

DOSTOFARM®

Reduction of Antimicrobial Use in Food Animal Production

European Experiences and Perspectives



now also available
RAISED WITHOUT ANTIBIOTICS

DOSTOFARM®

Outline

1. Current Antibiotics Use in the ÉU
2. Antibiotic Free Programs in the US vs. Europe
3. EU's next Move 2019-2023
4. Management Options in ABF Production
5. Dietary Options in ABF Production
6. Example: Essential Oils



2

DOSTOFARM®

Outline

1. Current Antibiotics Use in the ÉU
2. Antibiotic Free Programs in the US vs. Europe
3. EU's next Move 2019-2023
4. Management Options in ABF Production
5. Dietary Options in ABF Production
6. Example: Essential Oils



3

DOSTOFARM®

Sales of Veterinary Antimicrobials in 30 European Countries

EMA-ESVAC Report: Spatial distribution of overall sales of all antimicrobials for food-producing animals, in mg/PCU, for 30 countries, for 2016



EU Average 2017: 152 mg/PCU
USA 2017: 200-250 mg/PCU



4

DOSTOFARM®

Outline

1. Current Antibiotics Use in the ÉU
2. Antibiotic Free Programs in the US vs. Europe
3. EU's next Move 2019-2023
4. Management Options in ABF Production
5. Dietary Options in ABF Production
6. Example: Essential Oils




5

DOSTOFARM®

Antibiotic Free Programs (US)

Organic

- No antibiotics to animals raised for meat, milk and egg production
- Exception: Chickens and turkeys in the hatchery while chick is still in the egg and on its first day of life

Raised Without Antibiotics ("no antibiotics ever" and "never given antibiotics")

- No antibiotics of any kind used in the raising of that animal.

No Medically Important Antibiotics

- No antibiotics used to treat people—such as amoxicillin, erythromycin, and tetracycline

No Critically Important Antibiotics:

- Some of the medically important antibiotics used to treat people are no longer used

No Growth-Promoting Antibiotics/Antimicrobials:

- No antibiotics as growth promoter.
- Drugs not used in people can be used for growth promotion




6

DOSTOFARM®

Antibiotic Free Programs (EU)

Organic (EU Regulation 2018/848)

- Preventive use of chemically synthesized medicinal products, including antibiotics not be permitted
- Sick or injured animals: use of such products limited to the minimum necessary
- Substances to promote growth or production (including antibiotics, coccidiostats and other artificial aids for growth promotion purposes) and hormones shall not be used.
- Antibiotics may be used where necessary, under strict conditions and under the responsibility of a veterinarian, when the use of other products is inappropriate
- Except for vaccinations, more than three treatments disqualify the animals for organic products

Raised without Antibiotics (only few companies in Europe)

- Spillpig UK, bacon smoked and unsmoked: antibiotics used when necessary, usually on an individual basis. Treated pigs sold separately under a "Freedom Food" label, but not as ABF
- Reinert, Germany and Danish Crown, Denmark: sausages: "Herzenssache", from 100% ABF pigs.

Public Concerns

- Health campaigners want retailers and suppliers to demonstrate plans to phase out routine prophylactic use of antibiotics, including a ban on the mass use of medication in feed.
- Welfare issue around completely removing any kind of antibiotic use in farming. "Animals must and should be treated with antibiotics as and when is necessary – and if diagnosed by a qualified vet.
- The "ABF" label implies that all other animal derived food was produced with the help of antibiotics.




7

DOSTOFARM®

Concerns about "Antibiotic Free Programs"

- Welfare issue around completely removing any kind of antibiotic use in farming. "Animals must and should be treated with antibiotics as and when is necessary – and if diagnosed by a qualified vet."
- The "ABF" label implies that all other animal derived food was produced with the help of antibiotics.






8

DOSTOFARM®

Outline

1. Current Antibiotics Use in the ÉU
2. Antibiotic Free Programs in the US vs. Europe
3. **EU's next Move 2019-2023**
4. Management Options in ABF Production
5. Dietary Options in ABF Production
6. Example: Essential Oils




9

DOSTOFARM®

EU's next Move On Antibiotic Use In Livestock 2019-2023

Regulation (EU) 2019/6 (Veterinary Medicinal Products) and Regulation (EU) 2019/4 (Medicated Feed) Set into force by 2022:

- ban on preventive use of antibiotics in groups of animals
- ban on preventive use of antimicrobials via medicated feed
- restrictions on metaphylactic use of antimicrobials (control treatment preventing a further spread of infection)
- reinforced ban on use of antimicrobials for promoting growth and increasing yield
- possibility to reserve certain antimicrobials for humans only
- obligation for Member States to collect data on the sale and use of antimicrobials
- various measures aiming at prudent and responsible use of antimicrobials
- non-EU countries will have to respect the ban on antimicrobials for promoting growth and increasing yield, as well as the restrictions on antimicrobials designated as reserved for human use in the EU
- Federation of Veterinarians of Europe (FVE) requests the European Commission to update its 2008 report on the use of coccidiostats and histomonostats as feed additives and to explore ways to bring coccidiostats under veterinary prescription while safeguarding their availability

No room for national deviations because of the full harmonization provided for under pharmaceutical legislation.




10

DOSTOFARM®

Outline

1. Current Antibiotics Use in the ÉU
2. Antibiotic Free Programs in the US vs. Europe
3. EU's next Move 2019-2023
4. **Management Options in ABF Production**
5. Dietary Options in ABF Production
6. Example: Essential Oils




11

DOSTOFARM®

Management Options in ABF Production

- Robust genetics
- Sick animals are treated, but then shifted from ABF program to conventional program
- Clear Management Focus
- Vaccination
- Hygiene and biosecurity
- Clean, dry, warm - appropriate ventilation
- Improving sow health for healthier piglets
- All in - all out
- Disinfection




12

DOSTOFARM®

Outline

1. Current Antibiotics Use in the ÉU
2. Antibiotic Free Programs in the US vs. Europe
3. EU's next Move 2019-2023
4. Management Options in ABF Production
5. Dietary Options in ABF Production
6. Example: Essential Oils




13

DOSTOFARM®

Dietary Options in ABF Production

Probiotics

- introduce desirable live microorganisms into the GIT

Prebiotics

- promote the growth of desirable bacteria in the GIT

Enzymes

- help to eliminate the anti-nutritional effects of water-soluble polysaccharides, and/or change the substrates to improve proliferation of some beneficial microorganisms

Organic acids

- inhibition of bacterial and fungal growth, improve feed sanitary status

Plant Extracts - Essential oils - Phytochemicals

- improve animal feed intake, improve feed sanitary status and quality, modulate ruminal fermentation, improve nutrient digestion and absorption, induce changes in host physiological response (inflammation, stress, nociception, digestion, muscle growth, fat mobilisation)




14

DOSTOFARM®

Outline

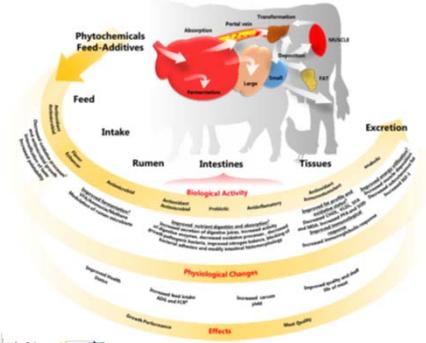
1. Current Antibiotics Use in the ÉU
2. Antibiotic Free Programs in the US vs. Europe
3. EU's next Move 2019-2023
4. Management Options in ABF Production
5. Dietary Options in ABF Production
6. Example: Essential Oils




15

DOSTOFARM®

Plant Extracts and Essential Oils – Multiple Effects



Source: Valenzuela-Grijalva et al. 2017




16

DOSTOFARM®

Focus on Effects of Essential Oils – Feed Sanitary Status

- Strong antimicrobial activity
 - antibacterial
 - antiviral
 - antifungal
 - antiprotozoal
 - antiparasitic
 - antioxidative







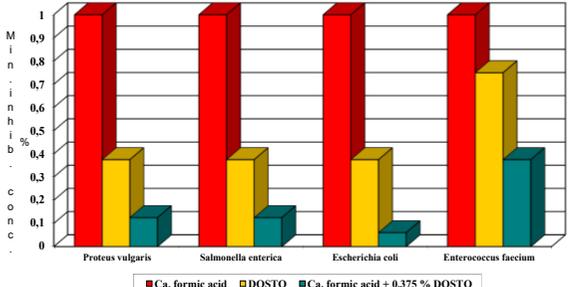



17

DOSTOFARM®

Focus on Effects of Essential Oils – Feed Sanitary Status

Synergistic effects with organic acids!



Species	Ca. formic acid (%)	DOSTO (%)	Ca. formic acid + 0.375% DOSTO (%)
Proteus vulgaris	1.0	0.4	0.15
Salmonella enterica	1.0	0.4	0.15
Escherichia coli	1.0	0.4	0.15
Enterococcus faecium	1.0	0.8	0.4








18

DOSTOFARM®

Focus on Effects of Essential Oils – Feed Efficiency

Improvement of nutrient digestion and absorption

- Direct stimulation of saliva production, digestive enzyme secretion, increase in bile and mucus secretion
- Decrease in total bacterial count and enteropathogenic loads via antibacterial effect in intestinal lumen
- Improved energy consumption, preservation of nutrients and improvement in gut morphology through anti-inflammatory, antioxidant and antimicrobial activity in the intestinal lumen










19

DOSTOFARM®

Focus on Effects of Essential Oils – Physiological Effects

Induction of changes in host physiological response (inflammation, stress, nociception, digestion, muscle growth, fat mobilisation)

- β -adrenergic receptor antagonists or stimulators of IGF-1 secretion can modulate animal metabolism in favor of increasing muscle tissue
- Stimulatory effect on serum and tissue antioxidant activity
- Phytosterols can influence Cholesterol metabolism










20

DOSTOFARM®

Thank you for your attention!

Questions?

