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Lactating grazing dairy cow performance :influence of chopped fresh maize supplementation

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Introduction Lactating dairy cows face the problem of low dry matter intake when grazing . In order to alleviate this problem , supplementing with maize silage has been suggested (Hernández-Mendo and Leaver ,2006) ; however ,space and labor are needed to preserve ,store and hand out the silage . Offering chopped fresh maize could be a better supplementation option ,which even though a common practice in many Mexican dairy farms ,there is a lack information aboutthe method . Therefore the aim of this study was to examine the production of dairy cows grazing alfalfa-orchard with access to a chopped fresh maize supplement .

Material and methods The study was conducted from 7 August to 25 October 2006 at the Grazing Dairy Unit of the Universidad Autónoma Chapingo ,located in the State of México ,Mexico . Twenty-four multiparous Holstein cows grazing alfalfa (*Medicago sativa*)-orchard (*Dactylis glomerata L .*) were allocated at random to 3 treatments : 0 ,4 and 8 kg dry matter (DM) of chopped fresh maize (CFM) animal^{-1} d^{-1} . Each cow of all treatments received 3 .8 kg d^{-1} of concentrate ,whose crude protein content varied according to CFM and herbage intake in order to get an isoproteic total diet . One half of both CFM and concentrate were offered after each milking . Milk yield ,milk composition and dry matter intake (DMI) were evaluated . Results were analyzed in a crossing-over design ,with 3 periods of 19 days each ,using a PROC MIXED of SAS .

Results Milk yield and milk composition were not different ($P>0.05$) between treatments (Table 1) ; however ,milk yield tended to increase around 5 and 3% when supplementing with 4 and 8 kg of CFM respectively . The milk yield found in this study is very low compared to other studies ,which could have been due to the late lactation of the experimental cows . Herbage DMI and total DMI varied ($P<0.05$) with the level of CFM supplemented . This substitutive effect suggests the possibility of increasing the stocking rate ,and consequently increasing animal production per hectare .

Table 1 *Milk yield and dry matter intake (kg animal^{-1} d^{-1}) of grazing dairy cows offered different chopped fresh maize levels .*

	Chopped fresh maize ,kg DM animal^{-1} d^{-1}			
	0	4	8	Significance
Milk yield	9 .89	10 .35	10 .17	NS
Fat ,%	3 .25	3 .21	3 .26	NS
Protein ,%	3 .24	3 .26	4 .18	NS
Lactose ,%	4 .14	4 .18	4 .32	NS
Herbage DMI	8 .5^{a}	5 .1^{b}	3 .2^{c}	0 .05
Total DMI	12 .3^{a}	13 .0^{a}	15 .0^{b}	0 .05

a ,Mean values within a row with different superscripts are significantly different ($P<0.05$) .

Conclusions Supplementing milking cows grazing pasture with chopped fresh maize did not benefit milk yield and or affect on milk composition ,but it is appears possible to increase stocking rate because of the substitutive effect ,and consequently to increase production per hectare . Early lactating cows could have better response to chopped fresh maize supplementation ,thus it is suggested to do more research to verify this hypothesis .

Reference

Hernandez-Mendo O . ,Leaver J . D . 2006 . Production and behavioural responses of high-and low-yielding dairy cows to different periods of access to grazing or to a maize silage/soyabean meal diet fed indoors . *Grass and Forage Science* , 61 : 335-346 .