



From Farm to Table — Food System Biosecurity for Animal Agriculture

Identifying Risks, Challenges and Solutions

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Economics of Biosecurity ***Small Ruminant Committee Meeting***

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Domestic Biosecurity Adoption Considerations

- Private decision
 - Invest where MY benefits = MY costs
 - May partially capture impact on neighbors, broader industry, etc.
- Just because a biosecurity measure “works” doesn’t mean it will be 100% implemented
 - Feasibility, awareness, and net econ. value are key
 - E.coli vaccines for fed cattle are prime example



Domestic Biosecurity Adoption Considerations

- Private economic incentives \neq public's
 - USDA doesn't benefit from hog price increase in “year of PEDv” like far-fin producer
 - Livestock producer only reaps portion of total industry's impact from losing export access
 - Consider economics behind individual ID discussions



Imports & Regionalization

- Limited peer-review work in area
- Ferrier's 2008 *Ag. & Resource Econ Review*
 - Trade barriers can drive large int'l price differences
 - Large price differences encourage smuggling
 - “Illicit trade is driven by high profits and not low morals.”



Regionalization

- Ferrier's 2008 *Ag. & Resource Econ Review*
 - Smuggling is more prevalent when:
 1. Demand &/or Supply is more inelastic,
 - Volumes don't change much so price impacts are larger
 2. When there are few trade partners,
 - Limits ability to replace banned imports, so price impacts grow
 3. When penalties or prob. of detection are low



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 3. When penalties or prob. of detection are low
 - **Regionalization may increase smuggling**



Regionalization

Smuggling Incentives Thought Exercise

Suppose:

1. Region 1 is a higher quality premium producer,
2. Region 2 is land-locked & Region 1 has port,
3. In 2015 both regions export to the U.S.



Regionalization

Smuggling Incentives Thought Exercise

Suppose a) Region 1 is a Higher Quality producer (\$0.10/lb premium),
b) It costs \$0.20/lb to Transport from land-locked Region 2 to port Region 1, and
c) in 2015 both regions can export to the U.S.

Region 1

2015 Price=\$1.00/lb

Region 2

2015 Price=\$0.70/lb

Price Spread

2015: \$0.30



Regionalization

Smuggling Incentives Thought Exercise

Suppose U.S. bans imports from Region 2

Region 1

2015 Price=\$1.00/lb

Post-Ban

Price=\$1.10/lb

Region 2

2015 Price=\$0.70/lb

Post-Ban

Price=\$0.50/lb

Price Spreads

2015: \$0.30

Post-Ban: \$0.60



Regionalization Considerations

- If regionalization may increase smuggling:
 - Should regions be larger from the offset to capture larger % of production?
 - How should likelihood of smuggling be incorporated into ex ante risk assessments and assumptions on regionalizing?



Final Points

- Tonsor has more questions than answers!
- We **MUST** be cognizant of slippery slope toward protectionism in any regionalization discussion
 - Keep “9 billion in 2050” front & center...



More information available at:



This presentation will be available in PDF format at:

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