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Do cows grazing marshland mind drinking ditch water of questionable quality?

Observation of beef cows in the marshland of Rochefort (France)

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Objectives of the study

On grazing marshes, cattle drink water from the ditches surrounding the fields, which can be of variable quality.

The objective of this study was to check if cattle prefer clean drinking water, shown by a higher usage, particularly by high-ranking individuals.



Material & methods

13 dry beef cows (Maraîchine) were observed in the marshlands of Rochefort (France) from late June to early August in a field (4 ha) surrounding by ditches. Number and location of drinking bouts in the ditches were recorded from 0600h to 2200h during the first four days. Cows were habituated to the presence of a watering trough of 800L. Afterwards, the cows had the choice between drinking the ditch or tap water from the trough, which was placed in the field. Dominance relationships were assessed. The drinking location was recorded during 10 days, between 0900 and 1800h. The total quantity of water consumed by the herd per day was estimated based on the change of water level in the trough during 16 days, 8 of which coincided with the distribution of concentrate, 8 without concentrate.

Results

The cows had a strong preference for one of the three ditches at the start of the study (70% of all drinking bouts), and for ditch water over tap water (median visits 7 vs 3, Wilcoxon, $T=12.00$, $n=13$, $p=0.038$), and of the four cows who either preferred tap water or showed no preference, only one was high-ranking. Tap water consumption was very high during two days, when the preferred ditch had run dry (31l and 63 l/cow compared to 6.5l/cow during the 6 other days without concentrate feeding). Tap water consumption was higher during concentrate-days (20.5 l vs 6.5 l, Mann-Whitney, $W=22$, $p<0.01$), maybe due to the thirst caused by the consumption of concentrate or by the proximity of the feeder to the trough.

Conclusion

Cows preferred ditch-water, and chose tap water mostly when there was no water in their preferred ditch or after consumption of concentrate, with the drinking trough nearby. Fresh drinking water was, therefore, an important resource only when access was easy or alternatives were limited.



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