

WATER SOLUBLE CARBOHYDRATE CONTENT OF FORAGES IN AUTUMN Kathryn Watts

Rocky Mountain Research & Consulting, Inc., Center, Colorado, USA

The purpose of this study was to document diurnal changes in WSC content of common pasture forages under stressful environmental conditions in autumn.

Three replications of eight types of forage were sampled in the morning (7-9AM) and afternoon (3-5 PM) in late autumn in a high altitude, (2,300 meters) arid, valley after several nights of hard freeze, and cloudless skies. Samples were frozen immediately and analyzed for WSC at a Dairy One, Ithaca, NY. WSC includes sugars and fructan. (1) ANOVA by Agricultural Research Manager 6.0.

| | WSC % of dry matter | | | |
|---|---------------------|---------|----------|------|
| | AM | PM | Increase | |
| Orchardgrass, <i>Dactylis glomerata</i> , var. Potomac, | 27.6 a | 27.9 b | 0.30 c | |
| Perennial ryegrass, <i>Lolium perenne</i> , var. Blend 4-5 | 27.3 a | 33.1 a | 5.83 ab | |
| Timothy, <i>Phleum pratense</i> , var. Climax | 27.0 a | 26.4 bc | -0.60 c | |
| Crested wheatgrass, <i>Agropyron desertorum X A. cristatum</i> , var. Cool Season | 20.0 b | 23.2 c | 3.27 abc | |
| Kentucky bluegrass, <i>Poa pratensis</i> , var. common, | 16.3 c | 23.9 bc | 7.63 a | |
| Smooth brome, <i>Bromus inermis</i> , var. common | 14.7 c | 14.0 e | -0.77 c | |
| Meadow brome, <i>Bromus riparius</i> , var. Paddock | 13.9 c | 18.3 d | 4.43 abc | |
| Alfalfa, <i>Medicago sativa</i> , var. common, | 8.3 d | 10.5 e | 2.13 bc | |
| | LSD (P=.05) | 3.3 | 4.2 | 4.86 |
| | SE | .67 | .85 | .98 |

Means followed by the same letter do not differ significantly.

Grass in autumn may contain levels of WSC well above the levels found in average grass hay, which is 10.7 % (dm) WSC as per the Dairy One database (2). Some species of grass had significantly more WSC in the afternoon. Horses prone to laminitis should not be grazed in autumn after freezing nights.

(1) Available at: <http://www.dairyone.com/Forage/Procedures/default.htm>

(2) Dairy One, Ithaca, NY 2005, Available at: <http://www.dairyone.com/Forage/FeedComp/disclaimer.asp>