



## 水葫芦与玉米秸秆混合青贮的研究

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## Use of Mixed Silage of Water Hyacinth and Corn Straw as Feed Sources

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**摘要** 本试验旨在利用水葫芦(water hyacinth)调制出优质青贮。试验共分24(2×3×4)个处理,每个处理3个重复,以2种水分(约40%和50%)的原料,按3种混合比例(晾晒后的水葫芦与玉米秸秆质量比分别为9:1、8:2和7:3)制成共6种原料混合物,每种混合物中不添加或分别添加2 mL/kg绿汁发酵液、3 mL/kg蚁酸和3 mL/kg四蚁酸铵后进行青贮。常温发酵60 d,测定青贮的pH、氨态氮浓度以及乳酸、乙酸、丙酸和丁酸的含量。结果表明:降低原料水分显著提高了青贮的pH(P<0.05)、显著减少了乳酸生成(P<0.05);随玉米秸秆比例的升高,青贮pH有不同程度的下降;3种添加剂也都不同程度地改善了青贮品质。综合而言,原料水分50%、水葫芦与玉米秸秆混合比例7:3,并以绿汁发酵液作为添加剂的青贮的品质最优。

**关键词:** 水葫芦 玉米秸秆 混合青贮 混合比例 绿汁发酵液

**Abstract:** The study was conducted to produce high quality silage with water hyacinth. It consisted of 24 (2×3×4) treatments with 3 replicates in each, six kinds of mixture were made from ingredients with two moistures (about 40% and 50%) according to three mixed ratios (mass of water hyacinth and corn straw after dried in the sun were 9:1, 8:2 and 7:3). After supplemented with no additive, 2 mL/kg fermented green juice, 3 mL/kg formic acid and 3 mL/kg foraform, respectively, the mixture were fermented. The fermentation lasted for 60 d in normal temperature. Silages were determined for pH, ammoniacal nitrogen (NH<sub>3</sub>-N) concentration, contents of lactic acid, acetic acid, propionic acid and butyric acid. The results showed as follows: the decreasing of moisture of ingredients significantly increased the pH (P<0.05), but significantly decreased the production of lactic acid (P<0.05) in silages; with the increasing of corn straw's rate, the pH of silage decreased at different levels; supplementation of the three additives also improved the quality of silages in varying degrees. In conclusion, the mixed silage with 50% moisture, 7:3 mass ratios of water hyacinth to corn straw and supplemented with 2 mL/kg fermented green juice has the best silage quality. [Chinese Journal of Animal Nutrition, 2011, 23 (9): 1615 -1621]

**Keywords:** water hyacinth, corn straw, mixed silage, mixed ratio, fermented green juice

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