

Liquid Bird Repellent for Airport



REPUBLIC OF KOREA AIR FORCE

with

EZFLEX CO.LTD



EZFlex Co., Ltd.

INFORMATION FOR PRODUCT &

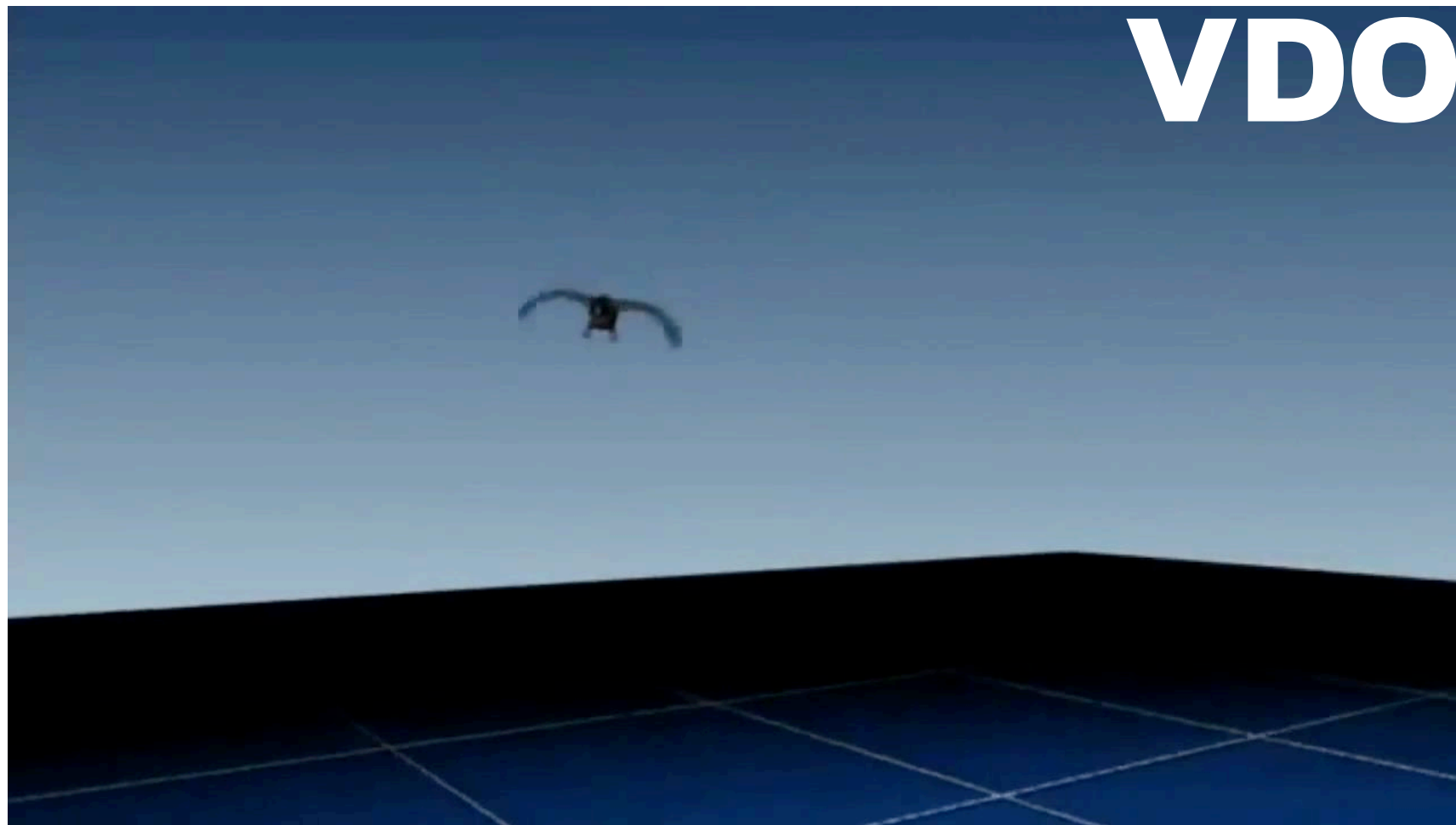
TEST REPORT



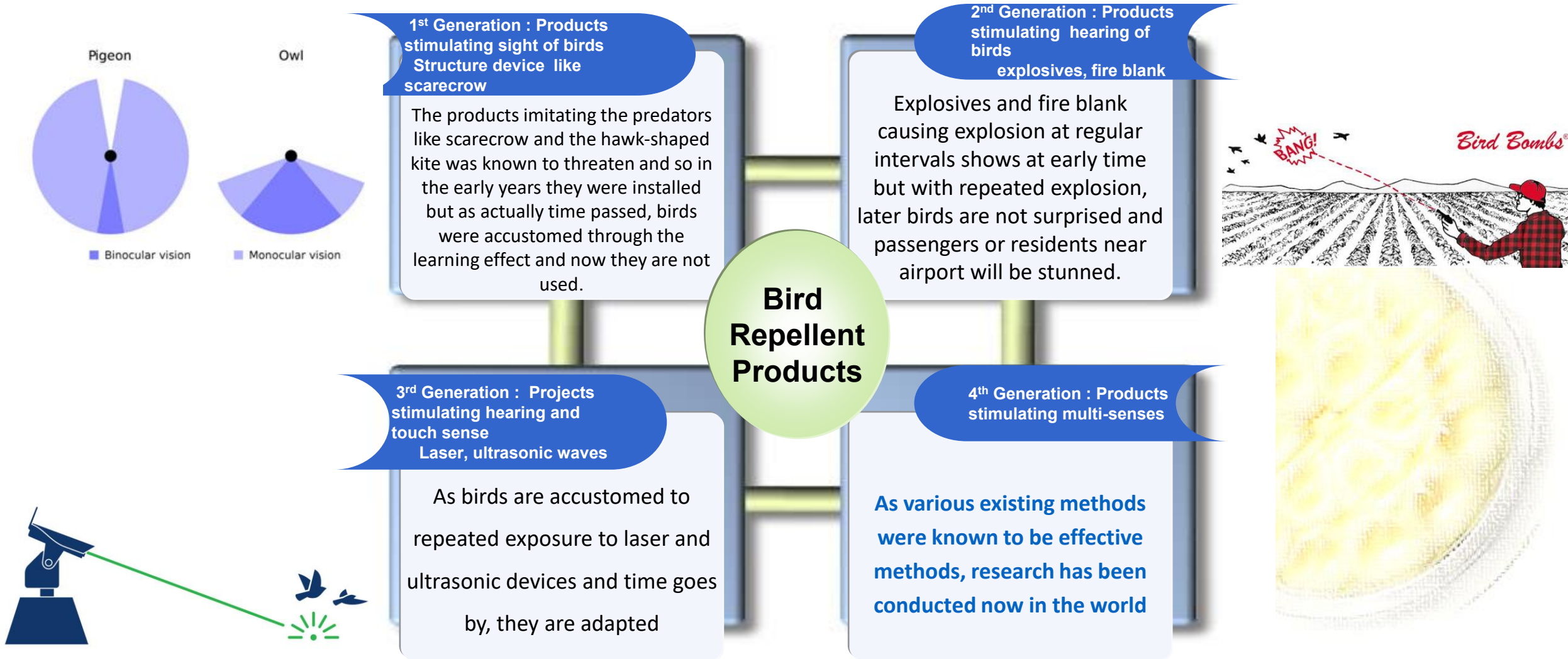
EZFlex Co., Ltd.

VDO FOR PRODUCT USAGE

Company Introduction



Generational Type of Bird Repellent Product



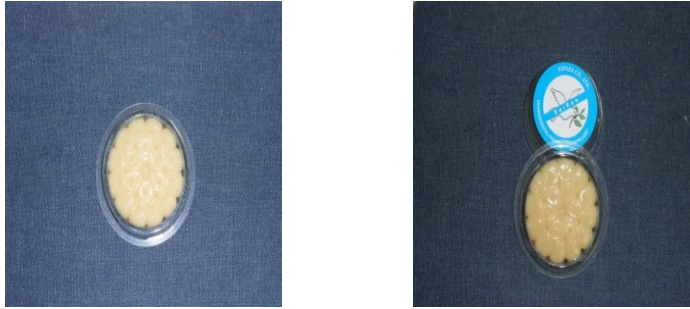
Summary of Products



	Spray-type Repellent	Structure Repellent
Principle of how products work	Cause the repulsion to central nerves through the taste stimulation of birds and stimulate retina and smell and cause the natural dodging through strong multi-senses to prevent the repeated learning.	Cause the stimulation of multi-senses(sight, touch sense, smell, hearing) and cause fear to prevent immediately birds and as the repellent resists climate change(rain, and snow), the products continue to show the effect for the long term without climate.
Characteristics of Products	<ul style="list-style-type: none"> ▶ Show the strong dodging effect as the eco-friendly product without harm to the environment and human body with natural perfume derived from plant ▶ Able to spray simply through existing spraying vehicle ▶ Ease the difficulties of burden by spraying in the matter of 5 days rather than daily spraying 	<ul style="list-style-type: none"> ▶ Able to install tailored to the damaged field and format ▶ Simple product produced to enable to construct easily and simply ▶ Product with trust as the products with patents. ▶ Product completing the verification of installation over 30,000 cases ▶ Consistent effect without climate change as products are strong to climate change like snow and rain
Product stability in its aspect of human body and environment	Gotten Test Report commissioned by Korea Conformity Laboratories which is the test certification about whether products include heavy metal harmful to human body and environment	



Summary of Products



	Structure Repellent
Product Photo	
Name	Sairen and Soft Gel (for structure)
Main Element	Natural Herb Extract and others
Persisting Effect	Different depending on climate change, but in case of outdoor 3~5 years and in case of outdoor more than 5 years(But, effect guaranteeing period is 2 years).
Principle of how the products work	Cause the stimulation of multi-senses(sight, touch sense, smell, hearing) and cause fear to prevent immediately birds and as the repellent products resist climate change(rain, and snow), the products continue to show the effect in the long term regardless of climate.
Stability to Human	No harm to human body by using material registered in FDA of USA and natural herb extract

Summary of Products



	Spray-type Repellent
Product Photo	 
Name	Sairen and Spray-type
How to use	After using spraying vehicle owned by airport and diluting 25:1 with water, products will be sprayed for 3 days in a row at early stage every 5 day.(refer to the attached detailed manual
Main Element	Mixture of natural herb extract
Package Unit	20kg.
Principle of How the products work	Cause repulsion and stimulate retina and smell at the same time by stimulating central nerve as well as sense of taste when birds eat bugs or plants exposed to the chemicals by spraying the products to grass or lawn . Eco-friendly fluid -type bird repellent products to prevent the re-access by making learning impossible through multi-senses stimulation of birds.
Stability of Human	Product M - main ingredient is mixture of natural herb extract, which makes it harmless to human and harmless to environment

Certificate



Business Lience

국세청
www.nts.go.kr

사업자등록증
(법인사업자)
등록번호 : 212-81-89359

법인명(단체명) : (주) 이지플렉스
대표자 : 허원욱

개업연월일 : 2010년 02월 01일 법인등록번호 : 110111-4272285
사업장소재지 : 서울특별시 강동구 성내로6가길 8(성내동, 유원빌딩 503호)

본점소재지 : 서울특별시 강동구 성내로6가길 8(성내동, 유원빌딩 503호)

사업의종류 : ☒ [제조업] ☐ [중도매] ☐ [소매] ☐ [서비스]
[제조업] 조류퇴치제
[중도매] 섬유류판매업
[소매] 조류퇴치제
[서비스] 무역
[서비스] 통신판매업
[서비스] 바이오연구및개발업
[서비스] 조류퇴치제설치및유지보수

발급사유 : 정정

사업자단위과세적용사업자여부 : 여 () 부 (☒)
전자세금계산서전용전자우편주소 :

2015년 04월 10일
강동세무서장

국세청

제 20120104016 호

벤처기업확인서

업체명 : (주)이지플렉스
대표자 : 허원욱
소재지 : 서울특별시 강동구 성내동 457-22 유원빌딩 503호
확인유형 : 기술평가보증기업(기술보증기금)
평가기관 : 기술보증기금
유효기간 : 2012년 05월 02일 ~ 2014년 05월 01일

위 업체는 벤처기업육성에관한특별조치법 제25조의
규정에 의하여 벤처기업임을 확인합니다.

2012년 05월 02일

KIBO 기술보증기금 이사장



Certificate of Venture Company

Certificate



ISO 9001:Certificate of 2008 Quality Management System



Certificate of Department Designated for R&D

Certificate



**Certificate of Patent :
Composition for
Wild Birds Repellent**

특 허 증
CERTIFICATE OF PATENT

특 허 제 10-1152343 호 (PATENT NUMBER)	출원번호 (APPLICATION NUMBER) 제 2011-0050829 호
	출원일 (FILING DATE:YY/MM/DD) 2011년 05월 27일
	등록일 (REGISTRATION DATE:YY/MM/DD) 2012년 05월 25일


발명의명칭 (TITLE OF THE INVENTION)
야생조류 퇴치용 조성물

특허권자 (PATENTEE)
(주)이지플렉스(110111-4*****)
서울특별시 강동구 성내로6가길 8, 유원빌딩 503호 (성내동)

발명자 (INVENTOR)
등록사항란에 기재

위의 발명은 「특허법」에 의하여 특허등록원부에 등록되었음을 증명합니다.
(THIS IS TO CERTIFY THAT THE PATENT IS REGISTERED ON THE REGISTER OF THE KOREAN INTELLECTUAL PROPERTY OFFICE.)

2012년 05월 25일

 **특 허 청**
COMMISSIONER, THE KOREAN INTELLECTUAL PROPERTY OFFICE

연차등록료 납부일은 설정등록일 이후 4년차부터 매년 05월 25일까지이며 등록원부로 권리관계를 확인바랍니다.

특 허 증
CERTIFICATE OF PATENT

특 허 제 10-1008308 호 (PATENT NUMBER)	출원번호 (APPLICATION NUMBER) 제 2010-0027001 호
	출원일 (FILING DATE:YY/MM/DD) 2010년 03월 25일
	등록일 (REGISTRATION DATE:YY/MM/DD) 2011년 01월 07일


발명의명칭 (TITLE OF THE INVENTION)
조류 퇴치용 조성물

특허권자 (PATENTEE)
(주)이지플렉스(110111-4*****)
서울 강동구 성내동 457-22 유원빌딩 503호

발명자 (INVENTOR)
등록사항란에 기재

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2011년 01월 07일

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COMMISSIONER, THE KOREAN INTELLECTUAL PROPERTY OFFICE

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**Certificate of Patent :
Composition for
Birds Repellent**



Certificate



Notice of Composition PCT International Application No. for Bird Repellent

특 허 협 력 조 약 (PATENT COOPERATION TREATY) PCT/KR2012/004148

발신:수리관청
수신:
리엔특허법인
서울시 서초구 서초동 1575-1 137-875 대한민국

PCT
국제출원번호 및 국제출원일 통지서
(PCT 규칙 20.2(c))

발송일 (일/월/년) 2012년 05월 29일 (29.05.2012)

출원인 또는 대리인의 서류참조기호 GN-41319-PCT 중요통지사항

국제출원번호 PCT/KR2012/004148 국제출원일 (일/월/년) 2012년 05월 24일 (24.05.2012) 우선일 (일/월/년) 2011년 05월 27일 (27.05.2011)

출원인 (주)이지폴텍스 등

발명의 명칭 야생조류 퇴치용 조성물 및 이를 이용한 야생조류 퇴치방법

1. 이 국제출원은 위에 기재된 바와 같이 국제출원번호와 국제출원일이 부여되었습니다.

2. 이 국제출원의 기록원본은:

☐ _____ 자로 국제사무국에 송부되었습니다.

☐ 아래의 사유로 인하여 아직 국제사무국에 송부되지 않았으며, 이 통지서의 사본은 국제사무국에 송부되었습니다*:

☐ 국가안전보장에 필요한 허가를 얻지 못했음

☐ 기타 (이유를 상술):

* 국제사무국은 수리관청에 의한 기록원본의 송달을 감시하고 그 접수사실을 출원인에게 통지합니다. (시식 PCT/IB/301). 국제사무국은 우선일부터 14일이 경과할 때까지 기록원본을 수령하지 않은 때에는 출원인에게 이를 통지합니다. (규칙 22.1(c)).

수리관청명칭 및 우편주소
대한민국 특허청
(302-701) 대전광역시 서구 청사로 189, 4층 (문안동, 정부대전청사)
팩스번호: 82-42-472-7140
시식 PCT/RO/105 (2008년 7월)

특허청장
전화번호: 82-42-481-8552

특 허 증
CERTIFICATE OF PATENT

특 허 제 10-1328111 호 (PATENT NUMBER) 출원번호 (APPLICATION NUMBER) 제 2011-0001668 호
출원일 (FILING DATE:YY/MM/DD) 2011년 01월 07일
등록일 (REGISTRATION DATE:YY/MM/DD) 2013년 10월 30일

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조류 퇴치용 장치

특허권자 (PATENTEE)
(주)이지폴텍스(110111-4*****)
서울특별시 강동구 성내로6가길 8, 유원빌딩 503호 (성내동)

발명자 (INVENTOR)
등록사항란에 기재

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(THIS IS TO CERTIFY THAT THE PATENT IS REGISTERED ON THE REGISTER OF THE KOREAN INTELLECTUAL PROPERTY OFFICE.)
2013년 10월 30일

특 허 청 장 김 영
COMMISSIONER, THE KOREAN INTELLECTUAL PROPERTY OFFICE

연차등록료 납부일은 설정등록일 이후 4년차부터 매년 10월 30일까지이며 등록원부로 권리관계를 확인바랍니다.

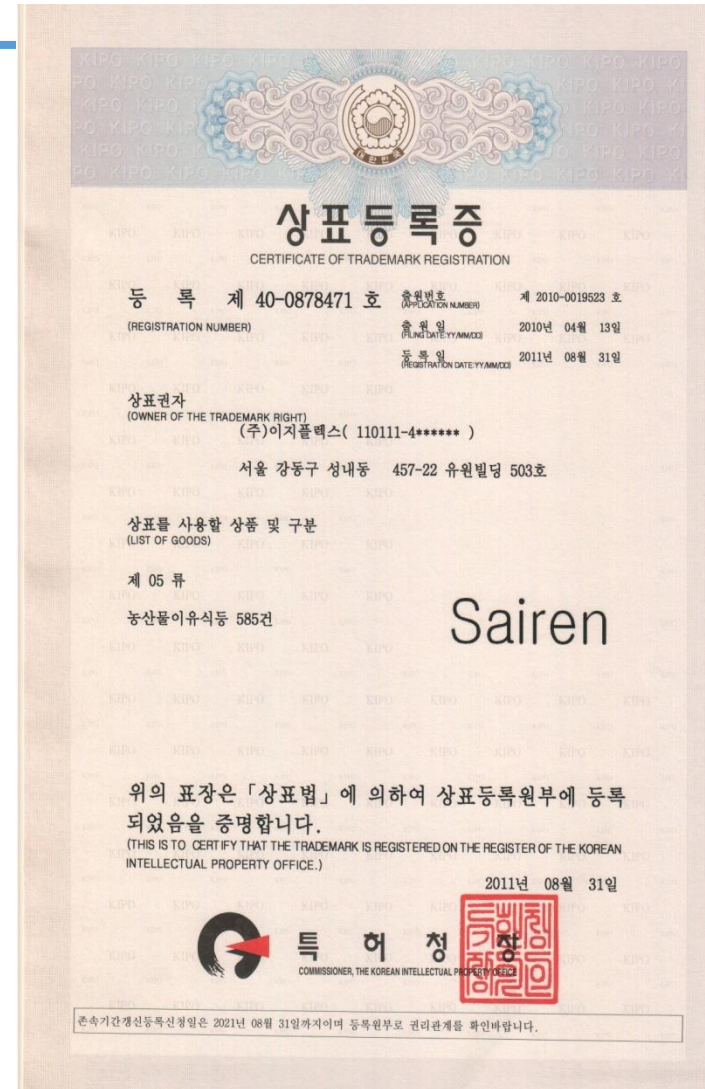
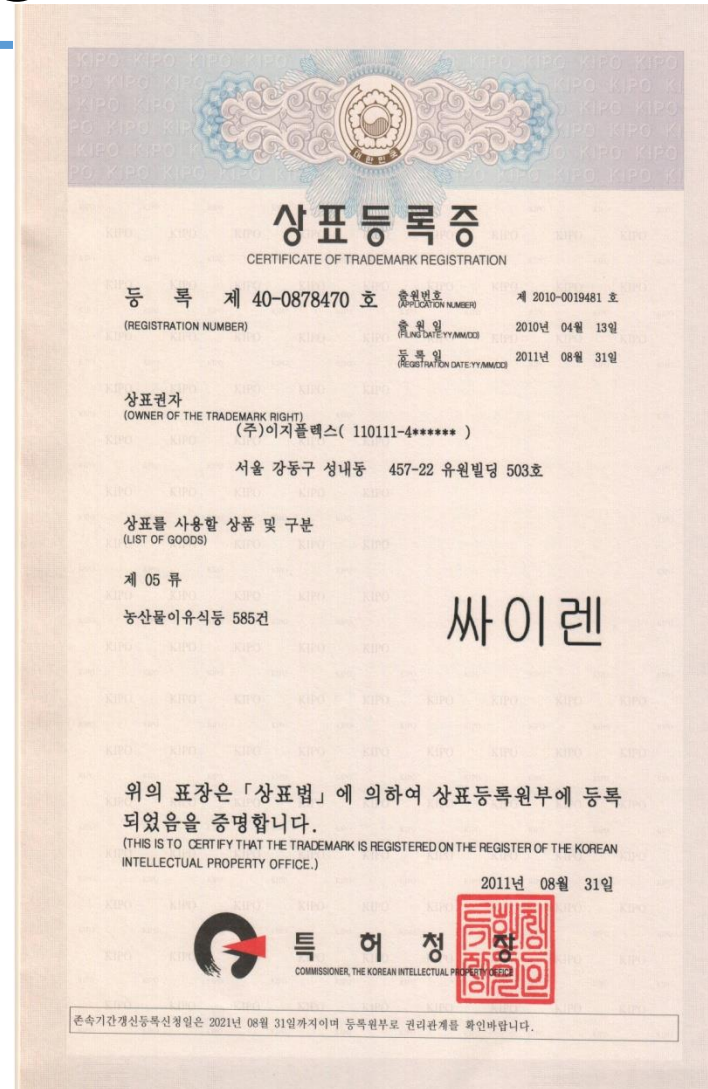


Certificate of Patent:
Bird Repellent Device

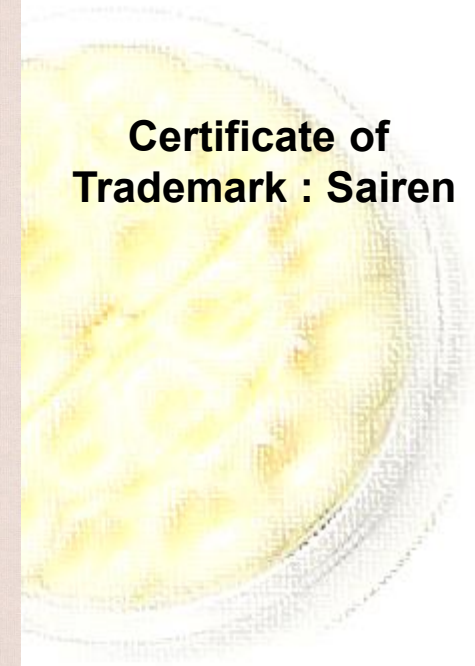
Certificate




Certificate of
Trademark : Sairen



Certificate of
Trademark : Sairen


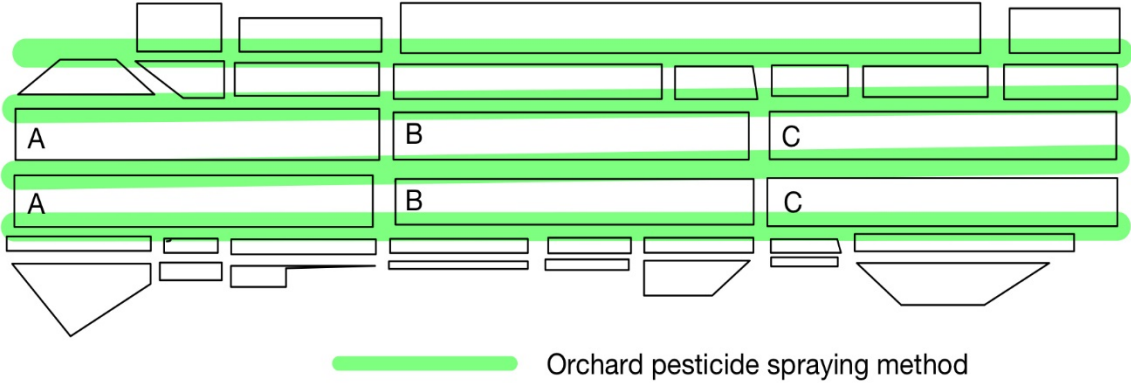


☐ **Liquid bird repellent ingredients and support companies**

Product photo	Contents
	<ul style="list-style-type: none"> ○ Dilution ratio with water <ul style="list-style-type: none"> - 25 : 1 (water : Sairen) (Company recommendation)
	<ul style="list-style-type: none"> ○ Spray cycle <ul style="list-style-type: none"> - 3rd time /3 days and respray after 5 days (Respray after rain)
	<ul style="list-style-type: none"> ○ Ingredient <ul style="list-style-type: none"> - Natural herbal extract (Environmentally friendly)
	<ul style="list-style-type: none"> ○ Principle <ul style="list-style-type: none"> - Avoiding approach through sensory stimulation (sight (retina), smell, taste)
<p align="center">Company Introduction</p>	
<ul style="list-style-type: none"> <input type="checkbox"/> Company name: Ezflex CO.LTD (CEO: Kang Bo-Hong 010-4318-3575) <input type="checkbox"/> Headquarters: Room 902, Jungang Building, 44-21, Yeouido-dong, Yeongdeungpo-gu, Seoul <input type="checkbox"/> Factory : 305 Seokgye-ri, Sangbuk-myeon, Yangsan-si, Gyeongsangnam-do 	

☐ Bird repellent spray

▲ Spraying using ancillary equipment


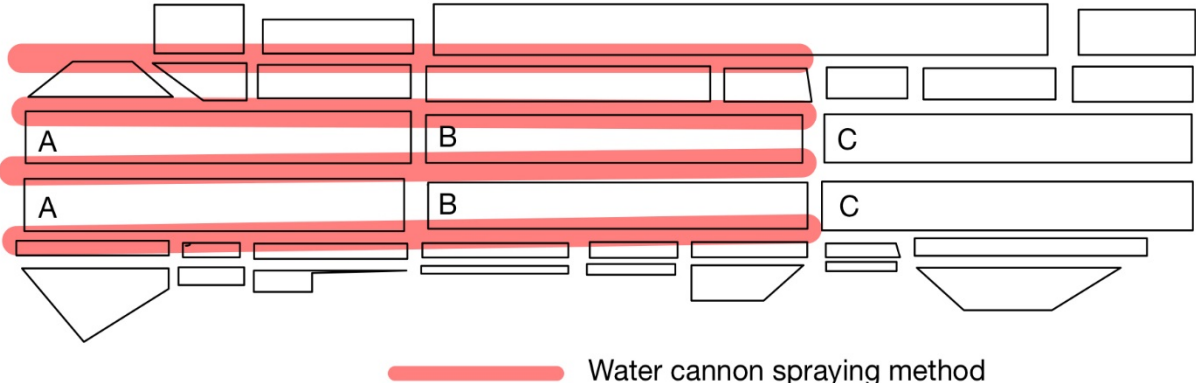
Spraying method (equipment)	Time and Form
 <p>Dilution ratio (25: 1)</p>	<p>○ Period : 2015. 8. 31 ~ 9. 18 every day</p> <p>○ Method : Orchard farm pesticide spraying formula (fine vapor in the form of a mist)</p>
Bird repellent application area (using 400 liters)	
<p style="text-align: center;">Siren Spray</p>  <p style="text-align: center;">Orchard pesticide spraying method</p>	

○ Advantages and Disadvantages of Spreading Equipment

- Advantages: Reduction of labor by spraying using automated equipment and a rather wide range of diffusion by spraying in the form of vapor
- Disadvantages: The scent of the solution is not strong due to the vapor type spray, and the scent persistence is lowered as the diffusion range is widened.

▲ Spraying using the operation company's own equipment

(Water stream pump)

Spraying method (equipment)	Spray time
 <p>Dilution ratio (25: 1)</p>	<ul style="list-style-type: none"> ○ Period : From August 31 to September 18, 2015 2nd and 3rd weeks (Thursday, Friday) spraying a total of 4 times (Thursday afternoon, Friday morning) ○ Method : Water-type pump equipment
<p>Bird repellent application area (300 liters used)</p>	
<p style="text-align: center;">Siren Spray</p>  <p style="text-align: center;">Water cannon spraying method</p>	

○ Advantages and Disadvantages of Spreading Equipment

- Advantages: The fragrance of the solution is strong due to spraying in the form of a stream, and the fragrance around the spraying area Sustainability
- Disadvantages: Fatigue of the operator by spraying using manpower

□ Conclusion

Until now, we have been using a variety of equipment (Gas bomber, Blast bomb, Shotgun, Scarecrow, Glitter line) to exterminate birds, but we have been experiencing many difficulties as the number of individuals has not decreased.

The liquid bird repellent tested was effective and after two weeks of continuous spraying, it was able to experience a rapid decrease in population from the third week. In addition, some birds returned in Week 5, but the population was significantly reduced.

Liquid bird repellent test report

REPUBLIC OF KOREA AIR FORCE

With EZFLEX CO.LTD



Certificate



Test Report

the way to trust

KCL

시험성적서

1. 성적서번호 : CT12-40512

2. 의뢰자

○ 업체명 : (주)이지플렉스

○ 주소 : 서울 강동구 성내동 457-22 유원빌딩 503호

○ 의뢰일자 : 2012.08.20

○ 시험발급일 : 2012.08.28

3. 시험성적서의 용도 : 거래처 제출

4. 시료명 : SaiRen

5. 시험결과

- 첨부 페이지 참조 -

확인

작성자

성명 박선영

기술책임자

성명 조훈식

비고: 1. 이 성적서는 의뢰자가 제시한 시료 및 시료명으로 시험한 결과로서 전체제품에 대한 품질을 보증하지는 않습니다.

2. 이 성적서는 홍보, 선전, 광고 및 소송용으로 사용될 수 없으며, 용도 이외의 사용을 금합니다.

한국건설생활환경시험연구원

본원 : 153-803 서울 금천구 가산동 459-28 02-2102-2500

결과문의 : 정밀화학분석센터 ☎(02)2102-2688

총 2 페이지 중 1 페이지

양식QP-20-01-05(1)

the way to trust

KCL

시험성적서

성적서번호: CT12-40512

시험항목	단위	시험결과	시험방법
납(Pb)		불검출(검출한계 5)	EPA 3052:1996 시험장비 : ICP-OES
카드뮴(Cd)		불검출(검출한계 1)	EPA 3052:1996 시험장비 : ICP-OES
셀레늄(Se)	mg/kg	불검출(검출한계 5)	EPA 3052:1996 시험장비 : ICP-OES
6가 크로뮴(Cr(VI))		불검출(검출한계 1)	EPA 3060A:1996 UV-Vis. Spectrophotometer
시안		불검출(검출한계 0.01)	EPA 9012A:1996
Polychlorinated biphenyl (PCBs)			
Chlorobiphenyl		불검출(검출한계 1)	EPA 3540C:1996
Dichlorobiphenyl		불검출(검출한계 1)	
Trichlorobiphenyl		불검출(검출한계 1)	
Tetrachlorobiphenyl		불검출(검출한계 1)	
Pentachlorobiphenyl		불검출(검출한계 1)	
Hexachlorobiphenyl	mg/kg	불검출(검출한계 1)	
Heptachlorobiphenyl		불검출(검출한계 1)	
Octachlorobiphenyl		불검출(검출한계 1)	
Nonachlorobiphenyl		불검출(검출한계 1)	
Decachlorobiphenyl		불검출(검출한계 1)	

----- 이하 여백 -----

총 2 페이지 중 2 페이지

양식QP-20-01-06(1)



▲ Detailed application status of liquid bird repellent

- ☐ Weeks 1 to 3 : Spraying using ancillary equipment (fin steam) Spraying every day (except holidays)
- ☐ 2 weeks, 3 weeks: Spraying using the operation company equipment (water stream type) Spraying neck and gold (total 4 times)
- ☐ 4 weeks, 5 weeks: No repellent spray (Effect persistence analysis)

Repellent spray			Dilution ratio	Spraying capacity	Observation bird
Date	Time	Sunrise			
8. 31(M)	07:25	05:58	25 : 1	500 liters	Swallow300, Kestrel7, Magpie10
9. 1(T)	08:30	05:59	25 : 1	500 liters	Swallow800, Kestrel7, Magpie10
9. 2(W)	08:05	05:59	25 : 1	500 liters	Swallow800, Kestrel5, Magpie7
9. 3(T)	08:00	06:00	25 : 1	500 liters	Swallow800, Kestrel4, Magpie8
9. 4(F)	08:00	06:00	25 : 1	500 liters	Swallow800, Kestrel5, Magpie7
9. 5(S)	07:30	06:01	25 : 1	500 liters	Swallow500, Kestrel3, Magpie5
9. 6(S)		06:02			
9. 7(M)	08:00	06:03	25 : 1	500 liters	Swallow300, Kestrel5, Magpie5
9. 8(T)	08:30	06:04	25 : 1	500 liters	Swallow400, Kestrel3, Magpie8
9. 9(W)	08:05	06:05	25 : 1	500 liters	Swallow500, Kestrel3, Magpie10
9. 10(T)	08:00	06:06	25 : 1	500 liters	Swallow700, Kestrel0, Magpie5
			25 : 1	600 liters	
9. 11(F)	07:00	06:07	25 : 1	300 liters	Swallow200, Kestrel5, Magpie5
	08:00		25 : 1	500 liters	
9. 12(S)	08:00	06:07	rain until dawn		Swallow300, Kestrel0, Magpie6
9. 13(S)		06:08			
9. 14(M)	08:00	06:09	25 : 1	500 liters	Swallow10, Kestrel4, Magpie0
9. 15(T)	08:30	06:11	25 : 1	500 liters	Swallow50, Kestrel6, Magpie8
9. 16(W)	08:05	06:11	25 : 1	500 liters	Swallow500, Kestrel8, Magpie8
9. 17(T)	08:00	06:12	25 : 1	500 liters	Swallow40, Kestrel3, Magpie4
	12:00		25 : 1	400 liters	
9. 18(F)	07:00	06:12	25 : 1	300 liters	Swallow30, Kestrel4, Magpie4
	08:00		25 : 1	500 liters	
9. 19(S)	08:00	06:13	Swallow300("B" Parking lot 150, Military officer 150), Kestrel0, Magpie6		
9. 20(S)		06:14			
9. 21(M)		06:15	No bird repellent spray		Militaryofficer Magpie150
9. 22(T)		06:16	"		Swallow0, Kestrel1, Magpie2
9. 23(W)		06:16	"		Swallow0, Kestrel0, Magpie0
9. 24(T)		06:17	"		Swallow0, Kestrel1, Magpie0
9. 25(F)		06:17	"		Swallow0, Kestrel1, Magpie2
9. 26(S)		06:18	"		
9. 27(S)		06:19	"		
9.28(M)		06:21	"		Swallow15, Kestrel2, Magpie6
9. 29(T)		06:21	"		Swallow100, Kestrel0, Magpie3, Crow3
9. 30(W)		06:22	"		Swallow5, Kestrel6, Magpie4, Crow2
10. 1(T)		06:23	"		rain during the day
10. 2(F)	08:00	06:24	25:1 Spraying with accessory equipment		Swallow15, Kestrel0, Magpie5, Calf30

☐ Activity status by individual (Repellent sprayed for 1-3 weeks / No repellent sprayed for 4 weeks)

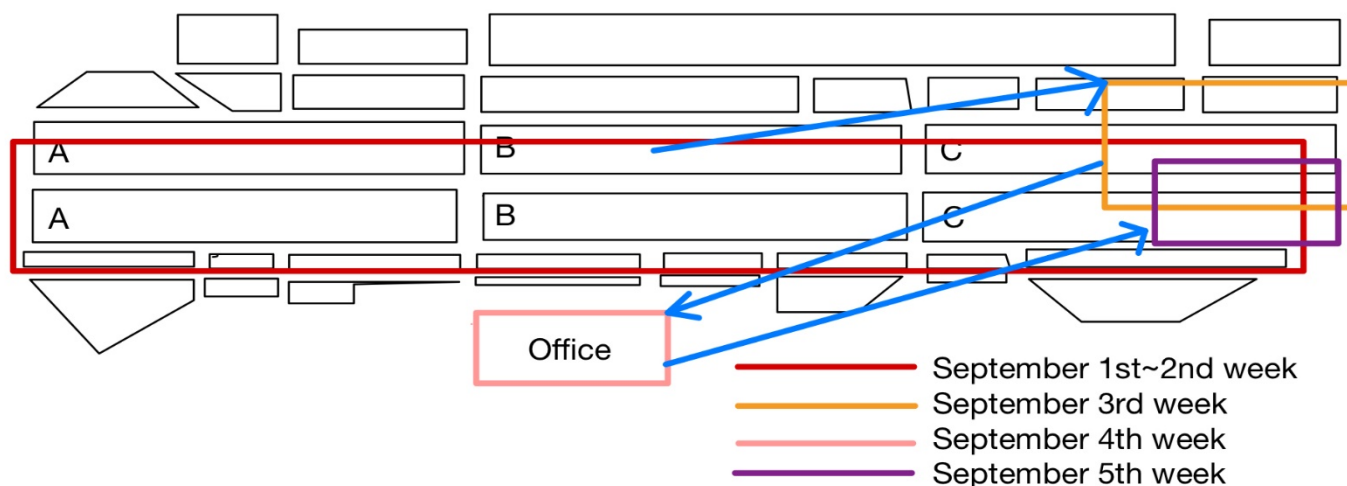
▲ migratory bird (Swallow)

☐ Water spray date display

Time	September 1st					September 2nd					September 3rd					September 4th					September 5th				
	Swallow					Swallow					Swallow					Swallow					Swallow				
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
06		80 0		80 0				150																	
07	90	80 0	800	68 0	99 0		40 0	300	50 0	20 0		50	200	4 0	3 0									A	
08	200	93 0	800	80 0	83 0	300	40 0	300	30 0	20 0		30	300										r	3 0	
09	100	80 0	800	80 0	90 0	300	30 0	300	40 0	15 0	5		300							15	10 0		m		
10		80 0	660			300	20 0	300	40 0	50			50										y	2 5	
11						30	5	100													5	.			
12							20																s		
13																									
14																							D		
15																							A		
16																							y		
17	200					30				30															
18																									
Observation average	500	80 0	800	80 0	90 0	300	40 0	500	70 0	20 0	6	50	300	4 0	3 0						15	10 0			3 0
	500 ~ 990					200 ~ 700					6 ~ 300					0 (military officer 150)			0	0 ~ 100					
Gunshot Status	18	10			8	5	10	29	28	17		10	8											2	

▲ Movement route of the Swallow activity area (East → North West end → Out of line (Office) → North West end)

Swallow activity analysis (September)



▲ Detailed analysis of Swallow activity

● Weekly analysis

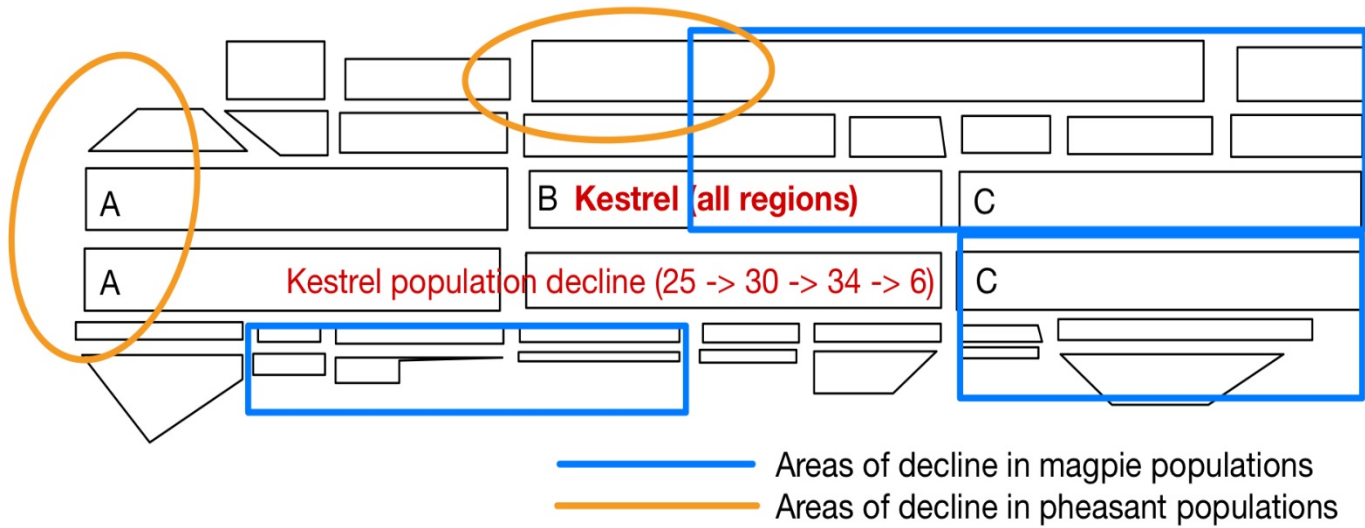
Contents	Spray method	Post-spray observation area	Reason (estimate)
1 ~ 3 weeks	Steam spraying method (0~9,000ft) (RWY, TWY edge of grass 3-5m)	East side, Middle (About 1,000 birds)	<ul style="list-style-type: none"> - The east side area is more than twice as wide as the west side area, but as the same amount is applied, there are relatively many areas outside the effect area. -The western area has relatively high continuity after spraying as low mountains are located adjacent to the taxiway and are less affected by the northwest wind.
2 weeks, 3 weeks (Thursday, Friday)	Water spray method (0~6,000ft) (RWY, TWY edge of grass 5~10m)	Northernmost area (300 birds)	<ul style="list-style-type: none"> - It is judged that the movement area was moved by avoiding the water spray area. -The number of observed individuals decreased significantly on Monday of the following week after water stream spraying (Thursday, Friday), but it is judged to increase again from Tuesday when the persistence decreases.
4 weeks	No spray (Steam spraying method on Friday)	No observation (Military Office Area 150)	<ul style="list-style-type: none"> - It is judged that it moved to the outskirts by avoiding the line due to continuous spraying in the line area for 3 weeks.
5 weeks	No spray	Northernmost area (Mon, Tue birds)	<ul style="list-style-type: none"> - After 2weeks of spraying the bird repellent, the persistence of the effect ends and the birds appear again.

▲ Resident birds (Kestrel, Magpie, Pheasant)

Time	September 1st					September 2nd					September 3rd					September 4th				
	Kestrel					Kestrel					Kestrel					Kestrel				
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
06						3	3		3						4					
07	2			5		1	4			3		2	6				1			
08						1	1							3						
09								2			4	1								
10																			1	
11												1				1				
12																2				
13																				
14			3							2			1							
15		5																		1
16												2	2							
17								2					6							
18	7				3	4		1				2								
Observation	9	5	3	5	3	9	8	5	3	5	4	8	15	3	4	3	1		1	1
	25					30					34					6				
Gunshot Status	2		1	2	1	2	1	1				5	1		2					

▲ Analysis of the activity of resident birds (in general, the number of active individuals decreased)

Residential bird (kestrel, magpie, pheasant) activity analysis (September)



Analysis of the effect of liquid bird repellent (Sairen) (9-1)

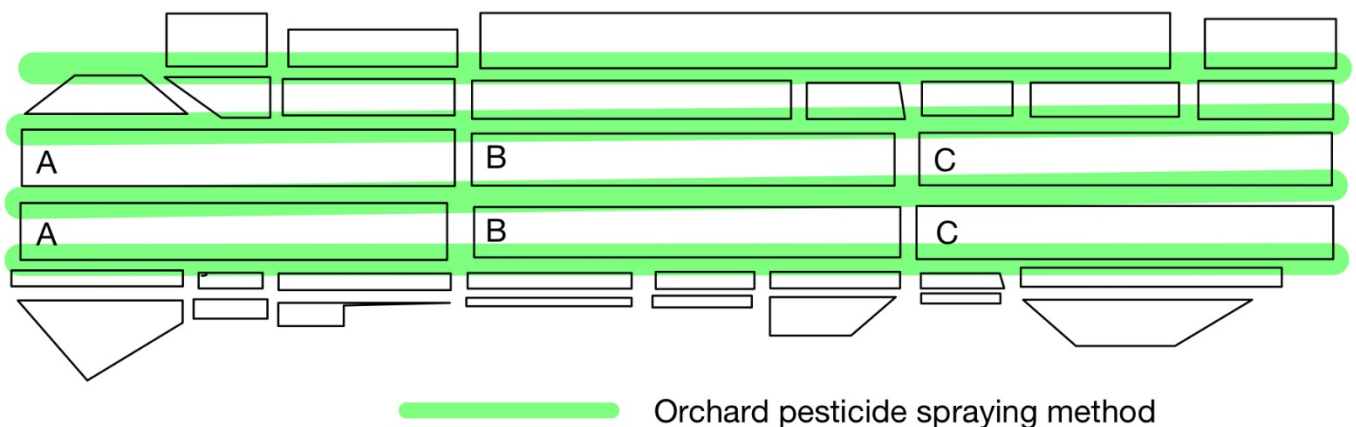
☐ Spraying Status and Birds Observed

September 1, 2015

Sairen spray			Dilution ratio	Total spraying capacity	Observation bird
Date	Time	Sunrise			
8. 31	07:25	05:58	25: 1	500 liters	Swallow300, Kestrel7, Magpie10
9. 1	08:30	05:59			Swallow800, Kestrel7, Magpie10
9. 2	08:05	05:59			Swallow800, Kestrel5, Magpie7
9. 3	08:00	06:00			Swallow800, Kestrel4, Magpie8
9. 4	08:00	06:00			Swallow800, Kestrel5, Magpie7

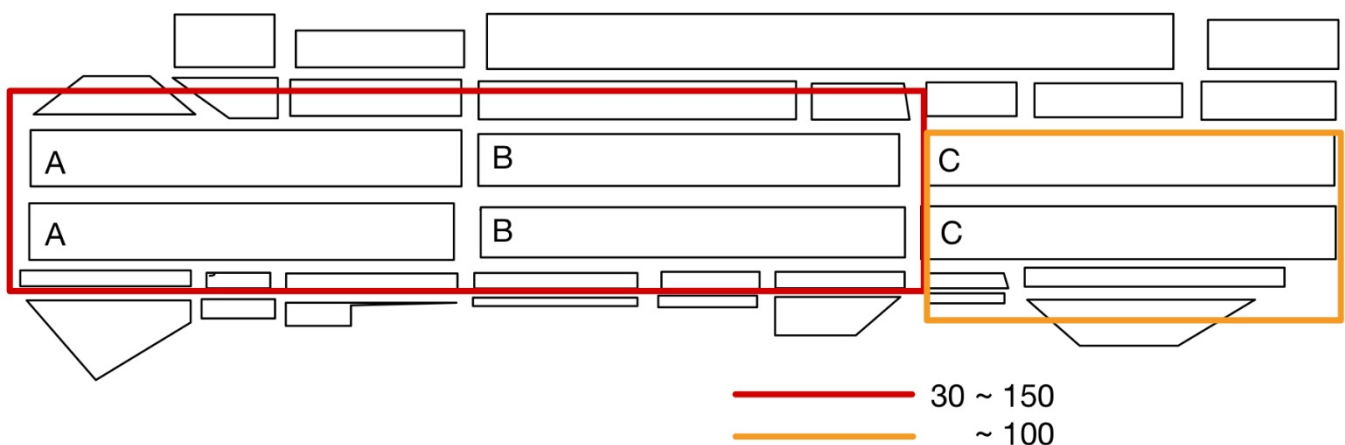
☐ Spray area

Siren Spray (September 1st)



☐ Analysis of swallow activity by location after spraying

Swallow activity analysis (September 1st week)



☐ Hourly bird activity analysis

Time (Temperature)	Analysis of bird activity by individual weekly and hourly (threat objects around the runway)																							
	Swallow					Kestrel					Magpie					Egret and Herons								
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F				
06:00 (19)		800		800							15	15	10	10	10			15						
07:00 (20)	300	800	800	800	1,000	2			5							20								
08:00 (21)	200	800	800	800	800																			
09:00 (22)	100	800	800	800	800																			
10:00 (25)		800	400																					
11:00 (27)																								
12:00 (29)																								
13:00 (30)																								
14:00 (30)								3																
15:00 (29)							5																	
16:00 (29)																								
17:00 (28)	100																							
18:00 (27)						7				3														
Gunshot	18	10			8	2		1	2	1						1			1					
Analysis	Temperature and sun rejection					Continues during the day or rests mainly on the runway in the morning and evening					Continuation during the day					Check mainly in the morning and evening								
Activity analysis status																								
Identified object						Main activity location									Daily average		Gunshot Status							
New object			Scolopacidae			Birds in the changing seasons									0 ~ 4		2							
Existing object			Pheasant			East and West, Southern grassland									4		2							
			Pestrel			Over the runway									4~7		6							
			Swallow			Grassland (Middle, East side), East side R/W, East side T/W									800		36							
			Ardegua			"C" parking lot around the soccer field									20		1							
			Magpie			"C", "F", "E" Area taxiways									15									
Main combat action			Pigeon			South end bypass and "C" Parking lot, Ungwandae									10		1							
			Equipment		Gas bomber, Blast bomb, Shotgun, Shotgun, Scarecrow, Glitter line																			
		Chemicals		Spraying insecticides and liquid bird repellent / liquid (with free cooperation with Ezflex)																				

Analysis of the effect of liquid bird repellent (Sairen)(9-2)

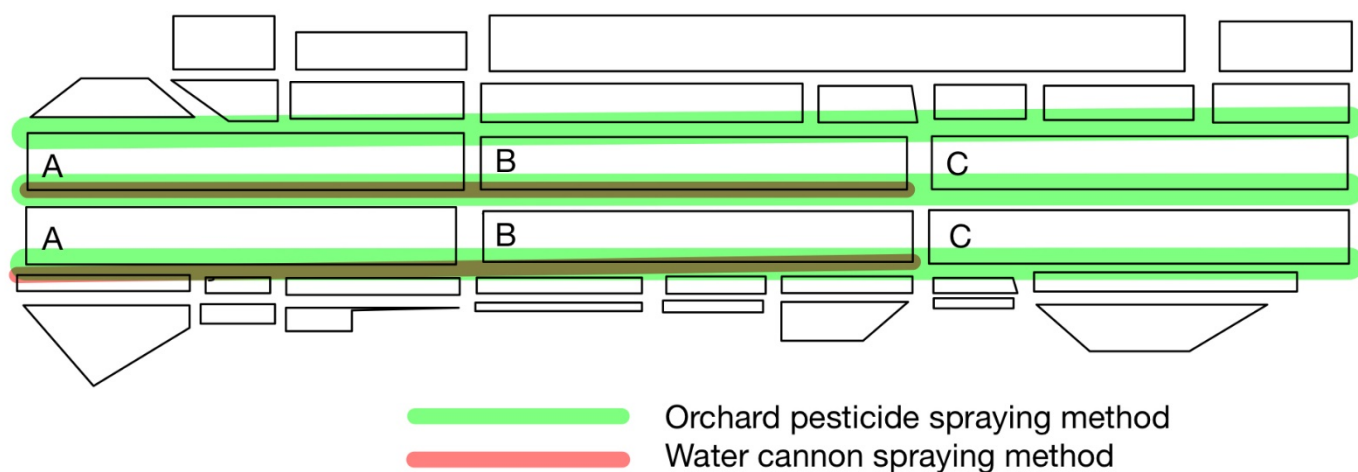
☐ Spraying Status and Birds Observed

September 2nd, 2015

Sairen spray			Dilution ratio	Total spraying capacity	Observation Bird
Date	Time	Sunrise			
9. 7	08:00	06:03	25 : 1	500 liters	Swallow300, Kestrel5, Magpie5
9. 8	08:30	06:04	25 : 1	500 liters	Swallow400, Kestrel3, Magpie8
9. 9	08:05	06:05	25 : 1	500 liters	Swallow500, Kestrel3, Magpie10
9. 10	08:00	06:06	25 : 1	500 liters	Swallow700, Kestrel0, Magpie5
	14:00		25 : 1	600 liters	
9. 11	07:00	06:07	25 : 1	300 liters	Swallow200, Kestrel5, Magpie5
	08:00		25 : 1	500 liters	
9. 12	08:00	06:07	rain till dawn		Swallow300, Kestrel0, Magpie6

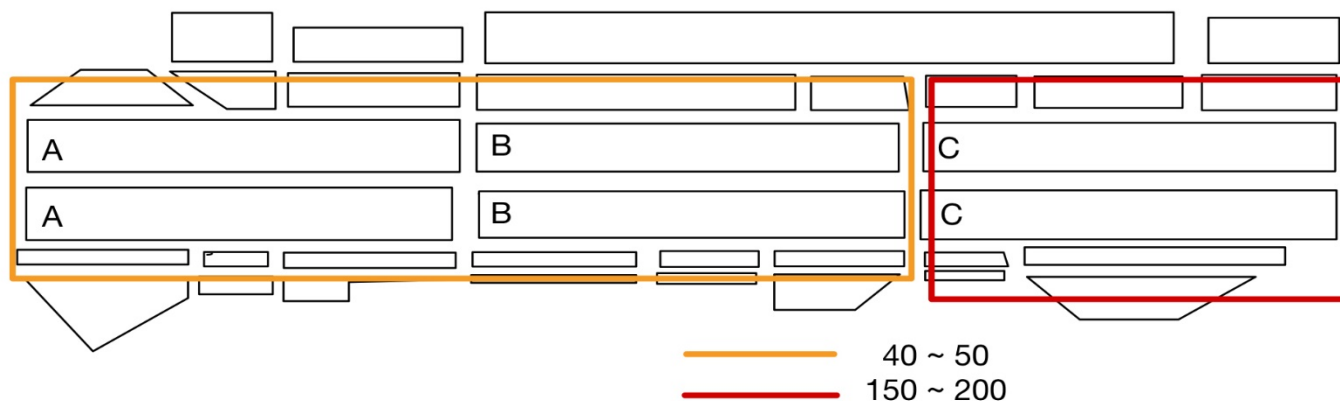
☐ Spray area

Siren Spray (September 10, 11)



☐ Analysis of swallow activity by location after spraying

Swallow Activity Analysis (September 11)



☐ Analysis of bird activity by time

Time (Temperature)	Analysis of bird activity by individual weekly and hourly (threat objects around the runway)																							
	Swallow					Kestrel					Magpie					Egret and Herons								
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F				
06:00 (11)			150			3	3		3		7	8	7	10	10									
07:00 (15)		400	300	700	200	1	4									3								
08:00 (17)	300	400	500	500	200	1	1																	
09:00 (20)	300	300	500	400	150			2																
10:00 (24)	300	200	200	400	50																			
11:00 (25)	10	5	100																					
12:00 (26)		20																						
13:00 (27)																								
14:00 (27)																								
15:00 (28)										2														
16:00 (27)																								
17:00 (26)	30				30			2														1		
18:00 (25)						4		1																
Gunshot	5	10	29	28	17	2	1	1									1							
Analysis	Activity time is 1 hour earlier than last week and dissolution is delayed by 30 minutes					Consistent throughout the day, but mostly active over the runway in the morning and evening					Continuation during the day					Check mainly in the morning and evening								
Activity analysis status																								
Identified object						Main activity location						Daily average		Gunshot Status										
New object			red-footed falcon			Acts like Kestrel						0 ~ ?		1(Mon)										
			mongolian plover			Mostly active near water, but occasionally seen near runways.						0 ~ ?		1(Tue)										
Existing object			Kestrel			Over the runway						4~7		4										
			Swallow			Grassland (Middle, East side), East side R/W, East side T/W						700		89										
			Egret & Herons			Heron Middle Grass						1 ~ 20		1										
			Magpie			"C", "F", "E" Area taxiways						15												
			Pheasant			North end of the Eest						4		1										
Main combat action						Equipment		Gas bomber, Blast bomb, Shotgun, Shotgun, Scarecrow, Glitter line																
						Chemicals		Spraying insecticides and liquid bird repellent / liquid (with free cooperation with Ezflex)																

Analysis of the effect of liquid bird repellent (Sairen)(9-3)

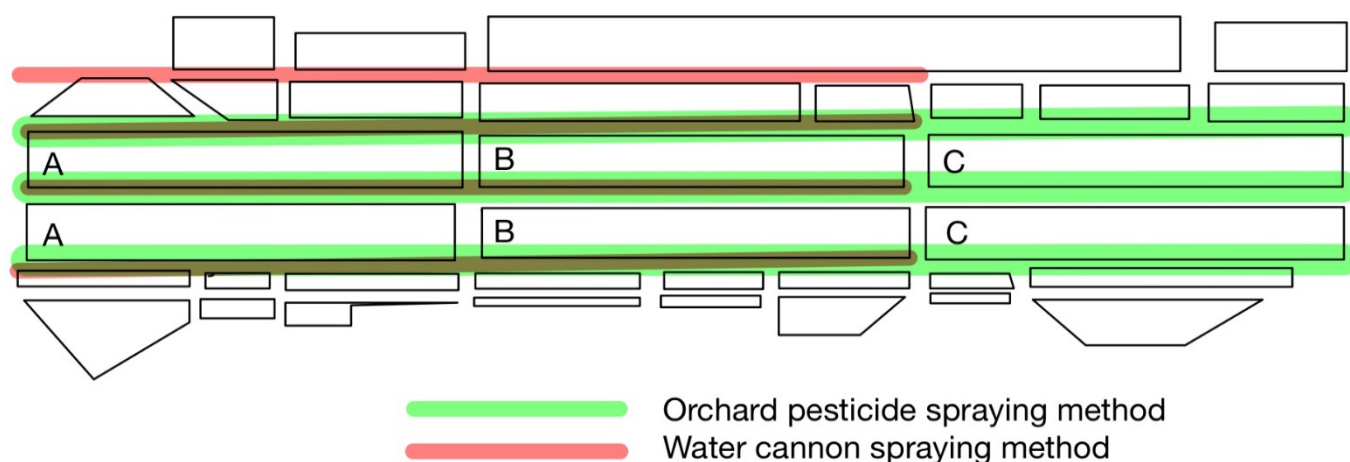
☐ Spraying Status and Birds Observed

September 3, 2015

Sairen spray			Dilution ratio	Total spraying capacity	Observation bird
Date	Time	Sunrise			
9. 14	08:00	06:09	25 : 1	500 liters	Swallow10, Kestrel4, Magpie0
9. 15	08:30	06:11	25 : 1	500 liters	Swallow50, Kestrel6, Magpie8
9. 16	08:05	06:11	25 : 1	500 liters	Swallow500, Kestrel8, Magpie8
9. 17	08:00	06:12	25 : 1	500 liters	Swallow40, Kestrel3, Magpie4
	12:00		25 : 1	400 liters	
9. 18	07:00	06:12	25 : 1	300 liters	Swallow30, Kestrel4, Magpie4
	08:00		25 : 1	500 liters	
9. 19	08:00	06:13	Swallow300("B" Parking lot 150, office 150) , Kestrel0, Magpie6		

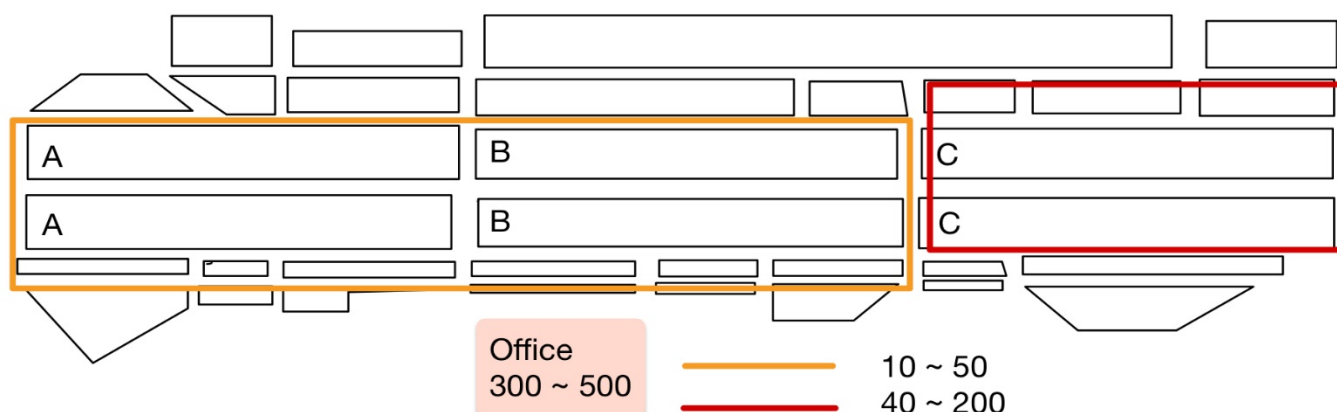
☐ Spray area

Siren Spray (September 3rd week)



☐ Analysis of swallow activity by location after spraying

Swallow Activity Analysis (September 3rd week)



☐ Analysis of bird activity by time

Time (temperature)	Analysis of bird activity by individual weekly and hourly (threat objects around the runway)																			
	Swallow					Kestrel					Magpie					Egret and Herons				
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
06:00 (11)										4										
07:00 (15)		50	100	40	30		2	6						2						
08:00 (17)		30	300						3				8		4					
09:00 (20)			100			4	1													
10:00 (24)			10																	
11:00 (25)							1													
12:00 (26)														2						
13:00 (27)																				
14:00 (27)								1												
15:00 (28)												9								
16:00 (27)							2	2												
17:00 (26)								6												
18:00 (25)							2													
Gunshot		10	8				5	1		2				1						
Analysis	Decrease in the number of individuals and move to the active area (outside the line and in the residence area)					Consistent throughout the day, but mostly active over the runway in the morning and evening					Continuation during the day					As of this week, Egret and Herons are considered to have left the area (Habitat x)				
Activity analysis status																				
Identified object						Main activity location						Daily average		Gunshot Status						
New object			red-footed falcon			East 5~6,000ft						0 ~ 3		1(Tue)						
Existing object			Owl									0 ~ ?		1(MON) 1(Wen)						
			Kestrel			Over the runway						4~7		8						
			Swallow			Grassland (Middle, East side), East side R/W, East side T/W						300		18						
			Crow			West side "D" → East side "B"						3		0						
			Magpie			"C", "F", "E" Area taxiways						6		1						
			Pheasant			North end of the West						0		0						
Main combat action						Equipment		Gas bomber, Blast bomb, Shotgun, Shotgun, Scarecrow, Glitter line												
						Chemicals		Spraying insecticides and liquid bird repellent / liquid (With free cooperation with Ezflex)												

Analysis of the effect of liquid bird repellent (Sairen)(9-4)

☐ Spraying Status and Birds Observed

September 4, 2015

Sairen spray			Dilution ratio	Total spraying capacity	Observation bird	
Date	Time	Sunrise				
9. 21		06:15	September 4th No bird repellent spray		Swallow0, Kestrel3, Magpie6	Military Office area 150 swallows
9. 22		06:16			Swallow0, Kestrel1 Magpie2	
9. 23		06:16			Swallow0, Kestrel0 Magpie0	
9. 24		06:16			Swallow0, Kestrel1 Magpie0	
9. 25		06:16			Swallow0, Kestrel1 Magpie2	
9. 26	No Swallow observation in the Military Office area					

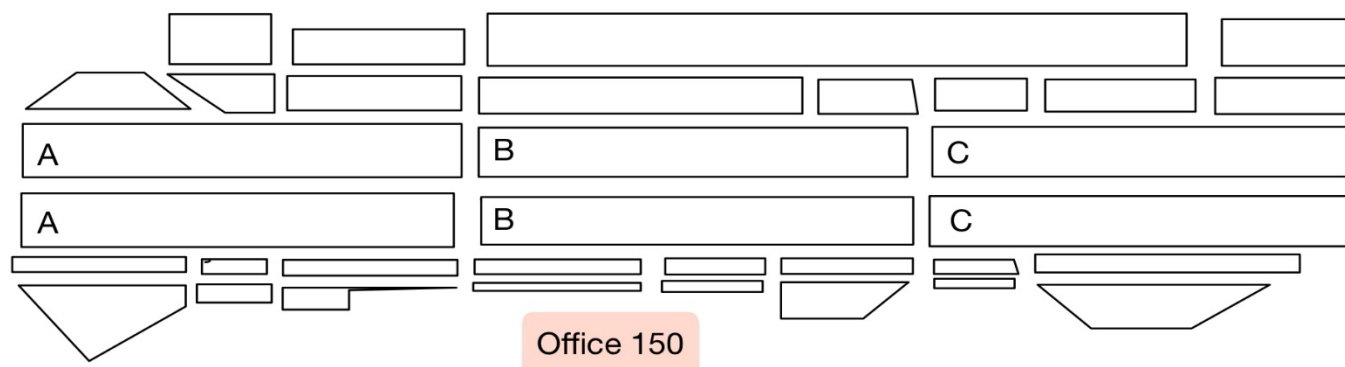
☐ Spray area

Siren was not sprayed for 4 weeks in September(3 weeks effect continuation analysis)



☐ Analysis of swallow activity by location after spraying

Swallow Activity Analysis (September 4th week)



☐ Analysis of bird activity by time

Time (Temperature)	Analysis of bird activity by individual weekly and hourly (threat objects around the runway)																			
	Swallow					Kestrel					Magpie					Crow				
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
06:00 (12)																				
07:00 (13)							1										10			
08:00 (16)																			1	
09:00 (18)																				
10:00 (21)									1						2					
11:00 (24)						1														
12:00 (25)						2									6					
13:00 (25)																				
14:00 (26)												2								
15:00 (26)										1										
16:00 (25)																				
17:00 (24)											5									
18:00 (23)																				
Gunshot																	1			
Analysis	Decrease in the number of individuals and move to the active area (outside the line and in the residence area)					Consistent throughout the day, but mostly active over the runway in the morning and evening					Continuation during the day (reduced number of objects)					Increased crow movement				
Activity analysis status																				
Identified object						Main activity location										Daily average		Gunshot Status		
New object			Calf			South west end										30		2		
Existing object			Kestrel			Above the Southern end of the Eastern runway (Mainly sitting on the runway in the morning, it was easy to shoot, but in the 3rd week, there was less observation on the runway in the morning and on the runway)										2 ~ 3		0		
			Swallow			No activity in the Rhine area (observed from the residence area)										military officer 150		0		
			Crow			West side "D" ↔ East side "B"										0 ~ 10		0		
			Magpie			"C", "F", "E" Area taxiways										0 ~ 5		0		
			Pheasant			North end of the West										0		0		
Main combat action						Equipment		Gas bomber, Blast bomb, Shotgun, Shotgun, Scarecrow, Glitter line												
						Chemicals		No application of medicines and bird repellents												

Analysis of the effect of liquid bird repellent (Sairen)(9-5)

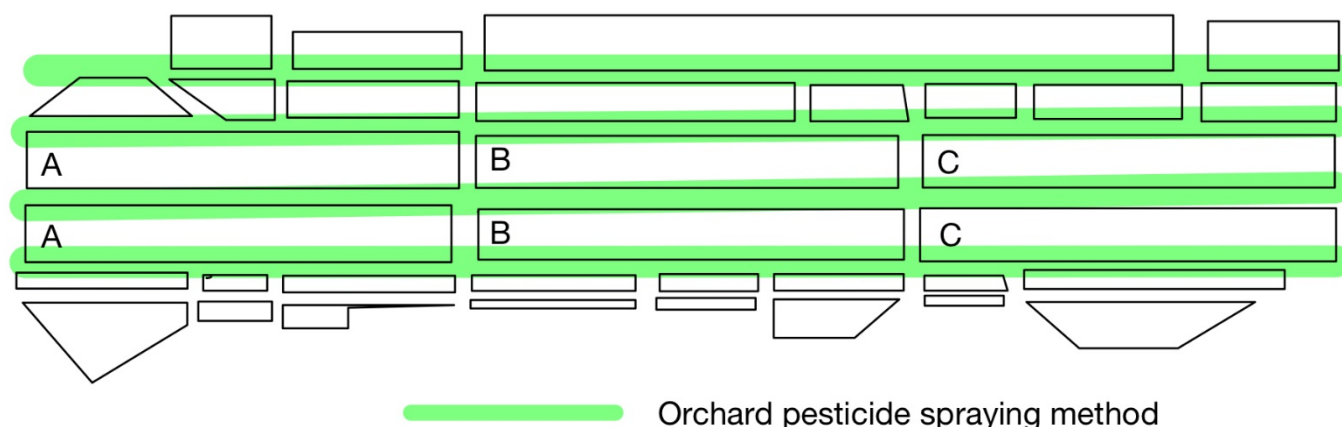
☐ Spraying Status and Birds Observed

September 5, 2015

Sairen spray			Dilution ratio	Total spraying capacity	Observation bird
Date	Time	Sunrise			
9. 28		06:21	September 4th No bird repellent spray		Swallow15, Kestrel2, Magpie6
9. 29		06:21			Swallow100, Kestrel0, Magpie3, Crow3
9. 30		06:22			Swallow5, Kestrel6, Magpie4, Crow2
10. 1		06:23			Rain during the day
10. 2	08:00	06:24	25 : 1	300 liters	Swallow15, Kestrel0, Magpie5, Calf30
In the 5th week of September, there is no Swallow activity in the residence area.					

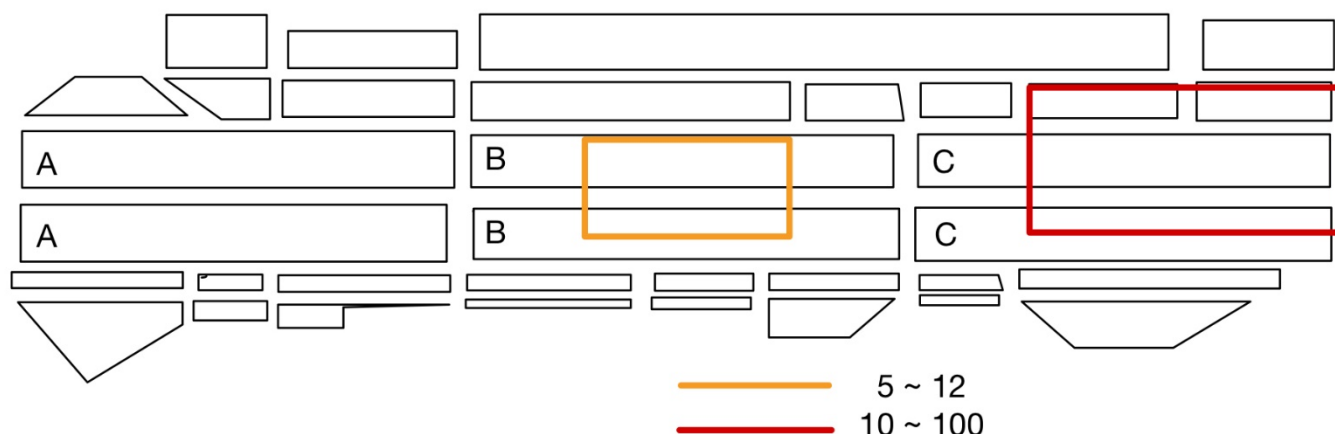
☐ Spray area

Siren Spray (October 2nd)



☐ Analysis of swallow activity by location after spraying

Swallow Activity Analysis (October 2nd)



☐ Analysis of bird activity by time

Time (Temperature)	Analysis of bird activity by individual weekly and hourly (threat objects around the runway)																			
	Swallow					Kestrel					Magpie					Crow				
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
06:00 (12)																				
07:00 (13)				A				1												
08:00 (16)				r	15												3	2		
09:00 (18)	15	100		m							3			5						6
10:00 (21)				y	15	2				6										
11:00 (24)			5	'																
12:00 (25)				s				1				2								
13:00 (25)																				
14:00 (26)				D																
15:00 (26)				a								2								
16:00 (25)				y																
17:00 (24)								4												
18:00 (23)																				
Gunshot					2			1												2
Analysis	Inactive last week and reappeared					Same number as last week					Same number as last week					Increased Crow Movement in the Morning				
Activity analysis status																				
Identified object					Main activity location					Daily average					Gunshot Status					
Existing object			Calf		West side grassland 5,000ft					30					0					
			Kestrel		This week, mainly observations from the Eastern region (Same number as last week)					2 ~ 3					1					
			Swallow		Swallow that did not exist last week is observed again					5 ~ 100					2					
			Crow		West side "D" ↔ East side "B"					2 ~ 6					2					
			Magpie		"C", "F", "E" Area taxiways					2 ~ 6					0					
			Pheasant							0					0					
Main combat action						Equipment		Gas bomber, Blast bomb, Shotgun, Shotgun, Scarecrow, Glitter line												
						Chemicals		Spraying insecticides and liquid bird repellent / liquid (with free cooperation with Ezflex)												

Liquid Bird Repellent for Airport



REPUBLIC OF KOREA AIR FORCE

with

EZFLEX CO.LTD



EZFlex Co., Ltd.

**INFORMATION FOR PRODUCT &
TEST REPORT**



EZFlex Co., Ltd.

VDO FOR PRODUCT USAGE