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The effect of ensiling on variety rank of maize silage

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Official variety trials with maize silage determine quality parameters in fresh (i.e., unconserved) samples. However, farmers use silage as daily component of cattle diet. Quality changes (crude protein and starch content, NDF, organic matter (OMD) and cell wall digestibility (DNDF)) during ensiling have been studied extensively. It is as yet unclear if the variety rank based on the quality of fresh maize samples is similar with the variety rank based on the quality of ensiled maize samples. In our research, eight maize silage varieties were monitored at six harvest dates (from 250 to 400 g/kg dry matter content) in Merelbeke (Belgium). At each harvest date, fresh samples were taken and half of the sampled material was ensiled in laboratory silos for three months. We analyzed the data with Analyses of Variance and concluded that the variety rank was stable at any harvest date if the interaction between variety and ensiling was not significant. Quality changes during ensiling resulted in a change of variety rank depending on the dry matter content at harvest. Reporting variety ranks based on fresh material continues to be a good practice for crude protein and starch content. However, changes in variety ranks based on OMD, NDF and DNDF occurred at a higher frequency. For each quality parameter, a stable variety rank was only guaranteed at the first harvest date corresponding with a dry matter content of 250g/kg.

Biography

Jolien Swanckaert is working on her PhD at Ghent University (Belgium) in collaboration with the Institute for Agricultural and Fisheries Research. With the PhD titled 'Quality of maize in the context of variety admission', the undergoing research will be a scientific support for the official variety trials of maize silage.

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