Farmer surveys on mastitis, dry cow therapy and antibiotic use

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Austria ≠ Australia!
Advancement of Dairying

1. Principles of milk production and safety
   1.1. Nutritional concepts for high-yielding dairy cows
   1.2. Dairy cow reproduction
   1.3. Udder health and innovation
   1.4. Raw milk quality and food safety

2. Constituents of competitive milk production
   2.1. Integrated data management
   2.2. Strategies to reduce antibiotic use
   2.3. Econometrics
Strategies to reduce antibiotic use

- First: we need to know the level of current antibiotic use in dairy cows
- Then: we can work out how to reduce antibiotic use.....
- While still treating sick animals (maintaining animal welfare)
Strategies to reduce antibiotic use
Current research project

- 18 veterinary practices
- 255 dairy farms
- 6700+ cows, 14,000+ cattle
- Commercial milk buyers and national milk recorders
Companies and organisations

National agencies

Cattle associations

Laboratories

Veterinary health services

Commercial milk buyers and national milk recorders

Feed companies
Geographic distribution
Data collection: 2015-2016

- Electronic data collection from vets on ALL medication records: diagnoses, dispensed and administered meds
- Individual animal performance data
- Milk samples taken from all mastitic cows – sensitivity testing
- 4 online surveys
Online surveys

- Farmers
- Vets (2 surveys)
- Milk recorders and milk buyers
Surveys – response rates

- Dairy farmers: 204/263 (78% RR)
- Vets: 218/255 (85%)
- Demographics of vets: 30 responses
- National milk recorders and commercial milk buyer employees: 202/255 (79%)

Surveys still ongoing
Results of farmer surveys

- 76% conventional farms
- 16% organic and 7% regional marketing
- 72% full-time farmers
- 23% part-time (<50% income from farm)
- 5% part-time (50-90% income from farm)
Results of farmer surveys

- **Bar graph**: Number of herds by number of dairy cows.
- **Pie chart**: Percentage of dairy breeds. Categories include:
  - Simmental (Fleckvieh): 74%
  - Brown Swiss (Braunvieh): 11%
  - Holstein Friesian: 12%
  - Red Holstein: 2%
  - Other: 1%
## European comparison (2010)

<table>
<thead>
<tr>
<th>Country</th>
<th>Total number of cattle farmers</th>
<th>Cattle per farm</th>
<th>Dairy cows per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>71,940</td>
<td>28.1</td>
<td>11.3</td>
</tr>
<tr>
<td>Germany</td>
<td>144,850</td>
<td>86.5</td>
<td>46.4</td>
</tr>
<tr>
<td>France</td>
<td>199,620</td>
<td>97.7</td>
<td>45.0</td>
</tr>
<tr>
<td>Ireland</td>
<td>111,000</td>
<td>59.5</td>
<td>58.0</td>
</tr>
<tr>
<td>Spain</td>
<td>111,840</td>
<td>52.2</td>
<td>30.9</td>
</tr>
<tr>
<td>UK</td>
<td>85,760</td>
<td>117.3</td>
<td>78.3</td>
</tr>
</tbody>
</table>

Source: ZAR Jahresbericht 2014
Housing systems
Regular access to pasture
Farmers’ opinion

The most important management areas for good udder health:
1) Milking practice/hygiene
2) Milking machine
3) Feed/nutrition
4) Stall hygiene
5) Dry cow management
Milk recorder surveys (initial results)

- 58% of farms have a milking parlour
- 35% are milking in the cowshed
- 3% directly into a milk churn
- 3% have milking robots
Milk recorder surveys (initial results)

- 61% of milkers wear gloves
- 44% of milkers dry-wipe teats prior to milking
- 30% do not teat dip
- 56% do not disinfect the cluster between cows
Mastitis

- Milk sampling and bacteriological culture when mastitis occurs?
  - 53% of farmers: always
  - 42% of farmers: sometimes
  - 5% of farmers: never
Mastitis

- According to vets, most commonly isolated bacteria on these farms are:
Mastitis

- When is a California Mastitis Test (CMT) done?
  - 15% of farmers: regularly on all cows
  - 82% of farmers: cows with symptoms
  - 3% of farmers: never
Veterinary Health Service

- Set up in each federal state
- Organised by both vets and farmers
- Farmers pay a „membership fee“
- Annual herd health check by vet
- Both vets and farmers must undergo regular training
Veterinary Health Service

- Udder Health Programme
- Bacteriological culture and antimicrobial susceptibility testing is either free or heavily subsidised
- High degree of acceptance among farmers
Antibiotic use on farm in Austria

- Veterinary antibiotics are ONLY available from veterinarians
- Intramammary treatments must be administered by a veterinarian
- UNLESS: farmer is a member of the Veterinary Health Service and has been sufficiently trained
- For acute cases and dry cow therapy
Antibiotic use on farm in Austria

- Farm vets MUST report all antibiotics dispensed for use in food-producing animals
- Vets do not have to report antibiotics administered directly to livestock
- Both farmer and vet must keep detailed records
Mastitis – Austrian data

Antibiotics for intramammary use - LACTATING COWS - proportion sold between 2010 and 2014

Source: Fuchs & Fuchs, AGES, 2015
Drying off

- 63% of farmers dry their cows off 56-60 days before calving
- 14% of farmers culture milk samples from ALL cows before drying off
- BUT 16% never culture prior to drying off

- BLANKET or SELECTIVE DCT?
Dry cow therapy – survey responses

- Yes, all cows (45%)
- Only in animals with positive bacteriological culture (21%)
- Only in animals with symptoms (33%)
- No (antibiotics not used at drying off) (1%)
Dry cow therapy – survey responses

Reasons why DCT used on ALL cows (n=92)

- Prevention of mastitis in dry period (70 farmers)
- Treatment of chronic mastitis (30 farmers)
- Negative experience without antibiotic dry cow tubes (40 farmers)
- Routine procedure (30 farmers)
- Other reason (5 farmers)
Dry cow therapy – survey responses

- Vets’s first choice therapy is cloxacillin (71% of farms)
- But on 6% of farms cefquinome is first choice for drying off
- Results will be compared with actual antibiotic use data
Dry cow therapy – Austrian data

Antibiotics for intramammary use - DRY COW THERAPY - proportion of tonnes sold to veterinary practice pharmacies

Source: Fuchs & Fuchs, AGES, 2015
Alternatives to antibiotics

- If teat sealants are used, how?

![Bar chart showing farmers' and vets' responses to using teat sealants](chart.png)

- In combination with antibiotic tubes:
  - Farmers' response: 61%
  - Vets' response: 63%

- Teat sealant alone:
  - Farmers' response: 39%
  - Vets' response: 37%
Alternatives to antibiotics

- Mastitis vaccines are used on 13% of farms (all StartVac)
  - Of these:
    - 56% vaccinate prior to calving
    - 68% only vaccinate infected animals
Conclusions

- Farmers are willing to be involved in antibiotic stewardship and improved cow health and welfare
- Selective dry cow therapy needs to be supported by vets, milk buyers and farmers
- Analysis of antibiotic use and antimicrobial resistance is ongoing
Thanks to my co-authors

- **Dr Walter Obritzhauser** – principle investigator and farm vet
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Any questions?

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