Data XXXXX GmbH – Permanent Monitoring of house mice (*Mus musculus*)

The data were obtained during professional pest management in the food industry sector. The provided data are part of the digital documentation of pest management conducted in 16 objects. The size of the managed buildings ranged from 850 m^2 to 7000 m^2 (Table 1). The permanent monitoring was conducted with digital traps ("Permanent Monitoring"[1]) and via permanent baiting ("Mäuse"[1]). *Nagtag® mousetrap tunnels* were connected with the *JERRY module* (traplinked GmbH, Nürnberg, Germany) located in the centre of the trap tunnel. This device checks the triggering state of the traps at regular intervals (adjustable) by means of magnetic switches. If a trap is triggered, the device sends an alarm to the user. Simultaneously, bait stations *AF-Mausbox Maxi* with the rodenticide *Ratimor® Broma Pastenköder 15 g* were installed in each object.

Table 1: Pest management conducted by XXXX GmbH using rodenticide bait stations and digital trap system as preventive measure and permanent monitoring.

Object Nr.	Object type	Size [m^2]	Number of	
			Bait stations	Trap systems
1	Food industry	> 7000	27	54
2	Food industry	> 2000	15	16
3	Food industry	> 2200	22	14
4	Food industry	> 1500	22	30
5	Food industry	> 2300	19	18
6	Food industry	> 1100	11	27
7	Food industry	> 900	13	12
8	Food industry	> 1600	12	23
9	Food industry	> 1000	20	18
10	Food industry	> 1200	28	20
11	Food industry	> 7000	14	21
12	Food industry	> 900	12	15
13	Food industry	> 2800	18	26
14	Food industry	> 2800	15	22
15	Food industry	> 2800	32	31
16	Food industry	> 850	12	18

Table 2 summarizes the data that were collected from 01.01.-31.12.2021 in 16 objects. In total, 292 bait stations and 365 trap systems were installed. In 12 months, rodenticide bait was taken from 129 stations, while 218 mice were trapped.

Table 2: Number of stations where rodenticide bait was consumed (R) and number of traps that were activated (T) in the objects 1-16 from January to December 2021.

Nr.	1		2		3		4		5		6		7		8		9		10		11		12	
	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T
1	0	0	0	1	2	12	11	9	0	2	10	2	3	5	9	6	5	2	2	6	0	4	3	8
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3	1	3	0	5	0	9
3	0	0	0	0	0	0	1	0	2	0	15	0	6	0	3	1	0	2	1	1	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	0	3	0	2	0	4	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	7	0	4	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	2	2	0	2	1	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	2	0	2	0	0
10	7	0	0	0	2	0	6	0	0	2	1	1	7	3	4	2	0	4	2	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	10	0	1	0	3	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	7	0	10	0	9
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1
15	0	0	6	0	3	0	5	0	1	0	0	0	0	1	0	4	0	4	1	2	0	1	0	2
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0

In relation to the total number of stations and traps used, on average more mice were detected with the trap system than infestations in the bait stations (Figure 1).

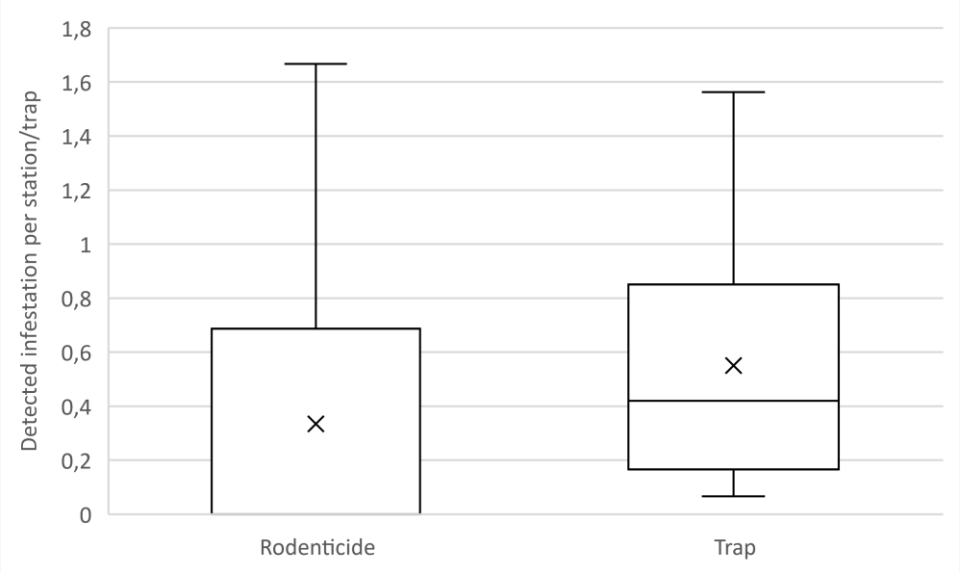

Figure 1: Boxplots of detected infestation (activated trap or consumed rodenticide bait) in relation to installed number of bait stations/trap systems per object.

However, it is difficult to compare the number of infestations detected by the consume of rodenticides and catches of digital traps. A detected infestation in rodenticide stations could mean that one mouse consume rodenticide bait in several stations or several mice in one station. In contrary, digital traps catch one mouse that cannot be detected elsewhere. Therefore, data were analysed regarding if an infestation was detected (“1”) or not (“0”) in one month by rodenticides or digital traps (Figure 2). With

digital traps, infestations were detected in significantly more months of 2021 compared to the detection by permanent rodenticide baiting according to the “Unpaired two-samples Wilcoxon test” (p-value = 0.01433).

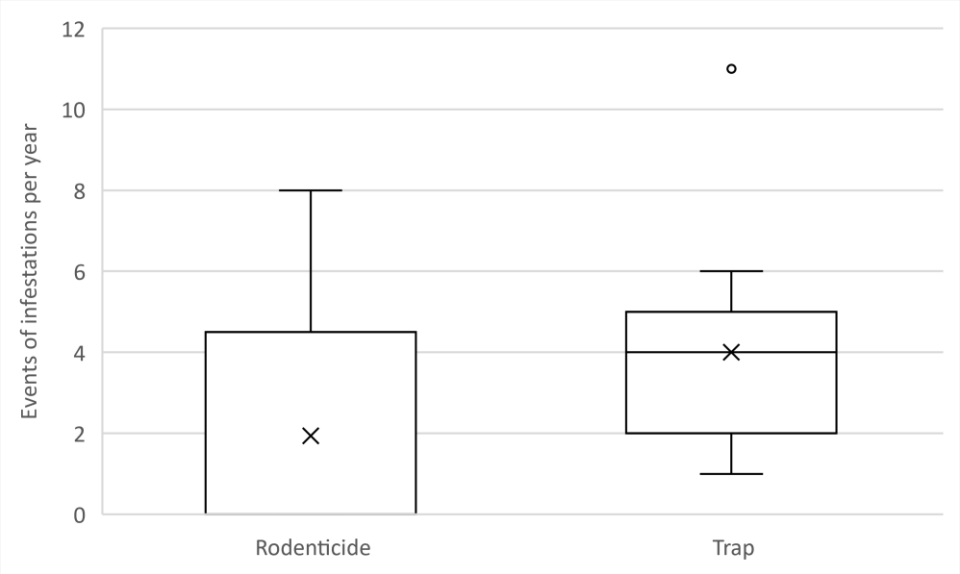

Figure 2: Boxplots of monthly events of infestation per year and object 1-16. If one or more infestations were detected by rodenticides or digital traps in one month, it was counted as one event. If no infestation occurred in one month, it was counted as zero.

Furthermore, an infestation could be detected faster with digital traps. Figure 3 shows the numbers of days until when an infestation was detected with traps or rodenticides. Only objects where a similar number of bait stations/digital traps or more bait stations than digital traps were installed were considered (objects 2; 3; 5; 7; 9; 10; 12; 15). In 4 of these objects, no bait was consumed throughout the year, while mice were detected with digital traps.

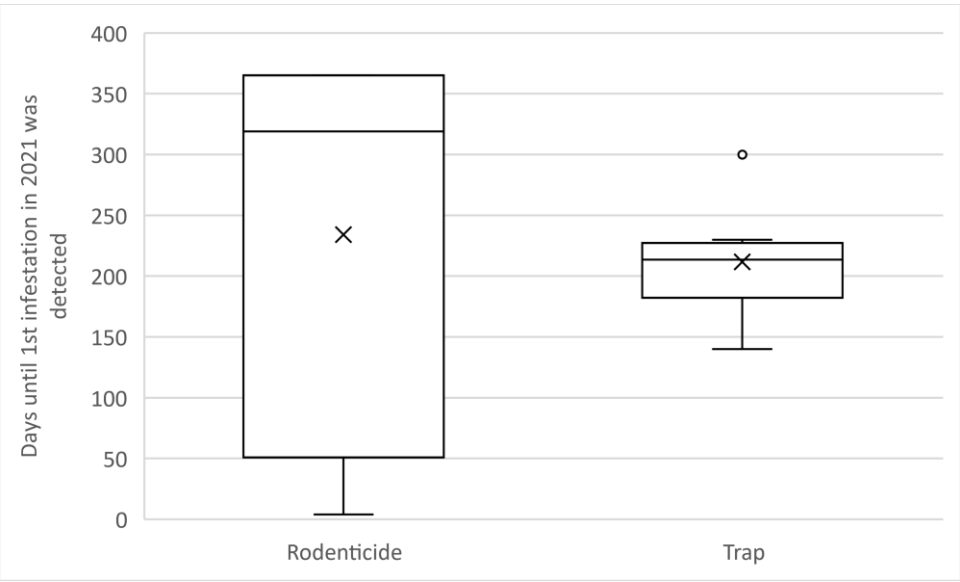

Figure 3: Boxplots of duration in days until the first infestation was detected with rodenticides or digital traps in objects 2; 3; 5; 7; 9; 10; 12 and 15 in 2021. If no infestation was detected (only occurred in bait boxes), it was counted as 365 days until the first detection of an infestation.

In conclusion, the data obtained during professional pest management show that infestations of house mice in the food industry sector could be detected significantly more often and on average earlier than with rodenticides in bait stations.