ABSTRACT

Pasture-raised milk is gaining in importance in some European countries and in the United States. The production of pasture-raised milk is linked to higher costs, as the milk is normally collected and processed separately from conventional barn milk. This could hinder the production of sustainable milk products. We discuss alternative labeling strategies that allow the mixing of pasture-raised (sustainable) and conventional milk to reduce costs and break free from the current niche market. The lower price would allow for more pasture-raised milk to be produced and enter the mainstream market. The aim of this study was to analyze consumers’ willingness to pay for alternative labeling types using a discrete choice experiment with 1,065 German milk buyers. The 2 alternative labels, besides the classical labeling approach, are based on the mass balance approach (at least 50% pasture-raised milk in a package) and cause-related marketing (support of farmers who keep their cows on pasture). The discrete choice experiment was combined with a cluster analysis to get a deeper understanding of the buying behavior of the diverse consumer segments for milk. We found that all consumer groups prefer the classical label where products are segregated but also understand the benefits of cause-related marketing. The average consumer was willing to pay €0.50 more for pasture-raised milk certified with the classical label and €0.38 more for pasture-raised milk labeled with a cause-related marketing claim. However, differences between the clusters are strong: The smallest cluster of ethically involved consumers (15%) is willing to pay the highest premiums, especially for the classical label. Cause-related marketing is an interesting alternative for involved buyers under price pressure (41%), whereas the mass balance approach is little understood and thus less valued by consumers. From our results we concluded that cause-related marketing (in our case, the support of pasturing of dairy cows) can be useful for dairies for which it is not efficient to collect and process products separately. This approach is furthermore suitable for reaching consumers who are mainly interested in altruistic issues but at the same time are more price sensitive, as this labeling strategy does not need separate collection and processing and can thereby be marketed at a lower price.

Key words: mass balance certification, alternative labeling strategy, consumer behavior, discrete choice experiment, pasture-raised milk

INTRODUCTION

Pasture-raised milk is gaining in importance in Europe and the United States. Typically, this kind of milk is sourced completely from cows with access to pasture. This implies that the milk has to be collected and processed separately from conventional barn milk, leading to higher costs for dairy companies (Dehue et al., 2007). The additional production costs have to be covered by sales, which in turn depend on higher consumer prices. However, high prices could act as purchasing barriers (McEachern and Schröder, 2002). Thus, segregation costs could be the reason why certified products remain in niche markets as larger, low cost–oriented producers expect cost disadvantages (OECD, 2004).

Further costs arise from the bonus payments farmers often receive to motivate them to follow certain production standards (Schreiner and Latacz-Lohmann, 2015). Currently, German dairy farmers produce more milk that meets the standards for pasture-raised milk than can be sold. This is attributable to the fact that about 40% of the dairy cows in Germany still have access to pasture (Destatis, 2010), whereas market shares for labeled pasture-raised milk remain low. However, especially for cooperative dairies, due to principles of equality, all farmers are entitled to bonus payments when adhering to a prescribed standard regardless of how their milk is sold. This can significantly force up remuneration payments. Total costs incurred are depen-
dent on the individual structure of the dairies (Table 1). As such, cost is the main reason why large dairies in Germany are not able to produce pasture-raised milk.

A higher market share of pasture-raised milk would reduce the bonus payments for milk that is not sold as pasture raised. However, pasture-raised milk is sold mainly as drinking milk, a segment that covers only a small percentage (17%) of the milk processing chain in Germany (Milchindustrie, 2015).

To break the cycle of low quantities and high costs, dairies face 2 alternatives. The first is to expand the range of pasture-raised milk products by introducing new products, such as cheese. However, this is risky because consumers’ willingness to pay (WTP) decreases with the degree of processing (Cicia and Colantuoni, 2010). Therefore, it could be even more difficult to cover the additional costs when selling processed “pasture-based” products. The second is to avoid segregation costs. This could be achieved by allowing the controlled mixing of pasture-raised milk with conventional barn milk.

For the marketing of mixed pasture-raised milk, alternative labeling concepts are needed. Two potential concepts are discussed in this article. One alternative resembles the mass balance approach, in which the minimum percentage of pasture-raised milk in the package is defined and claimed on the label. The other alternative follows the cause-related marketing approach, in which the label informs consumers that a purchase financially supports farmers who keep their cows on pasture.

Both strategies renounce the segregation of barn milk and pasture-raised milk, thereby increasing production efficiency for more dairies. This would facilitate the elevation of sustainable milk products from the current niche market. Price and availability barriers faced by consumers could thus be overcome (Jones et al., 2001). Thereby, more milk could be sold as pasture raised, making it easier to cover the farmers’ bonus payments.

Results from previous choice experiments show that some consumer groups are willing to pay more for premium milk if the cows are kept in pasture-based husbandry systems (Tempesta and Vecchiato, 2013; Wolf et al., 2011). Until now, only classic labels, which require the strict separate processing and marketing of conventional and premium milks along the milk supply chain (and thus are associated with higher costs), have been studied from a consumer’s perspective. Therefore, the aim of this article is to analyze consumers’ willingness to buy and pay for the classical and 2 alternative labeling strategies for pasture-raised milk. We conducted a choice experiment and linked it to a cluster analysis to account for existing consumer segments. The challenge is to find a viable marketing solution to protect pasturing of dairy cows as an important production process. To our best knowledge, this study is the first to compare 3 different labeling approaches for sustainable dairy husbandry.

### Table 1. Cost factors and sales potential for pasture-raised milk based on the structure of dairies

<table>
<thead>
<tr>
<th>Cost factor</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segregation of raw materials</td>
<td>Higher costs if farms meeting the criteria are regionally distributed and too small to fill one transport unit</td>
</tr>
<tr>
<td>Separate collection</td>
<td>Higher costs if no separate production line or factory exists, leading to conversion costs</td>
</tr>
<tr>
<td>Separate processing</td>
<td>Dependent on the percentage of dairy farmers meeting the criteria for pasture-raised milk compared with the share of pasture-raised labeled products sold</td>
</tr>
</tbody>
</table>

### MATERIALS AND METHODS

#### Data Collection and Survey Design

A total of 1,175 German milk consumers participated in a survey that sought input on their buying behavior and preferences for pasture-raised milk. An online access panel was used for data collection, and quotas were set for age, sex, income, and education to collect a sample that is approximately representative of the German population. The survey was conducted in January 2015. Participants who stated that they do not consume fresh milk were excluded from the survey sample before starting. After outliers were removed from the data set (Zhang and Conrad, 2014), a sample size of 1,065 was obtained. Furthermore, the survey included a test question to eliminate participants who read the questions only superficially; these participants were sorted out during data collection.

The survey started with sociodemographic questions. Afterward, participants were asked about their buying behavior for pasture-raised milk. In the next step, respondents were confronted with a discrete choice experiment in which they had to decide what milk they preferred to buy. Then, respondents were asked
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