

Report on effect of *Bird Free* on a night roost of feral pigeons

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Introduction

In order to assess the efficacy of the product *Bird Free* in repelling feral pigeons we performed a test on a night roost site at the Veterinary Clinic of the University of Pisa in San Piero a Grado (Pisa). The night roost subject of the study was located on the north and south rooves of a building which houses heating equipment. Hot air from the equipment is expelled through vents on either side of the building. The warm air from the vents creates an ideal night roost for pigeons.

Materials and methods

In order to document the presence of the birds before and after treatment video-cameras were installed on each roof. The south roof was treated with *Bird Free*; the north roof was treated with empty PET dishes. The cameras recorded a picture every minute.



Figure 1. South roof prior to cleaning and treatment.

The south roof is 9.09 m wide x 4.15 m deep. The area where pigeons roosted was approximately 80 cm deep towards the centre of the roof, tapering to approximately 50 cm at the sides.



Figure 2. South roof before sunset (18:33) on 26th of March 2017, three days before the installation of *Bird Free*.



Figure 3. South roof after cleaning.

On 29th March 2017, more than 100 kg of pigeon faeces were manually removed from the south roof, which was then washed and disinfected.



Figure 4. South roof treated with *Bird Free*.



Figure 5. The area of the south roof treated with *Bird Free* was approximately 9m x 1.8m.



Figure 6. North roof prior to cleaning and treatment.



Figure 7. North roof before sunset (18:45) on the 27th of March 2017, three days before the installation of the empty PET dishes.



Figure 8. North roof after cleaning.

On 30th of March 2017, more than 100kg of pigeon faeces were removed from the north roof, which was then cleaned and disinfected.



Figure 9. North roof treated with empty PET dishes as a “control”.



Figure 10. The area of the north roof treated with empty dishes was approximately 9m x 1.8m.

Data analysis

We considered Day 0 the day of the installation (either with the *Bird Free* or empty dishes). We counted the number of pigeons visible in the photographs recorded by the video-cameras at sunrise, 12.00, 14.30 and sunset for each experimental Days (Day -3, Day -2, Day -1, Day 1, Day 2, Day 3, Day 7, Day 14, Day 30, Day 60, Day 90, 1 year and 2 years). For each experimental day we considered the highest number of birds observed. The median number of birds counted before the treatment was considered as baseline to compute the difference in the highest number of birds present in the experimental days after the treatment.

Results and Conclusion

After the installation of *Bird Free* not one single bird was observed roosting at night on the south roof, while many birds regularly continued to roost on the north roof of the building where empty dishes had been installed. The number of pigeons observed on the north and south rooves on the experimental days at the established times are shown in Table 1 below.

Table 1. Number of pigeons recorded on each experimental day at sunrise, noon, 14.30 and sunset.

		CAM01 South Roof <i>BIRD FREE</i>		CAM04 North Roof Empty Dishes	
DAY	Time	Date	Number of Birds	Date	
-3	sunrise		29		50
	12:00	26/03/2017	44	27/03/2017	0
	14:30		0		0
	sunset		48		52
-2	sunrise		30		34
	12:00	27/03/2017	0	28/03/2017	0
	14:30		0		0
	sunset		39		51
-1	sunrise		22		27
	12:00	28/03/2017	0	29/03/2017	0
	14:30		0		0
	sunset		37		29
1	sunrise		0		29
	12:00	30/03/2017	0	31/03/2017	0
	14:30		0		0
	sunset		0		35
2	sunrise		0		32
	12:00	31/03/2017	0	01/04/2017	0
	14:30		0		0
	sunset		0		25
3	sunrise		0		30
	12:00	01/04/2017	0	02/04/2017	0
	14:30		0		0
	sunset		0		36
7	sunrise	05/04/2017	0	06/04/2017	13
	12:00		0		0
	14:30		0		0

	sunset		0		41
14	sunrise	12/04/2017	0	13/04/2017	21
	12:00		0		0
	14:30		0		1
	sunset		0		48
30	sunrise	28/04/2017	0	29/04/2017	24
	12:00		0		0
	14:30		0		0
	sunset		0		35
60	sunrise	28/05/2017	0	29/05/2017	19
	12:00		0		1
	14:30		0		0
	sunset		0		41
90	sunrise	27/06/2017	0	28/06/2017	47
	12:00		0		2
	14:30		0		0
	sunset		0		37
1 year	sunrise	07/04/2018	0	07/04/2018	18
	12:00		0		0
	14:30		0		0
	sunset		0		29
2 years	sunrise	29/03/2019	0	29/03/2019	9
	12:00		0		0
	14:30		0		0
	sunset		0		23

On the basis of the reported results above, we confirm that *Bird Free* has been 100% effective in dissuading feral pigeons from roosting at night for at least two years after installation.