

# Improving biosecurity of small-scale and backyard farmers in the US

Juliette Di Francesco<sup>1</sup>, Amber Itle<sup>2</sup>, Craig McConnel<sup>3</sup>, Ragan Adams<sup>4</sup>, Roselle Busch<sup>1</sup>, Richard Van Vleck Pereira<sup>1</sup>, Terry W. Lehenbauer<sup>1</sup>, Beatriz Martínez-López<sup>5</sup>, Alda F.A. Pires<sup>1</sup> (apires@ucdavis.edu)

<sup>1</sup>Dept. Population Health and Reproduction, School of Veterinary Medicine, University of California Davis, Davis, CA, USA  
<sup>2</sup>Animal Services Division, Washington State Department of Agriculture, Olympia, WA, USA  
<sup>3</sup>Dept. Veterinary Clinical Sciences, College of Veterinary Medicine, Washington State University, Pullman, WA, USA  
<sup>4</sup>Dept. Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO, USA  
<sup>5</sup>Center for Animal Disease Modelling and Surveillance (CADMS), School of Veterinary Medicine, University of California Davis, Davis, CA, USA

## Introduction

- **Increased in small-scale and backyard operations in the US** during the past decade.
- **Extension materials on biosecurity** generally target a specific **commodity** or the **prevention** of a particular **foreign animal disease introduction** → lack of adapted resources for small-scale and backyard producers.
- **Biosecurity recommendations vary** among information sources for a commodity and among commodities<sup>1</sup> → risk of **mixed messaging, confusion, and lack of implementation.**

## Aim

- Development of a **website** and a **webinar series** on **biosecurity** to provide **training** for farmers, and **training tools** for educators to **disseminate knowledge** and **consistent recommendations** more effectively to **small-scale and backyard producers.**

## Method

### Development of the Farm Animal Risk Mitigation Prepare Prevent Evaluate (FARM PPE) website

### Webinar series and registration survey

- **Eight webinars** on **animal health, good husbandry practices, disease prevention**, and general and specific **biosecurity measures.**
- **Registration survey** with questions on **demographics, farm characteristics, and management and biosecurity practices** (Descriptive analyses).

### Webinar evaluation through post-webinar surveys

- **Satisfaction** and **suggestions for improvement.**
- **Retrospective pretest-posttest evaluation** to assess knowledge gained on each topic (Two-tailed paired Wilcoxon signed-rank test).
- **Certificate of completion** to encourage participation.

### Optional farm visits for development of customized biosecurity plans

## Results

### Registration Survey (n = 197)

Tab 1. Demographic information

		Frequency (%)
Country (n=173)	USA	168 (97.1)
	Other	5 (2.9)
State (n=167)	California	62 (37.1)
	Washington	44 (26.3)
	Colorado	37 (22.2)
	Other	24 (14.4)
Occupation* (n=178)	Farmer/rancher	99 (55.6)
	Educator	34 (19.1)
	Veterinarian	15 (8.4)
	Government	15 (8.4)
	Other	84 (47.2)

\*Participants could select more than one option; therefore, percentages for the variable may exceed 100%.

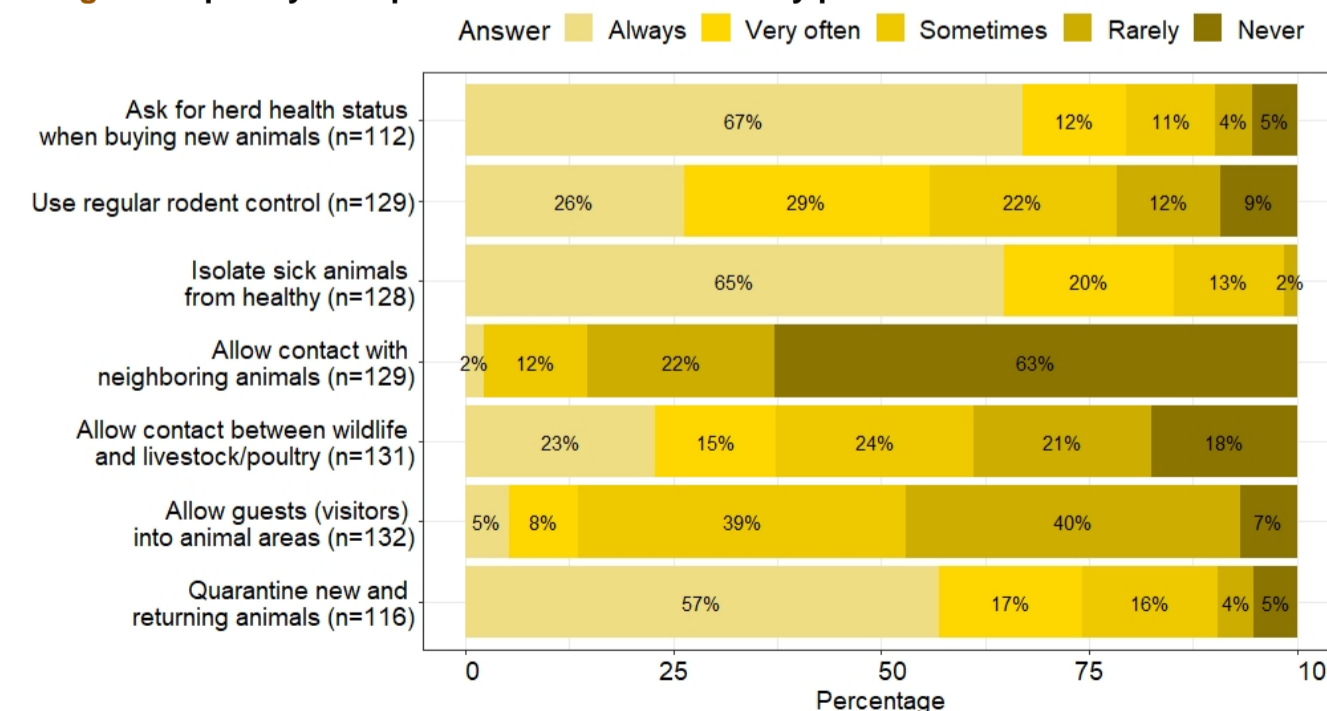
Tab 2. Farm characteristics

		Frequency (%)
Type of operation* (n=172)	Small-scale farmer	79 (48.8)
	4-H or FFA member	49 (28.5)
	Backyard producer	44 (26.2)
	Breeder	35 (20.3)
	Other	49 (28.5)
Location (n=176)	Rural	94 (53.4)
	Suburban/peri-urban	42 (23.9)
	Urban/town	27 (15.3)
	Other	13 (7.4)
Use of livestock/poultry and animal products* (n=168)	Commercial use	91 (54.2)
	Personal use	89 (55.6)
	Show	57 (33.9)
	Pet	51 (30.6)
	Other	36 (21.4)

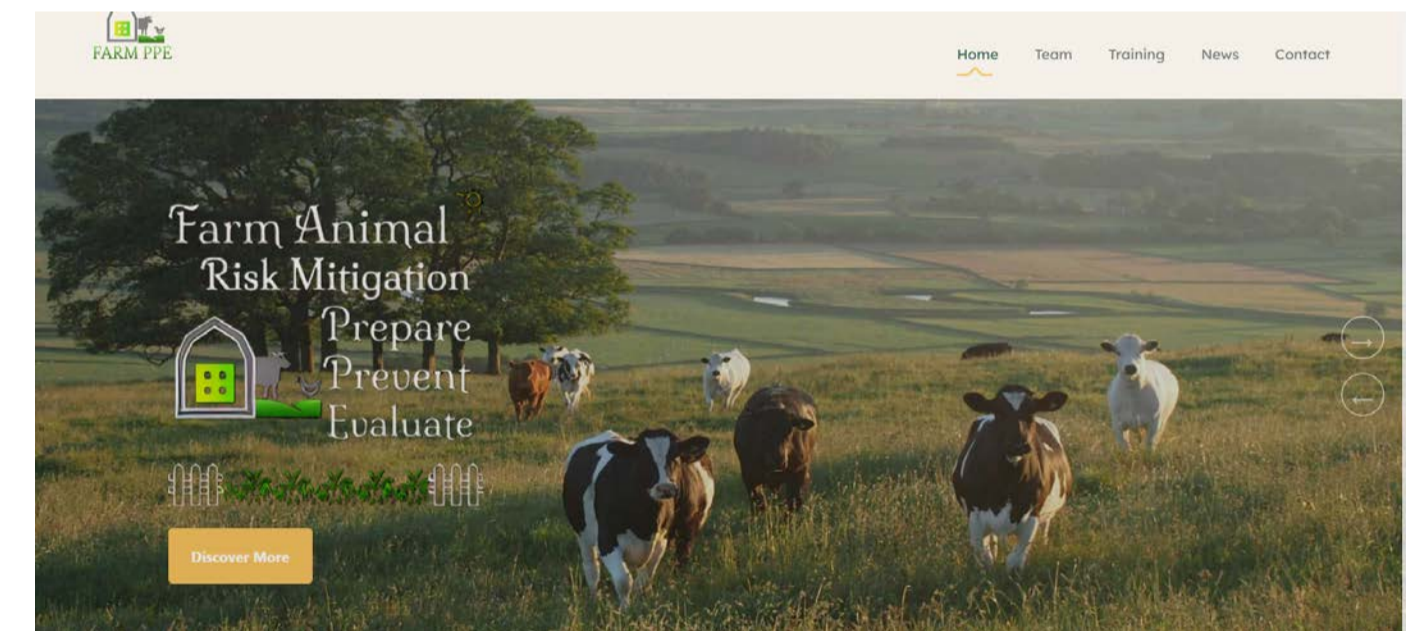
Tab 3. Management practices

		Frequency (%)
Animal purchase (n=172)	Yes	88 (51.2)
	No	84 (48.8)
Purchase source* (n=88)	Breeder	56 (63.6)
	Feed store	20 (22.7)
	Neighbor/friend	19 (21.6)
	Commercial farm	14 (15.9)
	Online	14 (15.9)
	Sale yard/livestock auction	7 (8.0)
	Other	10 (11.4)
Animal housing* (n=130)	Outdoor pens	85 (65.4)
	Permanent pasture	67 (51.5)
	Indoor pens	33 (25.4)
	Agriculture fields	24 (18.5)
	Contact with forest, wetlands or water surfaces	24 (18.5)
	Rotational/mobile housing	11 (8.5)
	Other	8 (6.2)

Fig 1. Frequency of implementation of biosecurity practices



- **Post-webinar survey**
- **High level of satisfaction** → Between 75 and 95% of participants indicated the webinar fulfilled their expectations and needs “well” or “very well”.
- **Participant knowledge increased significantly on each topic** → In particular, median knowledge score related to ‘Disease transmission routes’, ‘Role of wildlife in disease transmission to livestock/poultry’, ‘Mitigation steps to decrease attraction of wildlife’, and ‘How salmonellosis and Q Fever are transmitted to humans’ improved significantly after the webinar compared to before the webinar (P<0.001).



For more information, Please check this QR code or webpage.



<https://farmppe.netlify.app/>  
<https://linktr.ee/pireslab>

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