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Czech J. Food Sci.

**Nowak J., Szambelan
K., Nowak W.:**

**The impact of moist
corn grain
preservation on the
ethanol yield by
simultaneous
saccharification and
fermentation, and on
volatile by-products**

Czech J. Food Sci., 32 (2014): 485-492

We assessed the composition of volatile by-products in raw spirits obtained from moist corn fermentation. The average moisture value of the researched samples was 35.4%. A comparative research was conducted applying simultaneous saccharification and fermentation (SSF) process with *Saccharomyces cerevisiae*. The analysis characterised corn grains after three and six months of storage in

aerobic and anaerobic conditions. The yield of ethanol fermentation was 42.43 and 39.12 l/100 kg dry matter after three and six months of storage, respectively. The storage of moist grain resulted in the reduction of higher alcohols content in the raw spirits. It was observed that the esters concentration decreased after three, but increased after six months of raw material storage. A significant increase occurred in the quantity of aldehydes detected only after three months of the corn storage. The results show that the application of SSF technology to moist corn, allows the production of bioethanol with quality comparable to that obtained with dried grain.

Keywords:

bioethanol; chemical preservation; SSF; volatile compounds

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