# Preliminary Report on Comprehensive Evaluation of School Lawn Quality

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**Key words :** School lawn , quality evaluation , texture , density , quality of material

**Introduction** There are a few study on the quality and maintenance management of school lawn at present in our country (SHI Ding-sui ,2002) .In 2006 ,a observation of school lawn quality and maintained present situation has been carried out , in order to put forward some reasonable proposals for its rational utilization .

**Natural conditions** Xinjiang Agricultural University in Urumqi of China , located in the middle of the Tianshan Mountains north , belonged to middle temperate semiarid region , continental climate is typical . Gravel quality and desert soil . as it has an Maximum temperature 23 .6℃ , the minimum temperature of -13 .5℃ ,with rainfall 236 mm , the average annual evaporation 2266 mm and non-frost season 176 days  .

**Materials and methods** Sample point 1 : anterior plot of mechanical and traffic college (A) , ornamental lawn (Festuca ＋ perennial ryegrass) ; sample point 2  : anterior plot of Humanistic College (B) , ornamental lawn (Elytrigia .repens ＋perennial ryegrass ＋ creeping bentgrass) ; sample point 3  : anterior plot of Agricultural College (A) , ornamental lawn (Elytrigia . repens) ; sample point 4  after the teaching building No :1 , ornamental lawn (white clover) .

Evaluating the lawn by indicators at every points in the spring , summer and autumn ,lawn color indicators include light yellow , yellow , lime green , green , dark green ,followed by 1 ,2 ,3 ,4 ,5scores correspondingly ; the coverage include 20％ , 20-40％ ,40-60％ ，＞80％ ,followed by 1 ,2 ,3 ,4 ,5scores correspondingly too , texture include (1) leaf coarse and hard , width＞ 5 mm , (2) leaf leather quality , width 4-5 mm ,(3) leaf smooth ,wide 2-3 mm , (4)leaf flexible and smooth , width 1-2 mm , (5)leaf thin and flexible , width ＜1mm ,followed by 1 ,2 ,3 ,4 ,5scores correspondingly too  ; density include strain number/$20 \times 20$cm$^2$＜150 , 150＜strain number/$20 \times 20$cm$^2$＜200 , 200 ＜ strain number/$20 \times 20$cm$^2$＜250 , 250＜strain number /$20 \times 20$cm$^2$＜300 , strain number/$20 \times 20$cm$^2$＞300 , followed by 1 ,2 ,3 ,4 ,5scores correspondingly  ; height include 7-6 ,2-3 ,5-6 ,4-5 , 3-4 cm ,were 1 ,2 , 3 ,4 ,5) , followed by 1 ,2 ,3 ,4 ,5scores correspondingly too . Quality indicators assessed according to weight coefficients were 0 . 2 , All data was measured by fuzzy synthesis evaluation method of turf quality (SUN Ji-xiong , 2004) (A ＝ W × R) , according to scores from high to low , created remark set include four levels as optimal ,good , medium , less poor , and poor .

**Results and analysis** In the remark of lawn at May , D remark was good ; In July ,B remark was less poor , A and C remark was medium , D remark was good ; In September , C remark was less poor , D remark was medium , A remark was good ,B remark was optimal . Look at comprehensively , D was best , followed by A and B , C was more inferior , the lawn of D was used white clover , which have stolons , leaf is wide , the characteristics of lawn have a good performance , the indicators of coverage got a high scores relatively , The Lawn of C was used Elytrigia , which is rhizome and sparse type of turf grass , tillering ability is worse ,resulting in turf coverage and other indicators of quality evaluation scores relatively low ; indicators from the lawn of the evaluation of quality evaluation can be seen , measured by the school lawn growing and basic good management .

**Conclusions** The lawn of school were tested by fuzzy synthesis evaluation method of turf quality , the result indicated :the white clover planting turf was the best , followed by the fescue ＋ perennial ryegrass and ＋ perennial ryegrass ＋ creeping bentgrass , and the worst of all was the lawn using Elytrigia .

**References**
SHI Ding-sui , Abulaiti ,ZHAO Qing etc . (2002) ,The Problems and Conception on Turf Planting in the Northwest Dry and Semidry Region . Journal of Xingjiang Agricultural University 5 ,240-242 .
SUN Ji-xiong ,( 2004) .Turfgrass Science .Beijing : China Agriculture Publishing House (Second Edition) .