

Nutritive value evaluation of *Medicago sativa* and *Eriochloa villosa* mixed sward in Shenyang

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Abstract: Effect of *Eriochloa villosa* upon *Medicago sativa* field was studied based on evaluating the nutritive value of these two forages mixed sward. *Medicago sativa* and *Eriochloa villosa* were grown in monocultures and bi-species mixture of 65.52%/34.48%, 55.17%/44.83% and 48.39%/51.61% (*M. sativa*/*E. villosa*) in randomly block design in Shenyang, China. The results showed that *Medicago sativa* grown only had the highest CP (17.70%), which was higher by 2.62 times than *Eriochloa villosa* grown only.

Introduction

Grasses and legumes mixed sward is one of the major ways of artificial forage planting in Shenyang area, so choosing the best mixed seeding proportion of grasses and legumes is of great significance to ensure the steady production and high quality of mixed forages. The aim of this work was to choose the optimal mixed seeding proportion by evaluating the nutritive value of *Medicago sativa* and *Eriochloa villosa*.

Materials and methods

Medicago sativa and *Eriochloa villosa* were grown in monocultures and bi-species mixture of 65.52%/34.48%, 55.17%/44.83% and 48.39%/51.61% (*M. sativa*/*E. villosa*) in randomly block design in spring. Forage dry matter (DM), crude protein (CP), neutral detergent fiber (NDF), and acid detergent fiber (ADF) were measured after sampling at early bud. Data was processed by Microsoft Office Excel 2003 and analyzed by Software SPSS 19.0.

Results

Results showed that rate of DM production of *E. villosa* grown only was significantly higher than that of 65.52%/34.48% (*M. sativa*/*E. villosa*) by 3.60% ($P<0.05$). Differences of CP content of all combinations were significant ($P<0.05$), and *Medicago sativa* grown only had the highest CP (17.70%), which was higher by 2.62 times than *Eriochloa villosa* grown only. NDF and ADF of *Eriochloa villosa* grown only were significantly higher than other combinations ($P<0.05$), however, there were no significant differences among the mixed combinations of *Medicago sativa* and *Eriochloa villosa*.

Discussion

JW Fan(2000) showed that the best plan in the pasture was to sowing in seeding rate of grass 75%, but in this study we indicated that growing *Medicago sativa* only had the highest nutritive value. The influence mechanism of the effect on nutritive value of mixed sward needed further research.

Conclusion Producers in the northeast of China may obtain high yield and good

quality forages by growing *Medicago sativa* in monoculture.

References

JW Fan(2000) A study on optimum model for comprehensive management in mixtured pasture of red clover and orchardgrass. Sichuan Grassland, (4): 14-19.