

Characterization and Description of Alternative Pig Farms in Minnesota

Miranda Medrano DVM, MPH

PhD Candidate, University of Minnesota

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Overview

- Introduction
- Methods
- Results
- Discussion
- Future Directions



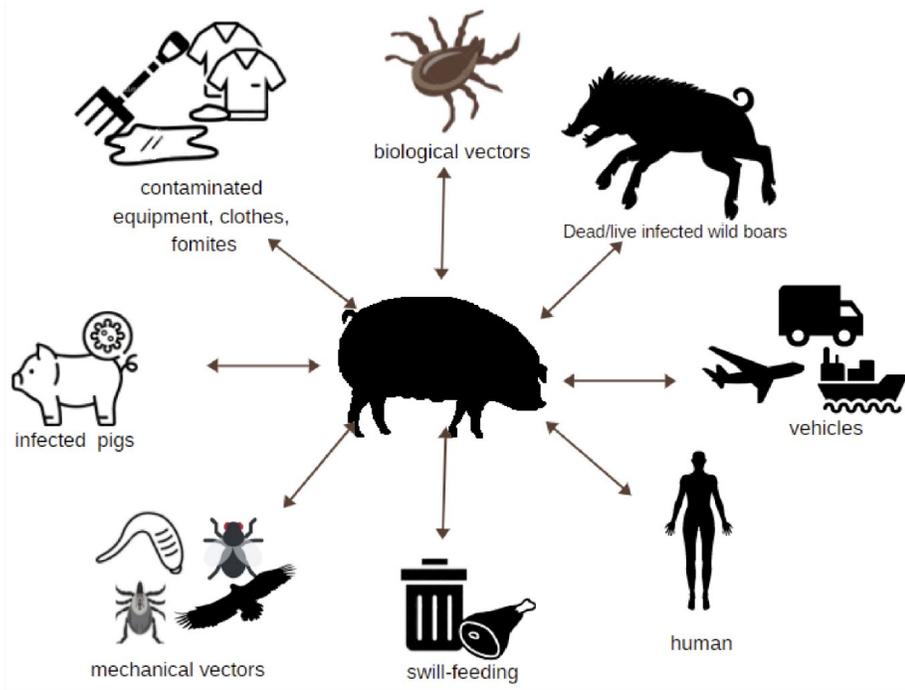
Introduction

African Swine Fever (ASF) Disease Prevention and Preparedness in US



Transmission Risks

- Populations: Domestic (Commercial, Backyard/Smallholder) and Wild/Feral Pigs
- Contaminated Meat Products
- Contaminated Feed
- Fomites: Equipment and People

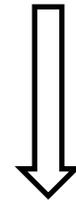


<https://www.mdpi.com/1999-4915/13/7/1212/htm>



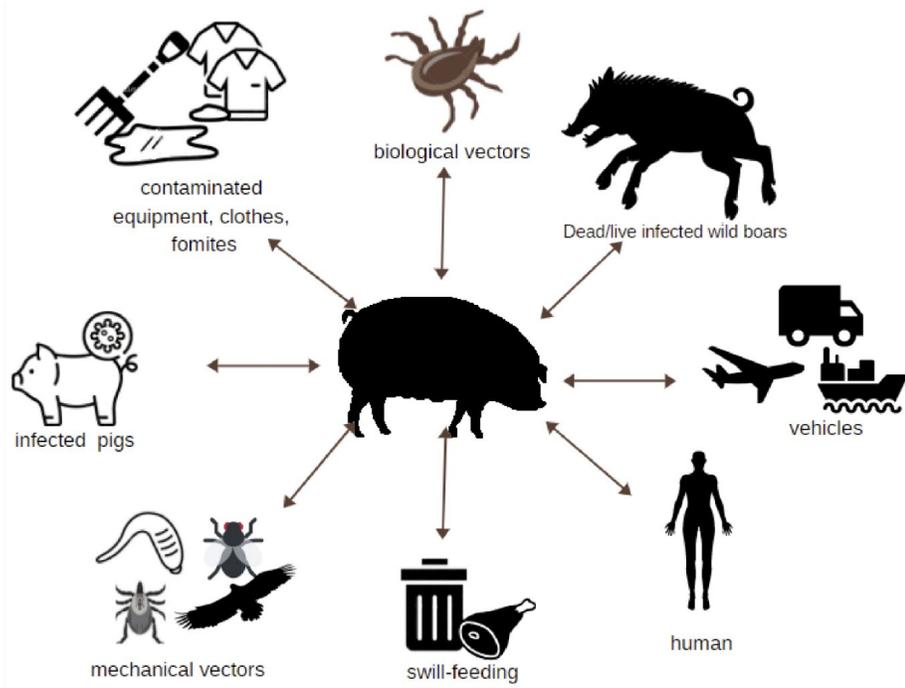
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Introduction

Backyard Farms and ASF Spread

PIG PROGRESS

Pigs ▾ Health/Nutrition ▾ Markets

[Vet Sci.](#) 2019 Dec; 6(4): 94.

Published online 2019 Nov 21. doi: [10.3390/vetsci6040094](https://doi.org/10.3390/vetsci6040094)

African Swine Fever in a Bulgarian Backyard Farm

[Laura Zani](#),^{1,*†} [Klaas Dietze](#),^{1,†} [Zlatina Dimova](#),² [Jan Hendrik Forth](#),¹ [Tsviatko Alexandrov](#)³

‘Backyard farms at the core of Russia’s ASF problem’

01-02-2017 | [Health](#) | [Health/Nutrition](#) | [News](#)



PMCID: PMC8402752

PMID: [34437485](https://pubmed.ncbi.nlm.nih.gov/34437485/)

CASE REPORT | Open Access |

The course of African swine fever in backyard holdings – A case report

Felix Ardelean, Anja Globig, Alin I. Gâlcă, Laura Zani

First published: 11 August 2021 | [https://doi.org/10.3390/vetsci6040094](#)

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YOUR READING LIST

- Backyard pig production remains ASF worry
Nov 5, 2020 **LIVESTOCK**
- Human case of rare flu linked to hogs found in Alberta

Backyard pig production remains ASF worry

By **Barb Glen**

Published: November 5, 2020 **Livestock**

¹ [Paschalis D. Fortomaris](#),³

confirmed officially the first positive case on the island of Lesbos, a village in Serres regional unit, Central Greece, and the sudden death of 6 domestic pigs.



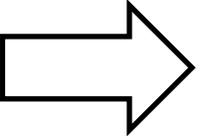
Methods

Qualtrics Survey

\$25 Gift Card

Identify Population

APFs in MN (and bordering states) – raise pigs with outdoor access



| Section | Questions |
|-----------------------------------|---|
| Farm and Animal Management | <ul style="list-style-type: none"> - Farm Type - Herd Size - Breeding Process - Pig Breed - Time from last consultation with Veterinarian - Use of Veterinary Health Certificates - Vaccination Use - Multi-species farm (yes/no) - Drinking water source - Drinking water treatment - Cleaning/washing water source - Manure/Bedding use - Dead animal disposal |
| Biosecurity | <ul style="list-style-type: none"> - Biosecurity measures - Housing type - Fencing type |
| Marketing | <ul style="list-style-type: none"> - Where and how pigs are sold and/or processed - Where and how pork is sold - Farm certification or accreditation |



Methods

Disease Testing

1. Porcine Reproductive and Respiratory Syndrome Virus (PRRSv)
 - PCR +/- Sequencing
 - ELISA
 - Serum or Oral Fluids
2. Porcine Epidemic Diarrhea Virus (PEDv)
 - PCR
 - Oral Fluids or Oral Swabs
3. Pseudorabies (Aujeszky's)
 - Serum Neutralization
 - Serum



Oral Fluids:

- *Handling
- *Chewing Behavior
- *Environment



Results

Identified >200 farms

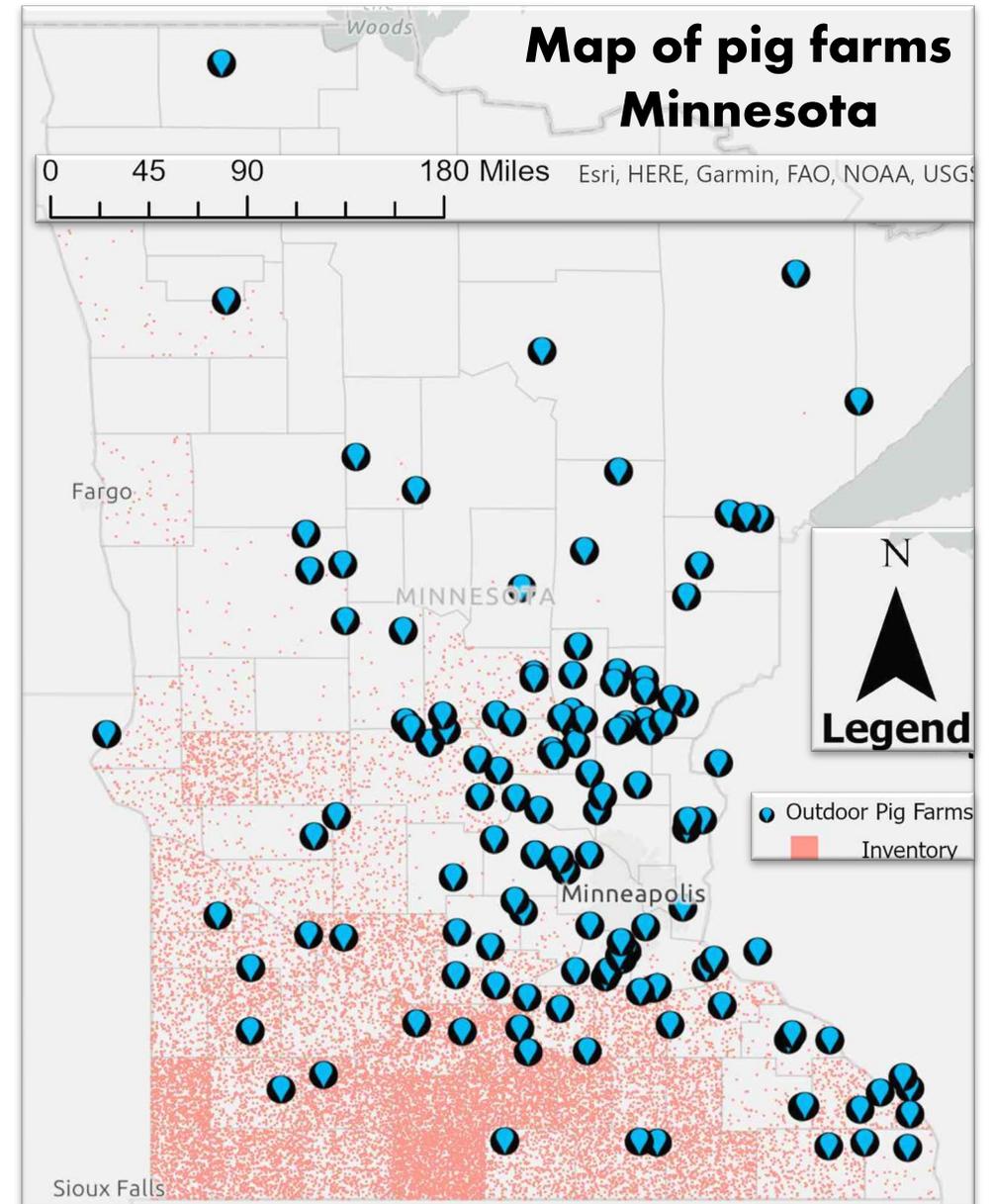
49 Survey Responses (1 incomplete)

(Results presented as of 6/23/23)

1 Illinois

3 Wisconsin

45 Minnesota



Results – Farm Type

| | |
|----|---|
| 30 | Breeding |
| 19 | Growing (Purchased nursery and/or growing pigs) |

Only 1 doesn't raise until market weight

Sows: (1-48)
median 5

Boars: (1-5)
median 2

Max: 490
Min: 4
Median: ~16



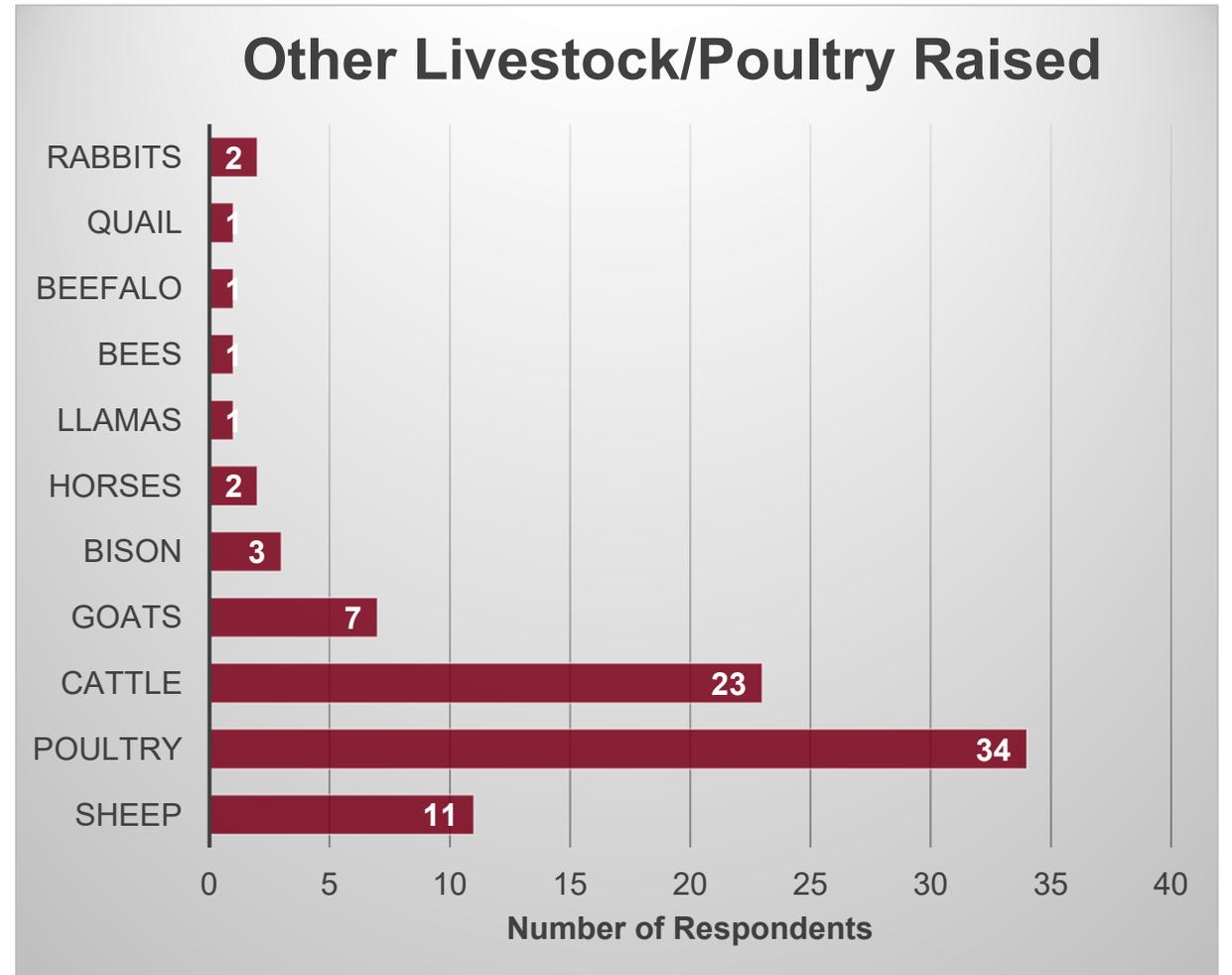
| | |
|----|------------------|
| 23 | Natural Breeding |
| 4 | Exclusive AI |



Results – Livestock Species

Raise other livestock/poultry

| | |
|-----------|-----------------------------|
| 44 | Yes |
| 2 | No |
| 3 | Prefer not to answer |



Results - Diseases

12 with previous infectious disease diagnoses

- Erysipelas
- Greasy Pig Disease
- PRRS
- Influenza
- Circovirus
- Intestinal bacterial disease
- Pneumonia
- Roundworm



Results – Veterinary Use Health Certificates Vaccine Use

Obtained Veterinary Health Certificate
(if moving in/out live animals not for slaughter)

| | |
|---|-----|
| 4 | NO |
| 2 | YES |

Vaccine Use

| | |
|----|-----|
| 35 | NO |
| 14 | YES |



Results – Premise ID Employees Carcass Disposal

Premise ID

| | |
|----|----------------------|
| 20 | No |
| 4 | Prefer not to answer |
| 7 | Unsure |
| 17 | Yes |

Employees

10 have an employee “not living on site”

Carcass Disposal

| | |
|----|------------------------------|
| 25 | Compost |
| 10 | Burial |
| 2 | Incinerate |
| 1 | City/County Garbage Disposal |
| 8 | Other (i.e. No deaths) |
| 2 | Prefer not to answer |



Results – Biosecurity

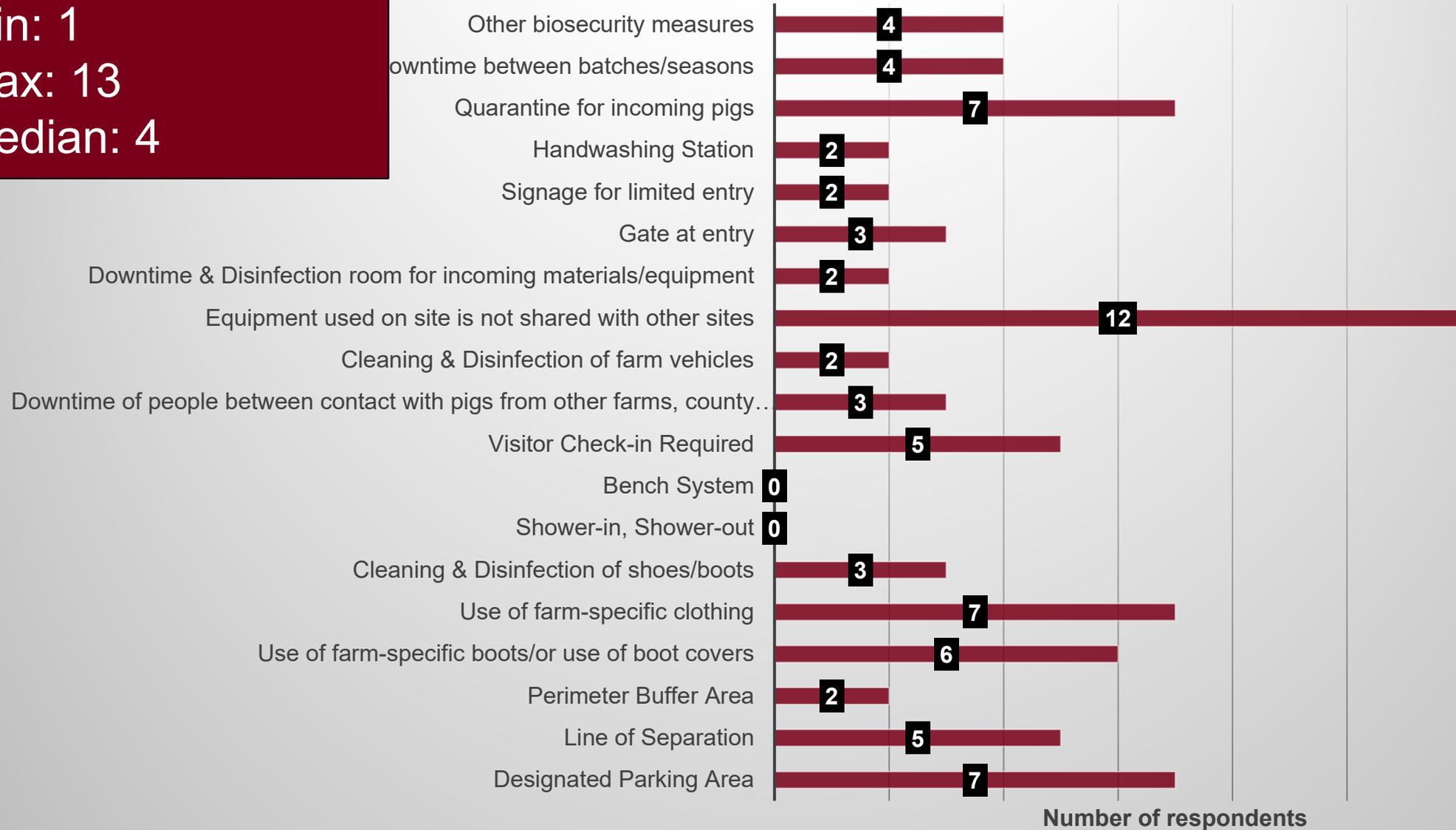
4 with 0 measures

Min: 1

Max: 13

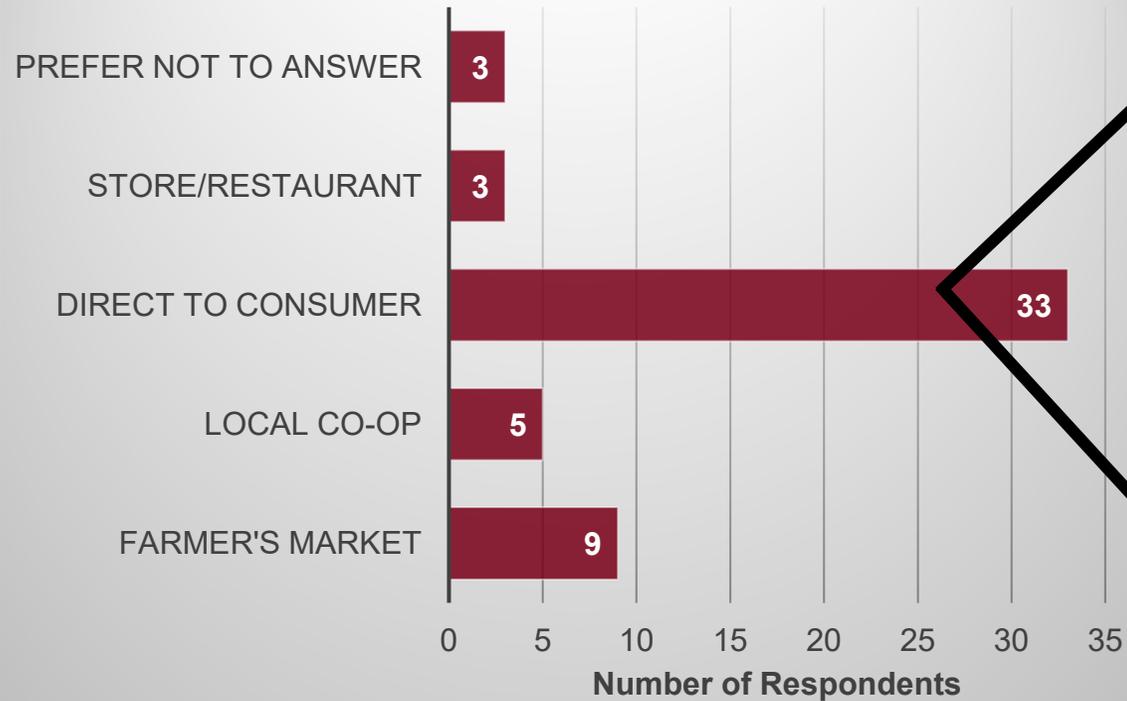
Median: 4

Biosecurity Measures

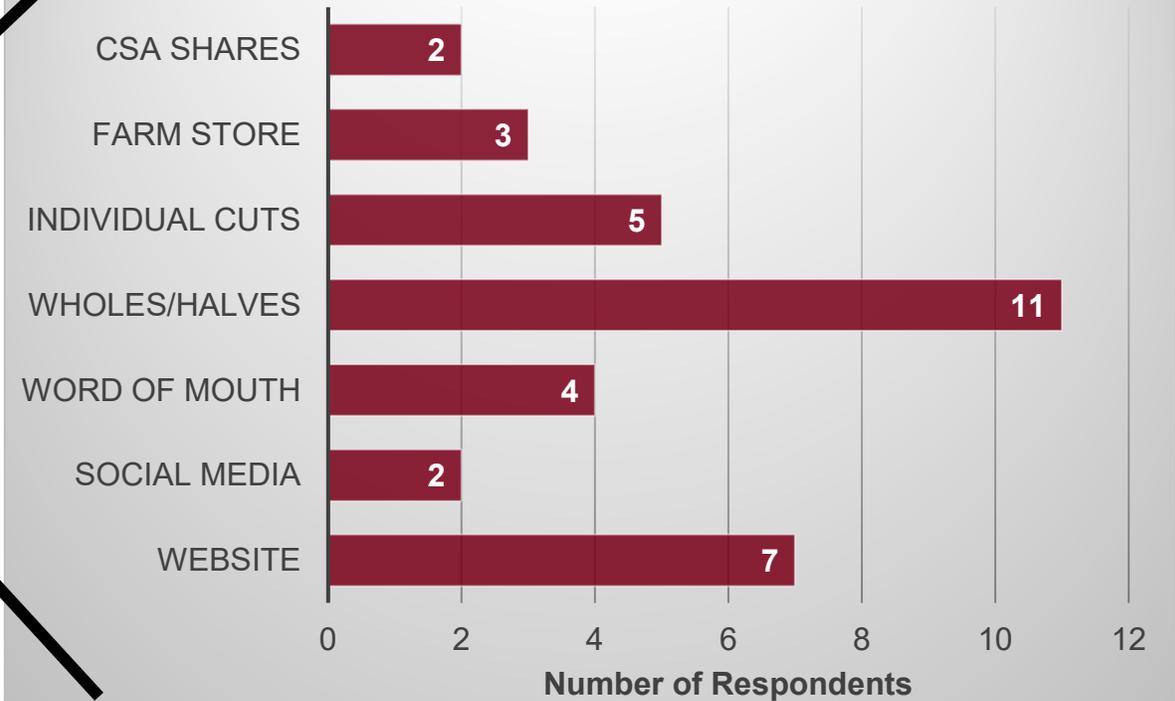


Results – Marketing

Pork Point of Sale



Marketing



Results – Testing

Tested 21 + 2 previous results

PRRSv ELISA 8 positives

PRRSv PCR 5 positives

All PCR positive were
also ELISA positive

PEDv PCR 0 positives

PRV SN 0 positives



Discussion

- Opportunities for Veterinarians!
 - Some without veterinary health certificates
 - Some who have never consulted with veterinarian
 - Access
 - Some without Premise IDs
- Disease Prevalence
 - PRRS exists, but not a big concern for APFs
 - No PEDv positives, environmental?
- Disease testing
 - Special sampling protocols



Future Directions

- Additional Survey samples
 - Sampled Farms
- Risk Factor Analysis
- Network Analysis
 - Animal movement and feed movement pathways





Funding



SWINE DISEASE
ERADICATION CENTER

UNIVERSITY OF MINNESOTA

Driven to Discover®

- Advisors and Thesis Committee
- University of Minnesota Swine Group Student/Post Docs

Contact: medra036@umn.edu

Thank you!

