

A survey of the effect of different milking systems on milk yield and milk component of Holstein milking cows in Taiwan ⁽¹⁾

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Abstract

The purpose of this study was to investigate the effect on Holstein milking dairy cows using an automatic milking system (AMS) or conventional milking parlor (CMP) on milk yield (MY), milk component, and milk fatty acids (FA) composition. The result showed that the MY of the AMS herd (average 35.96 kg/d) was higher than the CMP herd within 100 days in milk (average 31.74 kg/d) but did not have effect on other milk components. Meanwhile, there were no differences in milk FA composition. However, a trend of increased free FA levels in raw milk was observed in the AMS herd (1.16 mmol/100 g milk fat) compared with the CMP herd (1.04 mmol/100 g milk fat) ($P = 0.06$). The AMS herd MY was significantly higher than the CMP herd in the early lactation ($P < 0.05$), but there was no significant difference between the two types of system herds of MY and milk composition in the middle and late lactation. No significant difference was found between the two systems in MY and milk FA in the same parity, and the third birth of cows had the highest MY. Regardless of the kind of milking system, MY was decreased by high temperature, as in contrary with the milk composition. In summary, the AMS herd MY could increase the average milk yield due to the different milking systems and the number of milking, however with significant difference only in early lactation. The use of different milking system in cows could result in the significant difference of protection content while cows using different milking system need to pay attention to the balance between early feeding and lactation high-peak demand, in order to reduce the revenue loss due to the relatively low milk components in price calculation. This study preliminarily explores the differences in cows' performance with different milking systems, in terms of lactation, milk components and composition of fatty acids, and thereby intends to find appropriate management and nutritional strategy for AMS in Taiwan.

Key words: Milking systems, Milk yield, Milk component.

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