AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

The Irish Agriculture and Food Development Authority

Non-regulated diseases in Ireland

Cost overview

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Diseases of relevance

Production	Infectious diseases
Mastitis	BVD
Lameness	Johne's disease
Milk fever	IBR
Displaced abomasum	Parasitic disease
Ketosis	Salmonellosis
Calf mortality	Leptospirosis

BVD – national implications

Clinical Signs

- **Poor fertility (conception rates)**
- **Poor calf health**
- **Increased number of abortions, stillbirths and/or deformities**
- **Birth of weak calves**
- **Occurrence of severe acute BVD**
- **Occurrence of fatal mucosal disease**

Cost to Irish dairy farmers

€63/cow/year ***(Stott et al., 2012)***

Individual outbreaks can cost up to €30,000 per outbreak in Spring-calving herds
Increased likelihood due to PI retention and increase in naïve herds

BVD – international implications

Potential for export restrictions to BVD-free countries

BVD national eradication scheme will significantly reduce any international impact

IBR – national implications

Clinical Signs

Initial outbreak

- **Sudden milk drop and high fever**
- **Nasal discharge – red, crusty nose**
- **Sore and cloudy eyes**
- **Severe pneumonia - 2º bacterial infections**
- **Abortions in the second half of pregnancy**
- **Increase in calf pneumonia**

Repeat outbreak (less severe)

Cost to Irish dairy farmers

Potential for 250Kgmilk loss/cow/year

(Sayers et al., unpublished preliminary data)

As yet unquantified genetic losses

IBR – international implications

Potential for export restrictions to IBR-free countries

IBR national eradication scheme based on vaccination required to reduce international impact

Johnes – national implications

Clinical signs

- Chronic, eventually fatal, weight loss
- Progressive wasting
- Persistent and severe diarrhoea
- Clinical signs rarely seen in animals less than two years of age
- In general, clinical signs relatively rare on majority of Irish dairy farms

Cost to Irish dairy farmers

Based on existing Irish studies costs at farm level appear minimal

(Hoogendam et al., 2009)

(Kennedy et al., unpublished data – 2015)

Johnes – international implications

- **Crohn's disease- zoonosis ???**
- **Link 1st postulated in 1913**
- **Over 100 years later – no confirmation**

"Taking all the evidence into consideration, the review group is of the opinion that currently a causative association between *Map* and Crohn's disease is unproven"

"There is insufficient evidence to prove or disprove that *Map* is a human pathogen or that it is the cause of Crohn's disease"

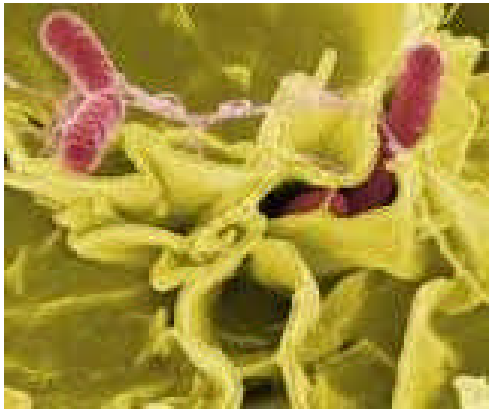
However, Johnes = next food crisis e.g. BSE?
Voluntary scheme timely from an international point of view

Salmonella – national implications

Clinical signs

Adult

- **Abortion**
- **Septicaemia**
- **Fever, no appetite**
- **Diarrhoea**
- **Dehydration**
- **Weight loss**



- **Calf**
- **Septicaemia**
- **Fever, no appetite**
- **Dehydration**
- **Scour**
- **Dry gangrene (distal extremities)**
- **Bone lesions**

Cost to Irish dairy farmers

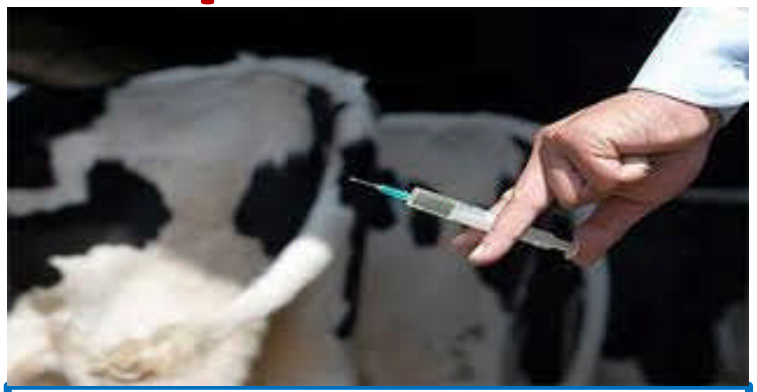
Total annual profits in unvaccinated herds were reduced by €77.31, €94.71, and €112.11 per cow at a milk price of 24.5, 29.5, and 34.5 cents per litre as a result of exposure to Salmonella.

Over €11,000/year in 100 cow Spring-calving dairy herd

(O'Doherty et al., 2015, in press)

Salmonella – international implications

- **Zoonotic organism**
- **Public health implications**
- **Prevent Irish-related food scares**



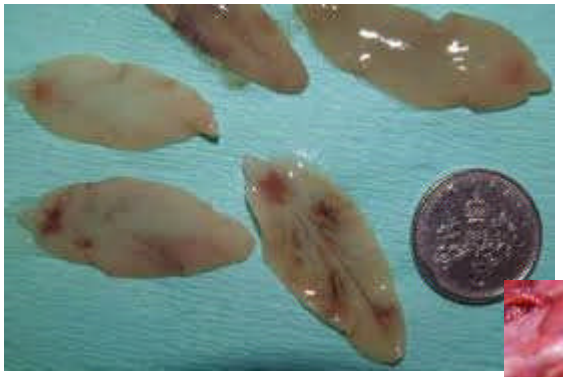
COST/BENEFIT

Herds vaccinated for Salmonella generate €67.09, €84.48, and €101.89 per cow more profit at a milk price of 24.5, 29.5, and 34.5 cents per litre compared to herds positive for Salmonella exposure

(*O'Doherty et al., 2015, in press*)

National vaccination programme requires consideration

Parasites – implications



On-farm losses yet to be fully quantified
Data available from Teagasc
Further analysis required

International implications relate to use and/or overuse of anthelmintic products - residues

DAFM-funded projects on-going in Moorepark to investigate optimum anthelmintic strategies for Irish farmers

Other – national implications

Exposure to *Leptospira hardjo* resulted in a reduction in annual farm profits of €13.83, €13.78, and €13.72 per cow at a milk price of 24.5, 29.5, and 34.5 cents per litre

Herds vaccinated for *L. hardjo* generate €9.74, €9.69, and €9.63 per cow more profit compared to unvaccinated exposed herds

Exposure to *Neospora caninum* resulted in a reduction in annual farm profits of €11.55, €12, and €12.44 per cow at a milk price of 24.5, 29.5, and 34.5 cents per litre

(O'Doherty et al., 2015, in press)

Required Action: Establish disease status

- BVD
- IBR
- Salmonellosis
- Leptospirosis
- Johnes Disease
- *Salmonella*
- *Neospora caninum*
- Parasites

Bulk milk / individual milk / blood / faeces

AHI programmes & ICBF data recording

ALLOWS STRATEGIC PLANNING FOR INDIVIDUAL FARMS
TEST & CULL e.g. BVD, IBR
VACCINATE e.g. Salmonella, Leptospirosis, IBR
MODIFY MANAGEMENT e.g. Johnes, Parasites

Conclusions: Cost/Benefit

- Positive cost/benefit exists for control of diseases outlined with exception of Johnes
- Potential implication of Johnes disease, however, demands a control programme
- Johnes calf management leads to additional calf health benefits which require quantification
- BVD PIs MUST be cleared to avoid costly farm outbreaks
- Majority of farmers will benefit directly from national vaccination programmes for Salmonellosis, Leptospirosis, and IBR

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