Feed ingredients and feeding management practices are important variables in managing profit on commercial dairy farms. These variables may also have an important impact on complying with environmental regulations in California dairies. Many different by-products from the Ag systems are being used as feed ingredients in dairy diets to produce milk and reducing possible pollution problems. Quantitative and qualitative information of the most used feed ingredients, daily intakes, dietary nutrient contents and feeding management practices in lactating animals on commercial dairy systems are important in comparing, analyzing, planning, and making decisions for future improvements in the dairy industry.

OBJECTIVE
To describe TMR feed ingredients, nutrient contents, and feeding groups in lactating dairy cows on commercial California dairy farms.

METHODS

Dairies Surveyed: A total of 40 dairies were visited in Merced County, CA. Herd size average was 787 lactating cows ranging from 210 to 2435. Milk yield averaged 31.8 kg at 3.5% FCM/cow/day ranging from 20.6 to 43.5 kg/cow/day.

Information of TMR feed ingredients was obtained from the ration formulated by the nutritionist and/or the feeder loading sheets.

Dry matter intake (DMI) was obtained from the ration formulated by the nutritionist and/or the feeder loading sheets.

Nutrient composition (CP, NDF, ADF, Lig, Fat, Ash) of the TMR was evaluated by wet chemistry. Total mixed ration nutrient contents in lactating dairy cows are presented in Table 2. A total of 40 dairies were visited in Merced County, CA. Herd size average was 787 lactating cows ranging from 210 to 2435. Milk yield averaged 31.8 kg at 3.5% FCM/cow/day ranging from 20.6 to 43.5 kg/cow/day.

INTRODUCTION

To describe TMR feed ingredients, nutrient contents, and feeding groups in lactating dairy cows on commercial California dairy farms.

RESULTS

Table 1 contains a list of the main feed ingredients used in California dairies and its dry matter intake. From 118 TMR, 104 TMR were used with complete information of feed ingredients. The main feed ingredients used in more than 65% of the TMR were: corn silage (74% of TMR), alfalfa hay (98% of TMR), corn grain (84% of TMR), cotton seeds (72% of the TMR), and canola meal (65% of the TMR). All the other ingredients (about 20 different by-products) were in less than 45% of the TMR. The grouping systems and nutrient composition (n=118) of the TMR are presented in Table 2. Nine of 40 dairies (22%) fed a single diet to all lactating cows and 31 dairies fed multiple TMR diets to their lactating cow groups. Average milk production per cow for dairies feeding a single diet and multiple diets were 27.5±5.5 and 33.0±4.5 kg/3.5% FCM.

All dairies with multiple diets had a high and low TMR, and 58, 32, and 15% of dairies with multiple diets prepared TMR for fresh, first lactation, and mid groups, respectively. Average dietary NDF and fat content on dairies with one diet were close to the low TMR from dairies with multiple diets.

Crude Protein contents in multiple diets TMR (fresh, 1st lactation, high, and mid) were similar, averaging 17.5%CP. Across farms, CP content for 1st lactation diets were most consistent ranging from 16.7 to 18.0%CP, whereas for the other production groups ranged from 14% to more than 19%.

The Figure 1 compare CP% of extreme multiple diets or low and high milk yield cow groups. The difference of CP% in the bottom 25% data distribution was less than 7% between low and high milk yield cows, with minimal (average) or no differences in the top 25% distribution data, with about 19%CP.

CONCLUSIONS

The typical lactating dairy cow diet is based on five main ingredients (corn silage, alfalfa hay, corn grain, cotton seeds, and canola meal). More than twenty different by-products from the California Ag system, included in less than 45% of the TMR diets are being used to feed lactating cows and transformed in milk. About 80% of the dairies are using mineral mixes for lactating cows.

Table 2. TMR nutrient contents in lactating dairy cows feeding groups, means ± SD (n=118 TMR)

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