

WATER SOLUBLE CARBOHYDRATE CONTENT OF FORAGES IN AUTUMN

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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>