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## The effect of adding biological agents on Alfalfa silage quality

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**Key word** : Alfalfa silage, biologic silage additive, silage quality

**Introduction** The most area of Qinghai's altitude are upon 3000m where alfalfa can't be survival from the winter if planting upon 2800m. Therefore the feed legume is shortage in this area, the livestock's nutrition was limited. However utilization perennial alfalfa as an annual crop can offer important protein nutrition. We studied the effect of adding different biological agents on Alfalfa silage quality.

**Material and Method** The random block design was adopted in this experiment. Fresh Alfalfa which the water content was 80%. Adding 4 kinds of different lactobacillus additives (A made in America, B and C made in Japan, D made in China), 1 kind of enzyme preparation (E made in China), 1 kind of lactobacillus and cellulose enzyme admixture (F made in Japan) rely on the produce reference. Then stored in plastic bag at room temperature 200 days, 60 kg per bag.

**Results** Sense judge according to German DLG silage quality sense grade standard. Adding biological agents to the fresh alfalfa grass, the FA, FB, FC, FD, FE and FF treatments have good sense. Been found the dense aroma smell, stick and leaf structure remained good, the silage color faint changed, no mildew smell. The FCK treatment has strong butyric acid smell, stick and leaf structure canker and metamorphose change color serious and has strong mildew smell. And adding biological agents to the fresh alfalfa grass, the OM content of silages were higher than the raw material ( $p < 0.01$ ), the CP content of silages were lower than the raw material ( $0.01 < p < 0.05$ ), the NDF and ADF content of silages by adding lactobacillus additives were higher than the raw material ( $p < 0.01$ ), the NDF and ADF content of silages by adding enzyme preparation and lactobacillus and cellulose enzyme admixture were lower than the raw material ( $p < 0.01$ ).

**Conclusions** In this study, added Biologic silage additive into silage can help disassemble the planting cell-wall and provide more carbohydrate to advance silage ferment, reduce the content of planting cellulose component and improve the grazing nutrition value, at last bring the improvement of domestic animal production performance, and showed the effect of added enzyme into silage depends on the compose of materials, chemist and microbe, the surroundings condition of silage. Analyzed the effect by different additives synthetically, lactobacillus and cellulose enzyme admixture is the best one, following is enzyme preparation, third are lactobacillus additives.

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