

Dairy cows in farms with organic and integrated production: management, production, reproduction udder health and antimicrobial resistance

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Schlüsselwörter

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Problemstellung und Zielsetzung

The majority of conventional farms in Switzerland are farms with integrated production (IP). The number of farms with organic production (OP) is increasing. We have investigated whether there are differences in OP and IP farms in Switzerland with respect to management, feeding, housing, milking procedures, milk production, udder health, and reproduction. Furthermore, we have evaluated chronic mastitis and antibiotic resistance of bacteria from udders with subclinical mastitis of cows held in OP farms as compared with cows held in IP farms.

Material und Methoden

We have investigated 970 cows in 60 randomly selected OP farms and 60 comparable IP farms in the canton of Berne. Depending on the number of cows/farm, 5, 8, or 13 cows were selected, resulting in 970 multiparous cows that were studied at about 30 d a.p., and 30 and 100 d p.p. (visits 1, 2 or 3). Farm management, type and amounts of feeds, and cow data were documented. From quarters with CMT \geq 2 bacteriological cultures were isolated, identified and tested. Quarter milk samples from 169 OP and 123 IP cows were screened: 127 samples with *Staphylococcus* (*S.*) *aureus*, 74 with *S.* other than *S. aureus* (*S. epidermidis*, *S. xylosus*, *S. hyicus*, *Micrococcus* sp.), and 90 samples with *Streptococcus* (*Sr.*) other than *Sr. agalactiae* (*Sr. uberis* and *Sr. dysgalactiae*).

Ergebnisse und Bedeutung

The ECM yield was significantly lower in OP than IP farms and there were significant differences in milking and udder health management, such as frequency of applying the California Mastitis test and antibiotic dry cow therapy, but there were no significant differences in SCC between OP and IP farms over the entire lactation, although SCC tended p.p. to be higher in OP than IP farms. There was a higher number of subclinical mastitis in the first 100 d of lactation in OP than IP farms. Some of the risk factors were strongly related to the two different farming systems. However, the farm type was less important than cow and management factors, albeit the farm type is confounded with differences in management factors. The separate analysis of risk factors for OP and IP cows showed that in OP farms the average farm SCC as well as alternative medication and in IP farms the antibiotic dry cow therapy and nutritional aspects may be of special importance. Antibiotic resistance was slightly higher among staphylococci from OP than IP cows, except for beta-lactam antibiotics, whereas antibiotic resistance of streptococci was slightly higher in isolates from IP than OP cows. Overall, the frequency of antibiotic resistance did not significantly differ between OP and IP cows, but seemed to be strain-related. None of the strains was resistant for amoxicillin/clavulanic acid or vancomycin.

Publikationen, Poster und Präsentationen

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