Status and proposed actions in Iceland on the use of antimicrobials and control of AMR

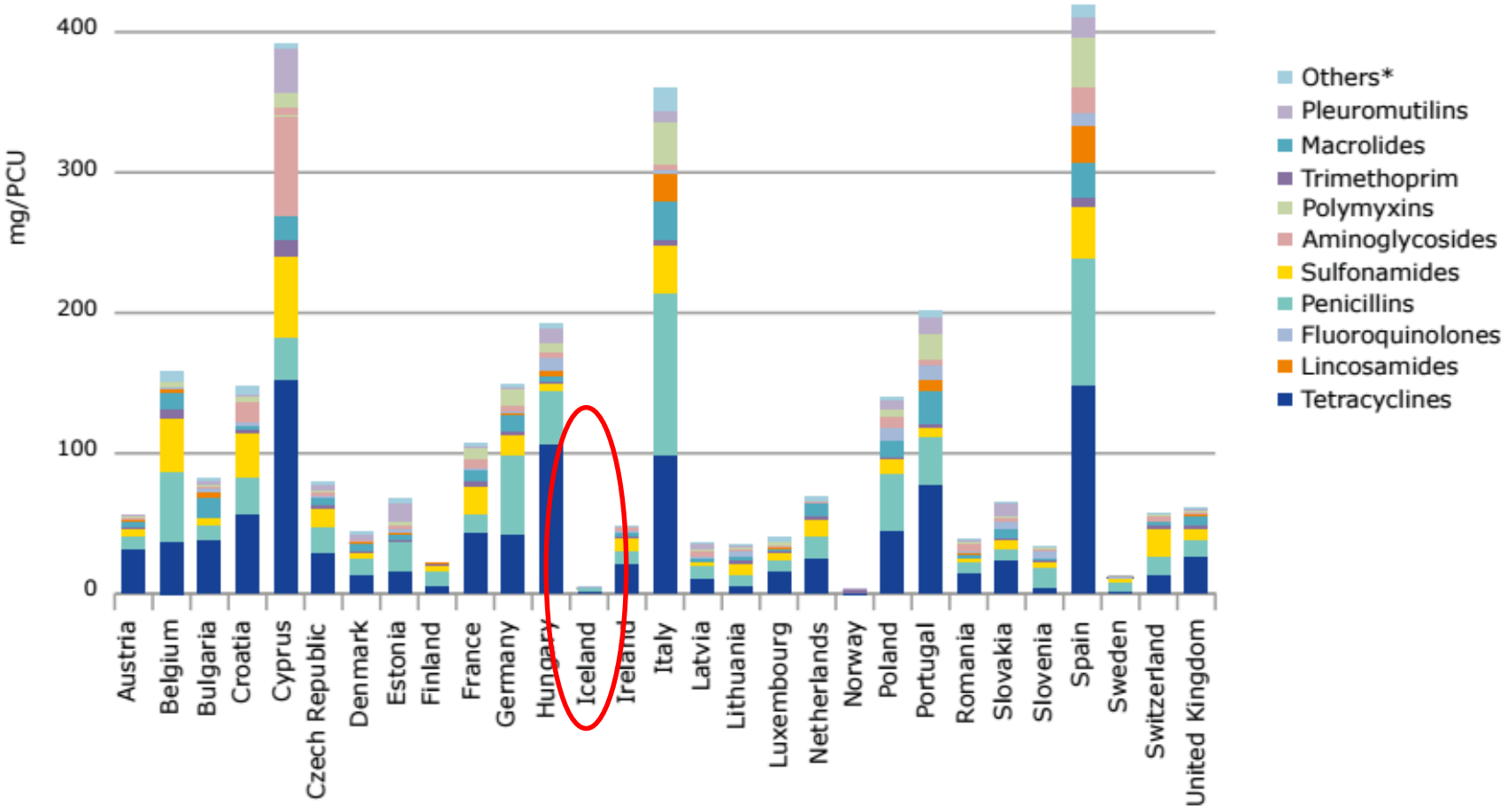
Animal Health

Sigurborg Daðadóttir, Chief Veterinary Officer

15th of May 2017

Combating Antimicrobial Resistance

Use of antimicrobials in animals



* Amphenicols, cephalosporins, other quinolones and other antibacterials (classified as such in the ATCvet system).

EMA's ESVAC 2014

mast
Icelandic Food and Veterinary Authority

Control of antimicrobial use in animals

- Legislation
  - Vets have to start treatment with antimicrobials
  - Exception due to special conditions – lambing season in Sheep production
- *Heilsa* – central database
  - Diagnosis, medical use and treatment of animals
  - Limited –only cattle and horses (sheep)
- Control - reporting in *Heilsa*
  - Special effort in 2016 – General deficiencies in reporting
- Control - the use at farm level
  - Records, withdrawal period, correct use
- Control - at slaughterhouses
  - ID checks in database – Warnings if withdrawal period is still ongoing

MAST
Icelandic Food and Veterinary Authority

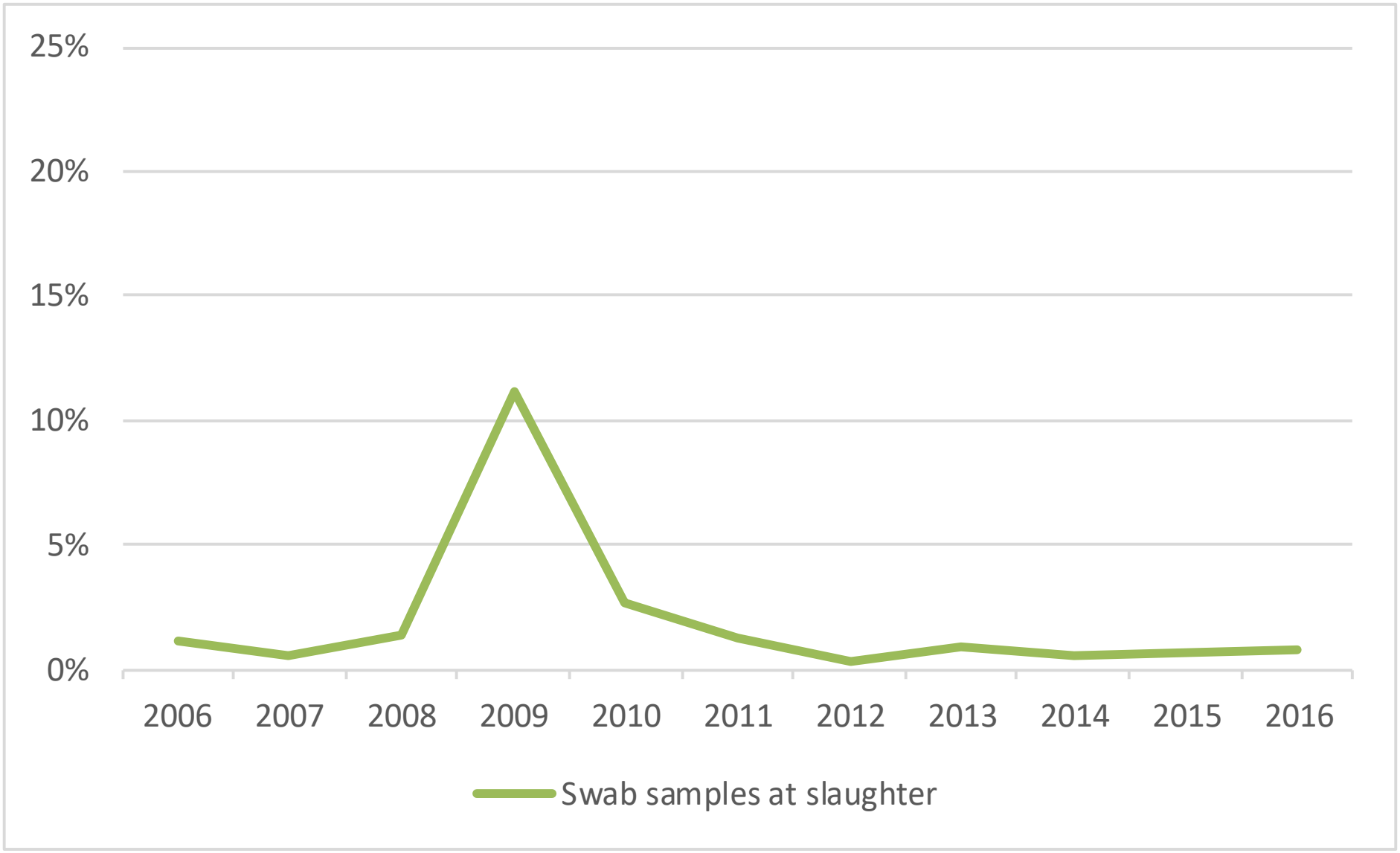
Control of zoonotic agents

Feed, animals, food production and food at retail

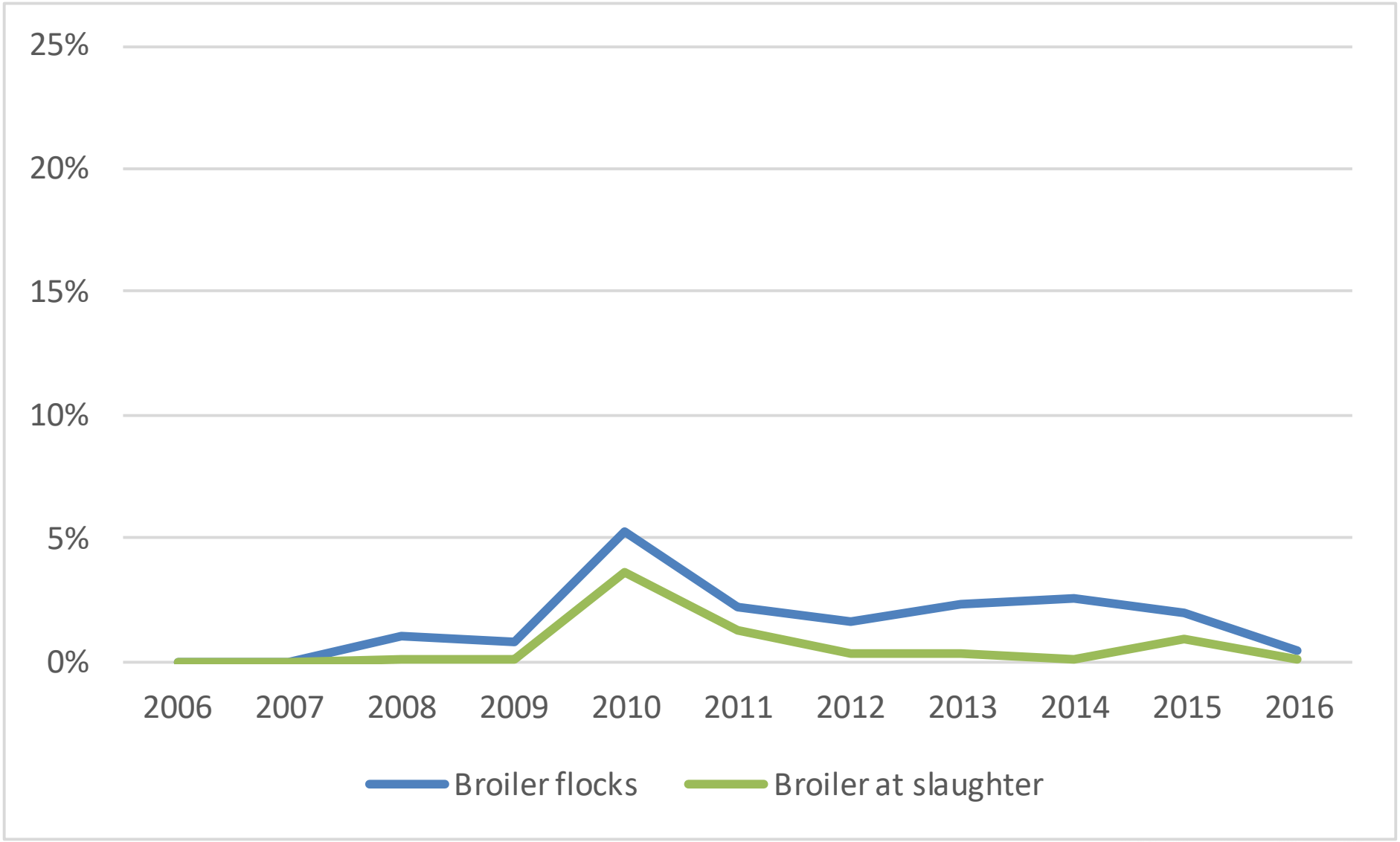
- National control programs - published
  - *Salmonella:* Poultry, pigs and feed mills
  - *Campylobacter:* Poultry
- No surveillance programs for other zoonotic agents or animal species
  - Monitoring: *Salmonella* Dublin in milk, never found
- No surveillance program at retail or in products of plant origin
  - Ad hoc projects - *Listeria monocytogenes* in different “ready to eat” food

MAST
Icelandic Food and Veterinary Authority

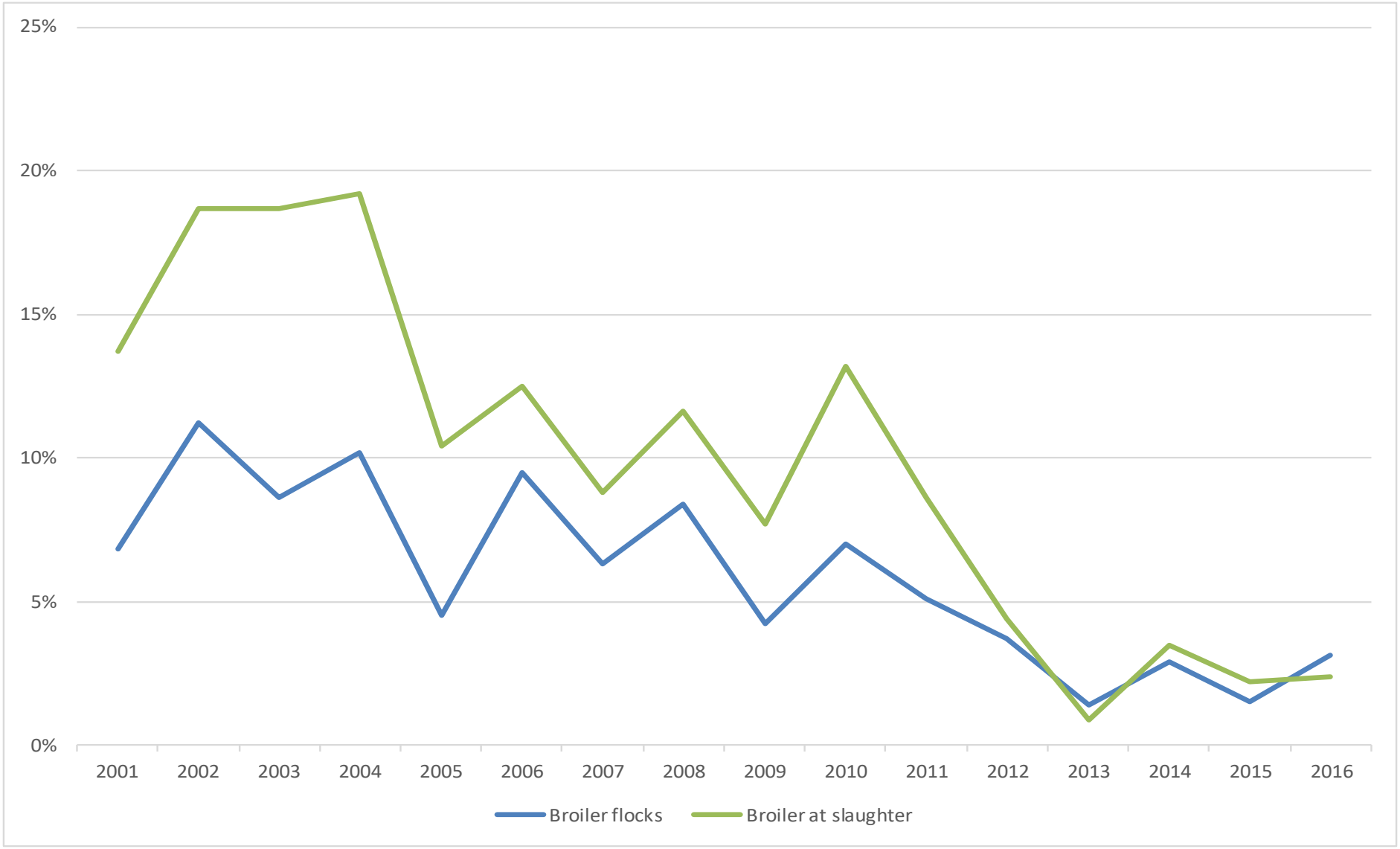
Salmonella in pigs



Salmonella in poultry



Campylobacter in poultry



AMR monitoring

Feed, animals, food production and food at retail

- EU standardizes methods – since 2013
  - Keldur - The Institute for Experimental Pathology at the University of Iceland
- Decision EC/652/2013
  - Still not implemented in Iceland
  - Sample plan according to the Decision since last year, except sampling of fresh meat at retail
- AMR monitoring data
  - Few isolates due to low prevalence of *Salmonella* and *Campylobacter*
  - Difficult to draw conclusions

MAST Icelandic Food and Veterinary Authority

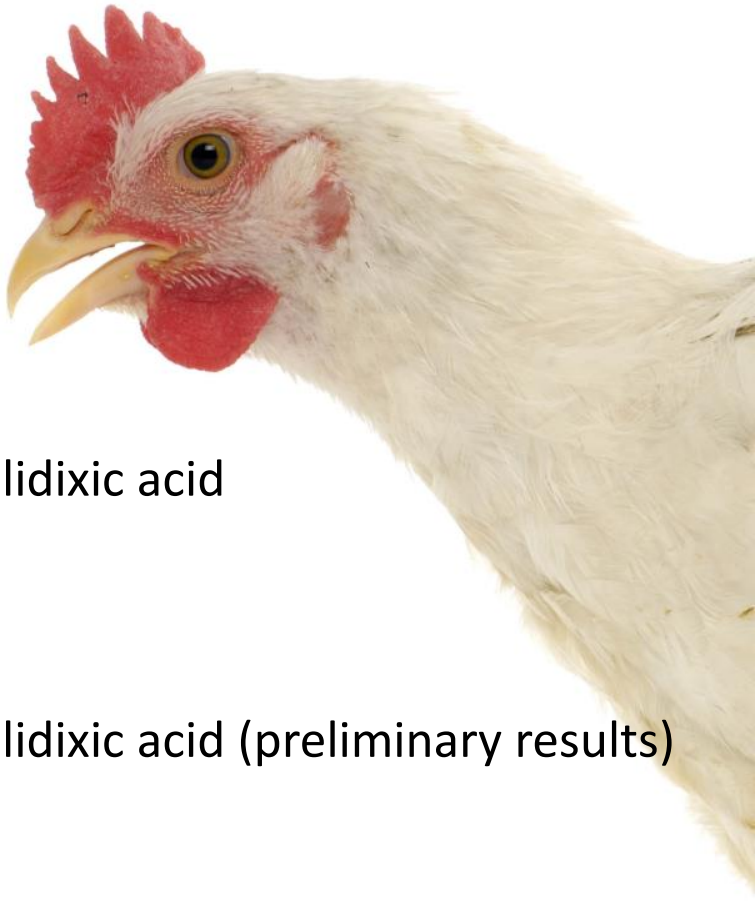
AMR monitoring - *Salmonella*

- 2014
  - Total of 39 isolates from poultry, pigs and feed
  - **15**/39 isolates resistant – Sulfonamides
- 2015
  - Total of 43 isolates from poultry, pigs and feed
  - **3**/43 isolates resistant
    - Poultry – Sulfonamides
    - Pigs – Ampicillin, Sulfonamides, Tetracycline and Trimethoprim
    - Feed – Ampicillin
- 2016
  - Total of 4 isolates only from poultry
  - **0**/4 isolates resistant

MAST Icelandic Food and Veterinary Authority

AMR monitoring - *Campylobacter*

- 2013
  - Total of 16 isolates from poultry
  - **1**/16 isolate resistant – Tetracycline
- 2014
  - Total of 29 isolates from poultry
  - **1**/29 isolates resistant – Ciprofloxacin, Nalidixic acid
- 2016
  - Total of 20 isolated from poultry
  - **4**/20 isolates resistant – Ciprofloxacin, Nalidixic acid (preliminary results)



Icelandic Food and Veterinary Authority

AMR monitoring – ESBL/AmpC producing *E. coli*

- 2014
  - **7**/101 samples from poultry – all AmpC *bla*$_{\text{CMY-2}}$
- 2016
  - **13**/310 samples from poultry and pigs
    - 1 presumptive ESBL genotype
    - 12 presumptive AmpC genotype

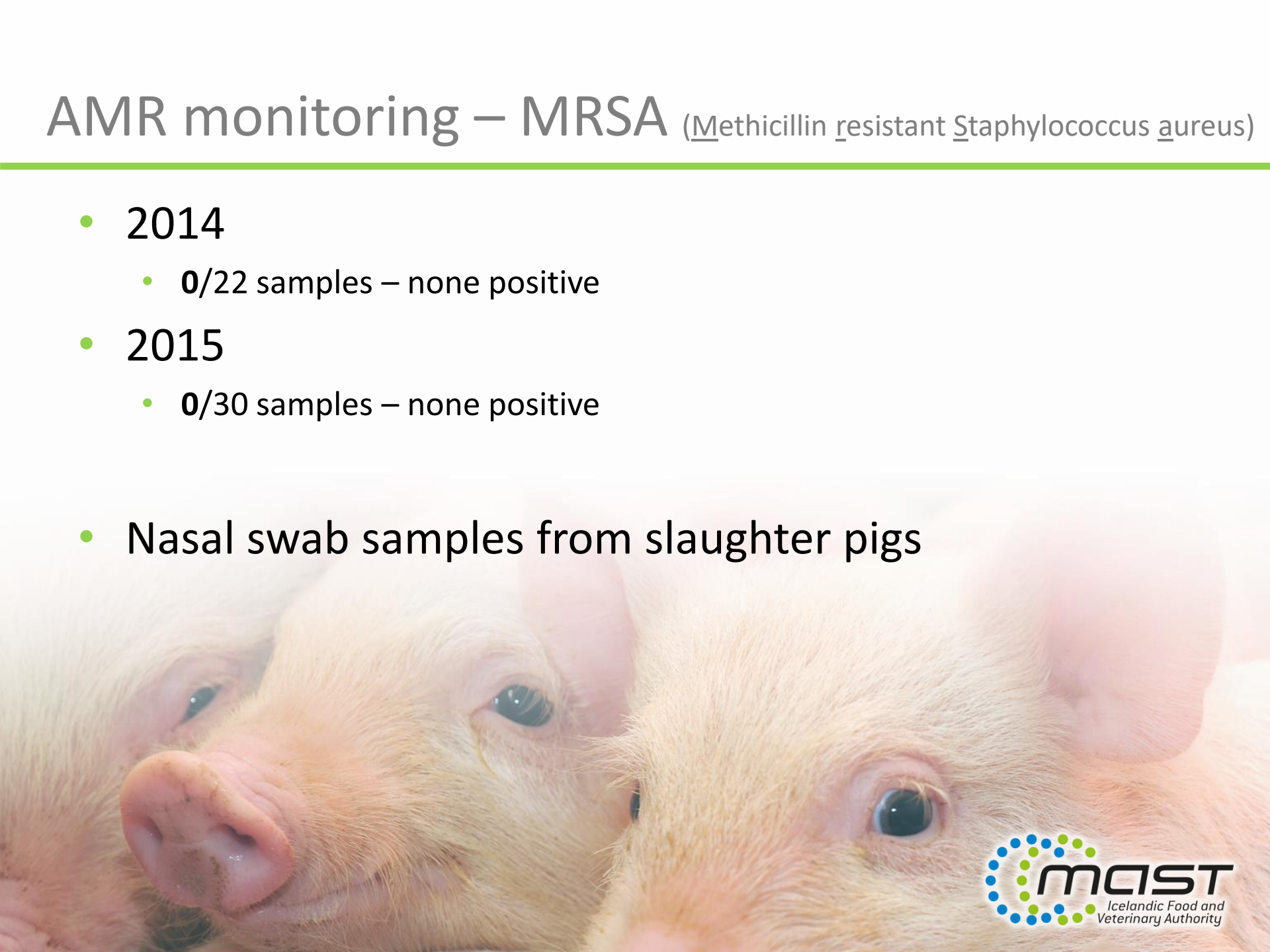
- No monitoring of carbapenemase producing *E. coli*

Icelandic Food and Veterinary Authority

AMR monitoring – MRSA (Methicillin resistant Staphylococcus aureus)

- 2014
  - **0**/22 samples – none positive
- 2015
  - **0**/30 samples – none positive

- Nasal swab samples from slaughter pigs



MAST
Icelandic Food and Veterinary Authority

No AMR monitoring

- Imported fertilized eggs
  - Vertical transmission
- Food of plant origin
  - Vector for zoonotic agents
  - Vector for AMR bacteria
- Fresh food at retail
  - Started in 2017
- Other animal species
  - Horses, sheep and cattle
  - Companion animals (dogs/cats)

MAST
Icelandic Food and Veterinary Authority

Conclusions

- Import/sales of antimicrobials for animals is very small
- Strickt legal requirements of use of antimicrobials in food producing animals
- Lack of data – use of antimicrobials pr. species
  - Missing some data in *Heilsa* (cattle, horses, sheep)
  - No central data – pigs, poultry, pets
- *Campylobacter* and *Salmonella* prevalence is low
  - Few samples – Difficult to draw conclusions
- Lack of surveillance for other zoonotic agents
  - Situation in other species (sheep, cattle, horses) unknown
- AMR prevalence is low
  - Few samples - Difficult to draw conclusions
- Updating of regulations is needed

MAST Icelandic Food and Veterinary Authority

Final report

recommendations related to feed, animals, food production and food at retail (6 of 10)

1. National strategy/policy on AMR - One Health approach
   - Prevention - surveillance - response
4. A policy on the prudent use of antimicrobials in animals
   - Further development of the database *Heilsa – for all species*
   - Publish detailed guidelines – cooperation with the Icelandic Veterinary Association
   - Ban or restrictions on certain types of antimicrobials

Icelandic Food and Veterinary Authority

Final report - cont.

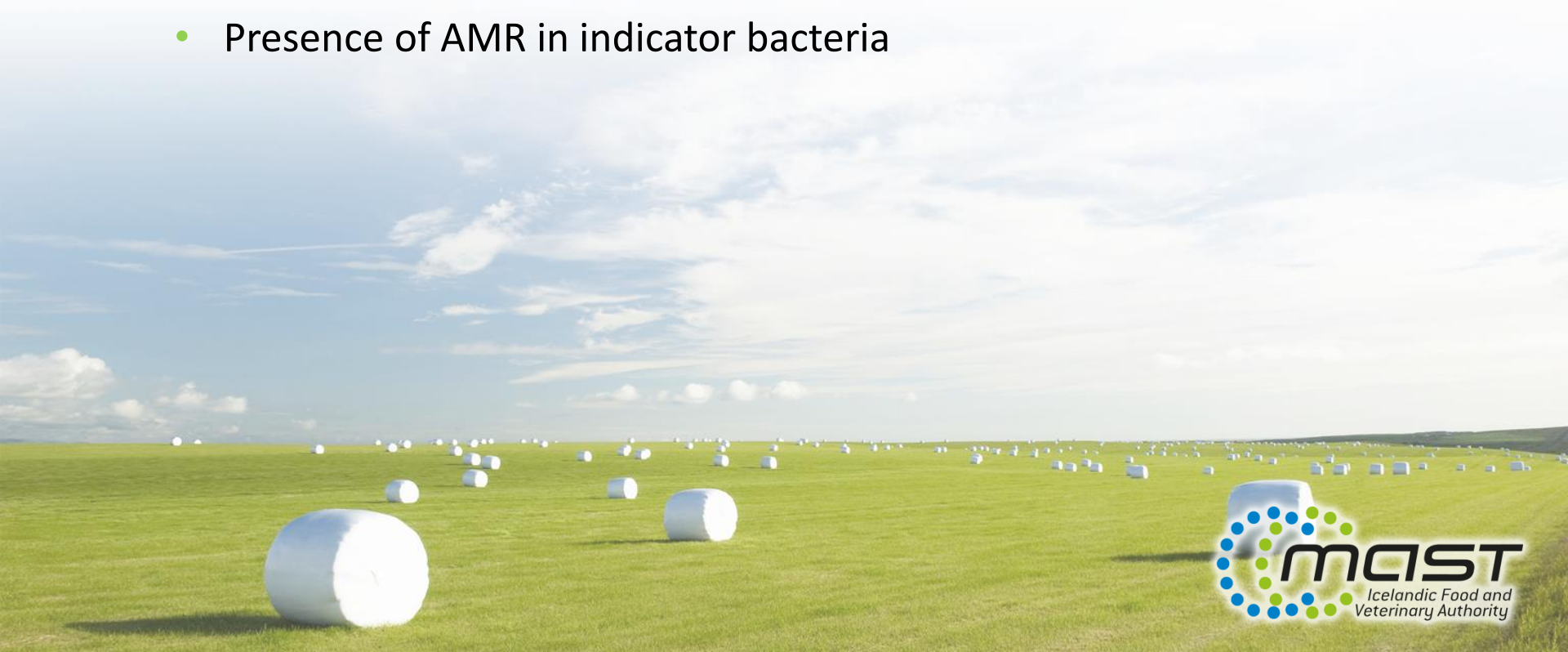
recommendations related to feed, animals, food production and food at retail (6 of 10)

5. Improve the monitoring of AMR in animals and food production
   - Legal framework
     - Implementation of Decision EC/652/2013
     - Add other relevant issues – imported fertilized eggs, companion animals
     - Guarantee of finance
   - Reaction plan
     - What if/when we find MRSA at a pig farm?
6. Improve the monitoring of AMR in food at retail
   - Legal framework
     - Implementation of Decision EU/652/2013
     - Add other relevant issues – fresh meat from sheep and horses and vegetables
     - Guarantee of finance and cooperation with the local authorities (sampling)

Final report - cont.

recommendations related to feed, animals, food production and food at retail (6 of 10)

7. Conduct a review of the use of antiparasitica
   - Research is needed – parasites in animals and their resistance
   - Guidelines – preventions and use of antiparasitica
8. Research in the environment
   - Presence of AMR in indicator bacteria



Thank you!

www.mast.is