

# **EFFECTIVENESS OF TEAT COVERAGE WITH POST MILKING TEAT DISINFECTANT USING A VACUUM OPERATED TEAT SPRAY SYSTEM**

**Brian Pocknee<sup>1</sup>, Neal Thornber<sup>1</sup>, Colin Kingston<sup>2</sup>, Richard Hiley<sup>2</sup>, Richard May<sup>2</sup>, Mark Cinderey<sup>2</sup> and Alex Carlsson<sup>2</sup>**

<sup>1</sup> The Dairy Group, New Agriculture House, Blackbrook Park Avenue, Taunton, Somerset, TA1 2PX – [www.thedairygroup.co.uk](http://www.thedairygroup.co.uk). <sup>2</sup> Ambic Equipment Ltd, One Parkside, Avenue Two, Station Lane, Witney, Oxfordshire, OX28 4YF – [www.ambic.co.uk](http://www.ambic.co.uk)

## **INTRODUCTION**

In addition to the bacteriocidal properties of a post milking teat disinfectant, complete teat coverage with the product is essential to help ensure that the teat skin is as soft and supple as possible to withstand the rigours of milking. Anecdotal evidence suggests that dipping is more effective than spraying and is less operator dependent. There are an increasing number of automatic teat spraying systems available to dairy farmers, but it is difficult to compare teat coverage of these systems with that of manual teat disinfection. Ideally an automatic system will provide 100% teat barrel and teat end coverage 100% of the time. The purpose of this study was to measure post milking teat barrel and teat end coverage when manual spraying with disinfectant.

## **EVALUATION METHOD**

Teat barrel and teat end coverage were assessed post application of the teat disinfectant product on ten farms, each with a minimum of 150 cows. .

To assess barrel coverage, the front and back of the teat was scored as a maximum of 50, i.e. if all one teat side was completely covered this equated to 50 (100% coverage of that plane), whereas a score of 25 meant that only half of that plane was covered in chemical. If both sides of the teat barrel were completely covered this equates to 100% teat barrel coverage.

Teat end coverage was assessed as either covered or not covered (hit or a miss). The volume of teat disinfectant product applied during the monitored milking was measured and a calculation of chemical usage / cow / milking made.

## **RESULTS**

Teat end and teat barrel coverage are shown in the following three tables. The amount of teat disinfectant used per cow ranged from 6.25 to 21.75 ml, with an average of 15.29 ml.

### **Table 1. Teat end and teat barrel coverage with disinfectant**

	Average Number - Teat end coverage	Number for No teat end coverage	Number of missing quarters	Average % for Left teats	Average % for Right teats	Average % for Rear teats	Average % for Front teats	Average % for All teats
<b>Study average</b>	3.77	36.5	2.1	50.06	50.54	52.41	48.19	50.30
<b>Minimum</b>	3.2	0.0	0.0	18.7	20.9	20.6	18.9	19.8
<b>Maximum</b>	4.0	127.0	6.0	82.3	85.1	86.2	80.6	83.4

**Table 2. Percentage teat end coverage**

	Rear Left	Front Left	Front Right	Rear Right	Average
<b>Teat end only covered</b>	95.5	92.2	94.2	96.2	<b>94.5</b>
<b>No teat end coverage</b>	4.5	7.8	5.8	3.8	<b>5.5</b>
<b>No teat *</b>	0.3	0.5	0.4	0.1	<b>0.3</b>

\* three quartered cow and unit not applied

**Table 3. Teat barrel coverage**

	Rear Left		Front Left		Front Right		Rear Right	
	<i>Back</i>	<i>Front</i>	<i>Back</i>	<i>Front</i>	<i>Back</i>	<i>Front</i>	<i>Back</i>	<i>Front</i>
<b>Average teat coverage (score out of 50)</b>	42.9	21.9	42.0	17.5	42.1	18.5	43.3	21.9
<b>No barrel coverage (number)</b>	7.1	40.9	8.3	60.2	6.6	58.2	6.2	42.7
<b>Average number of teats scored</b>	166.1		165.7		166.0		166.4	

Just over 80% of the rear of teat barrels was covered (Score 42 out of 50). However, only between 35% and 44% of the front of the teat barrel was covered. Coverage of the front of cows' teats tended to be worse where cows stand at 90° to the operator. There was little difference in the percentage of teat ends covered between teats on the left and right or front and rear.

## **CONCLUSION**

There is a significant range in the skill with which post milking teat disinfectants are applied with a hand held, vacuum operated teat sprayer. This level of variation is worrying, and on many farms the objectives of teat spraying are not being achieved. An automatic system that applies the product consistently and achieves acceptable levels of teat barrel and teat end coverage would be advantageous to the industry.