

A COMPARISON OF HAY, WILTED SILAGE AND FORMALDEHYDE-PREPARED SILAGE FED TO LACTATING DAIRY COWS

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Milk production is generally higher from dairy cows offered hay than those offered silage made from herbage cut at the same time. Wilting or treating herbage with formaldehyde before ensiling may increase the milk production by dairy cows fed silage. This paper describes an experiment to compare the intake and milk production by dairy cows fed hay or three silages made from either untreated herbage (U-silage), herbage wilted to 31 per cent dry matter (W-silage) or herbage treated with formaldehyde at 0.8 per cent of the dry matter (F-silage).

A phalaris (*Phalaris tuberosa*)-annual rye grass (*Lolium rigidum* cv. Wimmera) - subterranean clover (*Trifolium subterraneum*)-annual medic (*Medicago truncatula*, *M. rugosa*) pasture was conserved by either harvesting with a double-chop forage harvester or mowing with a rotary slasher and then being either picked up with the forage harvester after 24 hours wilting or baled for hay after three days drying. The herbages were compacted into bunkers and covered with plastic. The hay was stored under cover.

Thirty-two grade Friesian cows were individually fed the same silage for a one week covariance period and then randomly assigned to the four diets. The test diets were fed *ad libitum* for six weeks and each cow received 4.5 kg of a barley-meatmeal concentrate daily. Daily feed intakes, milk yields and yields and percentages of milk fat, protein and solids-not-fat (SNF) were recorded from weeks three to six inclusive for each cow. Daily liveweight gains of cows from weeks three to six and the covariance corrected intake and milk production data are shown in Table 1.

TABLE 1: Mean daily dry matter intakes, milk production and liveweight gains of cows fed the silages and hay.

Diet	Dry matter intake (g/W ^{0.75})	Milk yield (kg)	Fat yield (kg)	Protein yield (kg)	SNF yield (kg)	Live-weight gain (kg)
U-silage	126.7c†	15.0a	0.58a	0.47a	1.29a	0.16a
F-silage	114.0b	15.2a	0.61ab	0.50a	1.34ab	0.35a
W-silage	133.7c	16.2ab	0.62b	0.54b	1.42bc	0.86b
Hay	103.6a	16.7b	0.62b	0.54b	1.46c	0.04a

†Means in the same column not followed by the same letter are significantly (P < 0.05) different.

The results indicate that the nutritive value of silage for milk protein production is higher if the herbage is wilted rather than sprayed with formaldehyde before ensiling. Although cows fed wilted silage may produce similar amounts of milk fat and protein to those fed hay they can consume significantly more dry matter which can be utilised for liveweight gain.

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