0	140	0
SECTION 2: HEAT EXCHANGE TREATED AREA							
D	100 bed bug eggs	Living room	*	98	*	145	0
E	100 bed bug eggs	Bedroom	*	93	*	140	0
F	100 bed bug eggs	Hall closet	*	90	*	135	0
4	10 bed bugs	Dining room: in a cabinet	100	135	0	150	0
5	10 bed bugs	Living room: under couch cushion	50	98	0	145	0
6	10 bed bugs	Bedroom: under mattress	90	69	0	125	0
7	10 bed bugs	Hall closet	100	98	0	130	0
UNTREATED BED BUGS AND THEIR EGGS							
G	100 bed bug eggs	Taken to the lab for observation	*	N/A	*	N/A	100
H	100 bed bug eggs	Taken to the lab for observation	*	N/A	*	N/A	100
I	100 bed bug eggs	Taken to the lab for observation	*	N/A	*	N/A	100
8	10 bed bugs	Taken to the lab for observation	100	N/A	100	N/A	100
9	10 bed bugs	Taken to the lab for observation	100	N/A	100	N/A	100
10	10 bed bugs	Taken to the lab for observation	100	N/A	100	N/A	100

*All treated and untreated Petri dishes were held in the laboratory for two weeks post treatment to observe adult survivorship and egg hatch.