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Effect of the pasture ,in different seasons ,and of the ripening time on the Caciocavallo Palermitano cheese

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Key words : dairy cow ,cheese ,pasture ,production season ,ripening

Introduction Caciocavallo Palermitano cheese is made by processing Cinisara cow milk ,which shows very interesting qualitative characteristics (Bonanno *et al.* , 2004) .The aim of this research was to study the effect of the pasture in different seasons and of different ripening on the yield of cheese after 24 h and on the chemical composition of Caciocavallo Palermitano cheese .

Materials and methods 30 Cinisara cows were investigated to value the effect of 2 different pastures (H and L) ,during a year ,on milk production in a farm situated near Cinisi (Pa) at 540 m a .s .l .The feeding system ,the pasture description ,and the feed collection and analysis are given by Alabiso *et al.* . (2008) .Over the trial the number of cows in production was always constant according to the phase of lactation .Daily milk yield was recorded and massive milk samples ,collected every month ,were analyzed .At the same time ,Caciocavallo cheeses were made by processing separately massive milk coming from cows grazing H and L pastures .Cheese was ripened locally ,without temperature control .Yield of cheese was observed after 24 h .The cheeses were ripened for 30 and 60 days in correspondence at which times the cheeses were sampled using the core boring technique .Cores were frozen at -10 °C until they were analyzed .The milk and cheese data were analysed using ANOVA a factorial model that considered the production season (1 . 5) ,splitting the spring in 2 periods (from 03/01/04 to 04/18/04 and from 04/19/04 to 06/16/04) ,the pasture (1 . 2) ,the ripening (1 . 2) ,and their interactions .All comparisons between means were carried out using Student's test .

Results and discussion The chemical composition of the pastures and of the feeding integration is given by Alabiso *et al.* . (2008) . In total 14 and 7 cheese makings were available from milk produced by the cows grazing respectively H and L pastures . Different cheese variables were influenced by the production season (Figure 1) ,but not by the pasture and the ripening .In spring the yield of cheese after 24 h was greater than the yield usually obtained from Cinisara cow milk .The cheeses made at the end of the spring and in summer lost more weight than those made in the other seasons ,probably because of higher temperatures during ripening ($P \leq 0.001$) .The cheeses made in summer showed a greater EE content than those made in spring (45.76 vs 41.61% ; $P \leq 0.01$) due to the higher water losses .This result did not occur for the cheeses made in autumn and in winter ,because in these seasons ,the fat content in the milk used was greater .A higher protein content in the milk in the beginning of the spring was correlated with a higher protein content in the cheese ($P \leq 0.001$) .The index of maturation (N soluble/ N total) was less than 20% in autumn ,winter and spring and greater in summer (27.8% ; $P \leq 0.001$) .The temperature influenced this variable ,increasing the proteolysis ,but the results showed that in autumn ,winter and spring it is possible to prolong the ripening over 60 days .

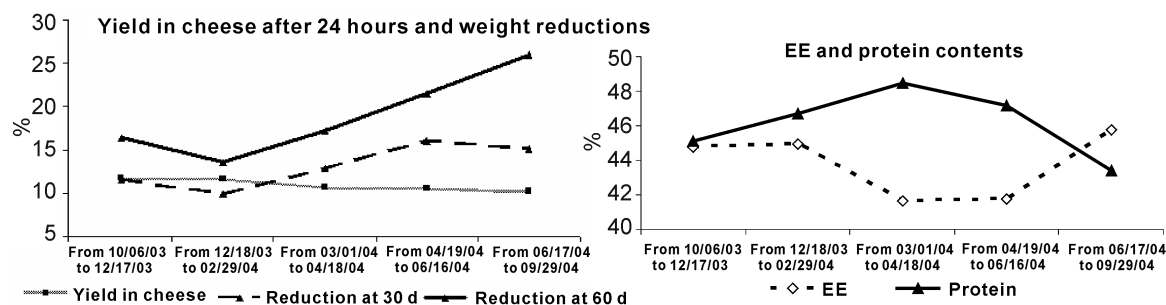


Figure 1 Yield of cheese after 24 hours (%) ,weight reduction (%) ,EE and protein contents (% DM) during the study .

Conclusions Different cheese variables were influenced by the production season .No variables were influenced by the pasture and by the ripening time .Further investigations about the relation between the aromatic compounds in the pastures in the milk and in the cheese produced are necessary .

Reference

Alabiso M . ,Giosuè ,C . ,Alicata , M .L . ,Ilardi , V . ,Giambalvo ,D . ,Maniaci ,G . ,2008 .Effect of the pasture ,in different seasons ,on the milk production by Cinisara cow (This volume) .