

CA18105



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Risk-based meat inspection and
integrated meat safety assurance

Abattoir Interventions Case Study 4; Economic Analysis of interventions for foodborne parasites

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- Description of the case :

In this hypothetical scenario, it is 2025. The prevalence of porcine cysticercosis has risen to 1% and Spain has identified 200 cases of Neurocysticercosis which are thought to be of autochthonous. The Agencia Española de Seguridad Alimentaria y Nutrición has requested that you conduct an economic analysis to determine the benefits of adopting one of two different in-abattoir control strategies for *T. solium*.

- A) Mandating incisions in the masseters and increasing the incisions in the heart for all pigs other than those directed to visual only inspection based on epidemiological and holding data (EC 854/2004 Section IV, Chapter IV, B para 2)
- B) Subjecting all pigs other than those exempt in para 2 to cold treatment at -24°C for 24hrs (Frassen et al., 2019).

- Which economic evaluation framework(s) may be relevant to this task, which would you pick and why?
- What perspective(s) may be relevant to such an evaluation?
- What are the different costs and benefits you may consider in this evaluation, in what ways can these be measured and valued?
- What sources of data might you use?
- How would you present and interpret your analysis?
- Are there other alternative courses of action which could be considered?
- What other factors that you may not necessarily have captured in your analysis may also impact on the decision making process?

- Which economic evaluation framework(s) may be relevant to this task, which would you pick and why?

Evaluation framework:

cost-effectiveness analysis →

costs (US\$) – effectiveness (# of exposures avoided)

Why? We are analysing a non-monetary unit (health outcome)

- What perspective(s) may be relevant to such an evaluation?

A societal perspective since actors from different fields are involved

1. FBOs
2. Public health system
3. Veterinary services
4. Society [environmental impacts]
5. Suppliers/farmers

- What are the different costs and benefits you may consider in this evaluation, in what ways can these be measured and valued?

Option	Potential Cost	Potential Benefit
Incision	Condemned Material/ Food waste	Carcasses removed from food chain w/o intervention
	Slower line speed/ increased inspectors	DALY
	Cross contamination	
	Managing inventory	
	Carcasses missed	
	Value lost due to increased incision	
e.g.	\$100,000	50,000 infected meals avoided

- What are the different costs and benefits you may consider in this evaluation, in what ways can these be measured and valued?

Option	Potential Cost	Potential Benefit
Cold Treatment	Time delay for final product	Less Waste
	Additional equipment	DALY
	Lost value – meat quality	
	Environmental footprint	
e.g.	\$300,000	100,000 infected meals avoided

- How would you present and interpret your analysis?

Presentation: cost of the intervention/DALYs avoided

What is important? To be transparent on how analysis was conducted.

Interpretation:

- general population: explain that we aim avoiding sickness. Also explain the environmental impacts and how the methods can contribute/avoid food waste and environmental pollution
- FBOs: economic impact if population loses trust in the pig meat sector
- Healthcare system and government decision makers: risks of having contaminated meat on the market after both interventions

- What other factors that you may not necessarily have captured in your analysis may also impact on the decision making process?

Attitude to risk → are we going to chose the most cost-efficient method or do we go towards the one that ensures that 100% of the meat will be free of viable *Cysticercus*?

Thank you for the attention.
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