Use of a livestock-adapted ADKAR® change management model for reducing AMU

Nele Caektebeke
Ghent University

AACTING 2019
Bern, Switzerland
Improve farm health to reduce AMU
AMU on pig and broiler farms

Selection on high users
Reduction in AMU 2018

Reduction in poultry
- Belgium: +13% Ref 2017
- the Netherlands: -68% Ref 2009, +26.3% Ref 2017

Reduction in pigs
- Belgium: -26% Ref 2014
- the Netherlands: -58% Ref 2009

Total reduction
- Belgium: -35.4% Ref 2011
- the Netherlands: -63.8% Ref 2009
Debunking the myth of the hard-to-reach farmer: Effective communication on udder health

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ABSTRACT

Worldwide, programs to control mastitis are implemented using different strategies to reach farmers. Even though education materials and best practices may be technically optimal, they need to be used to be successful. Thus, effective communication with farmers is essential in order to change their behavior and improve their farm management. During a Dutch national mastitis control program, a substantial number of farmers seemed to be hard to reach with information on udder health. Consequently, this study was designed to provide insight into the attitude and motivation of such farmers. In the period of October 2007 to July 2008, 24 in-depth, semistructured interviews were conducted with farmers whose veterinarians considered to be difficult to approach with advice on udder health management (8 practices, 3 farmers from each practice). The interviews included questions about the farms and the farmers, their attitude and behavior regarding mastitis, and their information sources and social environment.

INTRODUCTION

Mastitis is one of the main health issues in dairy production (Bradley, 2002; LeBlanc et al., 2006). As a result, mastitis control programs are implemented in various countries using different strategies to reach farmers. Most of these control programs focus on the development of education materials and recommendations for best practices. Although this information may be technically optimal for decreasing mastitis, it has to be effectively communicated to farmers (Chase et al., 2006; LeBlanc et al., 2006). Mastitis control programs worldwide find that, despite all efforts, not all farmers are reached by mastitis information. A study of a national mastitis control program on udder health, Consequently, this study can contribute to the optimization of future programs designed to control and prevent diseases.

Key words: mastitis, communication, education, extension

Feature Series – Review Article

Challenging the myth of the irrational dairy farmer; understanding decision-making related to herd health

E. Kristensen* and EB Jakobsen†

Abstract

Veterinarians working with dairy cows are suggested to refer to the advice from being task-oriented providers of single-cow therapy and develop themselves into advice-oriented herd health management advisors. The practical cattle veterinarian's ability to translate knowledge into on-farm application requires profound understanding of the dairy farm as an integrated system. Consequently, educating and motivating farmers are key issues. To achieve such insight, the veterinarian needs to work with several scientific disciplines, especially epidemiology and (behavioural) economics. This trans-disciplinary approach offers new methodological possibilities and challenges to students of dairy herd management.

Introduction

In this review, we reflect on various cognitive processes involved in dairy farmers' voluntary decision-making related to herd health management programmes, and how these processes affect farmers' cooperation with veterinarians in advice-giving situations. Farmers' involuntary decisions, however, e.g. decisions following new legislation, are equally interesting from a decision-making perspective. Involuntary decisions are beyond the scope of this review, and interested readers are therefore recommended to study the work of, for example, Tenhunen and Mazzucchi (1999), Dernburg et al. (2007), and Heffernan et al. (2008).

The major points of progress and challenges in dairy herd health management were discussed, in an already classical paper by
<table>
<thead>
<tr>
<th>ADKAR building block</th>
<th>Description building block</th>
<th>Score</th>
<th>Explanation scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Represents the awareness that AMU in livestock production should be reduced while this is a risk for introduction of antimicrobial resistant bacteria in animals and men.</td>
<td>1</td>
<td>Farmer missed all information regarding AMU and AMR. Is not aware there are reduction goals, nor is aware AMU is a risk for AMR.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Farmer is aware of the recommendation to reduce AMR, but is completely denying the problems related to AMR.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Farmer is aware that AMR should be reduced, but contests the role AMU in livestock. Mentions the role of AMU in human medicine and/or the role of AMU in dogs and cats.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>Farmer is aware that AMU should be reduced, and accepts the reduction goals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>Farmer is fully aware that AMU should be reduced, as he accepts the risks and opportunities for livestock production. He takes responsibility for the AMU in the farm and embraces the reduction goals for the farm.</td>
</tr>
<tr>
<td>D</td>
<td>Represents the personification of the awareness. “Does the farmer himself want to reduce AMU in his farm?”</td>
<td>1</td>
<td>Farmer states: “This is not my problem. It does not concern me”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Farmer will reduce, but is not the first adaptor. Farmer states: “my “neighbour” should also reduce”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Farmer wants to reduce, but slowly. The goal is not to reach the lowest use possible, just enough is also OK.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>Farmers goal is to reach the lowest AMU possible, with equal costs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>Farmers goal is to reach the lowest AMU possible, even if there are considerable costs related to the reduction.</td>
</tr>
<tr>
<td>K</td>
<td>Represents the knowledge and skills of the farmer to implement measures to improve health and to reduce the need for antimicrobial treatment.</td>
<td>1</td>
<td>It is not clear what is causing the health problems in the farm. It is not possible to draw up an action plan. The farmer and his network really do not know where to start.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Low or inaccurate knowledge, experience or skills which are needed for the execution of the action plan are available for the farmer. Or, the underlying cause of the problem is not yet identified.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Information on health problem(s) is available for the farmer, action plan can be drawn up.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>Information is available, but some discussion about the implementation. Support for the farm and farmer is needed to implement change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>Information is available, Action plan is accepted and knowledge and skills are sufficiently available at level of farmer, veterinarian and personnel of the farm.</td>
</tr>
</tbody>
</table>
Results

ADKAR
ADKA(R): initial situation

Awareness
ADKA(R): initial situation

Awareness

Desire

Knowledge

Ability
ADKA(R): initial situation

Awareness

Desire

Knowledge

Ability
<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>D</th>
<th>K</th>
<th>A</th>
<th></th>
<th>A</th>
<th>D</th>
<th>K</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>2,9</td>
<td>3,3</td>
<td>3,0</td>
<td>2,7</td>
<td>the Netherlands</td>
<td>4,8</td>
<td>4,4</td>
<td>4,1</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the Netherlands</td>
<td>3,1</td>
<td>3,0</td>
<td>2,7</td>
<td>2,9</td>
</tr>
<tr>
<td>Belgium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the Netherlands</td>
<td>4,1</td>
<td>3,5</td>
<td>3,7</td>
<td>3,7</td>
</tr>
</tbody>
</table>

ADKAR initial situation: averages
Results

AMU
AMU: initial situation

Belgium

the Netherlands
AMU initial situation: averages

Belgium

TI = 10.24

the Netherlands

TI = 6.63
AMU: initial situation

Belgium

the Netherlands
AMU initial situation: averages

Belgium

Weaners

TI = 43,78

Fatteners

TI = 6,57

the Netherlands

Weaners

TI = 14,07

Fatteners

TI = 1,22
Farm specific action plan

Visit 1 → Visit 2
6 months
Visit 2

ADKAR
Belgium

<table>
<thead>
<tr>
<th>Initial situation</th>
<th>After coaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>Desire</td>
</tr>
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<table>
<thead>
<tr>
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<th>Ability</th>
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Netherlands

<table>
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<th>Initial situation</th>
<th>After coaching</th>
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<tr>
<td>Awareness</td>
<td>Desire</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Ability</th>
</tr>
</thead>
</table>
Awareness
Desire
Knowledge
Ability

Initial situation
After coaching

Belgium
the Netherlands
ADKAR

AMU
AMU

P = 0.001
\( \rho = -0.440 \)

AMU

P = 0.021
\( \rho = -0.319 \)

Awareness

Ability
AMU weaner: P = 0.005, ρ = -0.373
AMU fattener: P = 0.004, ρ = -0.432
Effect of coaching on AMU

AMU

Round
- Round 1
- Round 2

Belgium  Netherlands  Belgium  Netherlands  Belgium  Netherlands
Key messages

Effect coaching on ADKA(R)

ADKAR

AMU

Coaching

AMU
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