View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by University of Kentucky

University of Kentucky
UKnowledge

International Grassland Congress Proceedings

21st International Grassland Congress / 8th International Rangeland Congress

An Investigation on Total Nonstructural Carbohydrate Trends in Three *Agropyron* Grasses of Golestan National Park in Northern Iran

S. Houshmand Moayed
University of Agricultural Sciences, Iran

M. Mesdaghi
University of Agricultural Sciences, Iran

H. R. Sadeghipour
University of Agricultural Sciences, Iran

Follow this and additional works at: https://uknowledge.uky.edu/igc

 Part of the Plant Sciences Commons, and the Soil Science Commons

This document is available at https://uknowledge.uky.edu/igc/21/1-2/10

The 21st International Grassland Congress / 8th International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

This Event is brought to you for free and open access by the Plant and Soil Sciences at UKnowledge. It has been accepted for inclusion in International Grassland Congress Proceedings by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

An investigation on total nonstructural carbohydrate trends in three *Agropyron* grasses of Golestan National Park in northern Iran

S . Houshmand Moayed , M . Mesdaghi , and H . R . Sadeghipour
Department of Range Management , College of Natural Resources , University of Agricultural Sciences , Gorgan , Iran .
E-mail :srhoushmand@yahoo .com

Key words : *Agropyron* spp . ,total nonstructural carbohydrate , phenological stages

Introduction We examine total nonstructural carbohydrate (TNC) concentrations in three grasses within the genus *Agropyron* : of *Agropyron cristatum* (L .) Gaertner , *Agropyron trichophorum* (Link) Richt . , *Agropyron intermedium* (Host) Barkw . and D .R . Dewey , within Golestan National Park in northern Iran . Our objectives were to (1) compare TNC reserves among root , crown , and rhizoms and (2) compare TNC concentrations during phenological development .

Material and methods Plant materials root , crown , and rhizome were collected throughout growth of three grasses and were dried at 70℃ for 48 hours then ground to pass a 35-mesh screen . The TNC concentrations were determined colorimetrically . Data of TNC concentrations in the root , crown , and rhizome in different stages were analyzed using ANOVA and completely random design .

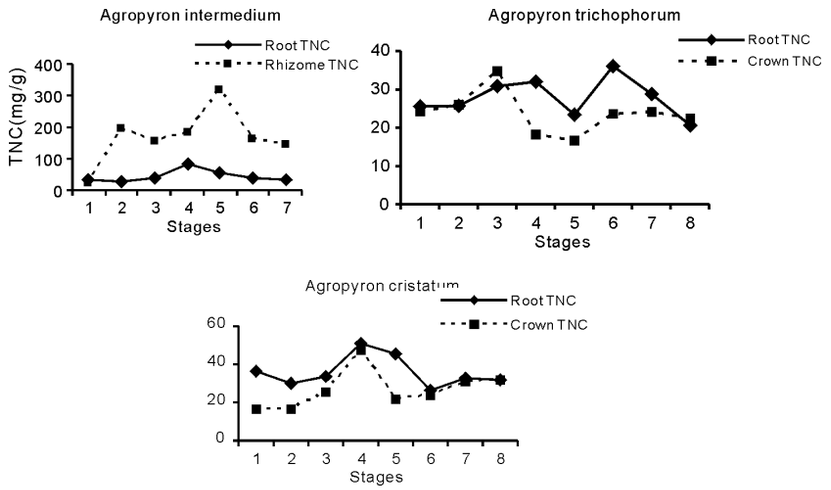

Figure 1 *Total nonstructural carbohydrate concentrations at 8 growth stages . Stages 1 , 2 , and 3 in (a) and (b) , 1 and 2 in (c) are vegetative growth . 4 in (a) and (b) , and 3 in (c) are heads in boot . 5 in (b) , and 4 and 5 in (c) are heads out . 5 in (a) , and 6 in (b) , and (c) are full flowering . 6 in (a) , and 7 in (b) , and (c) are seed ripening . 7 in (a) and 8 in (b) , and (c) are seed dissemination .*

Results As it is shown in Figure 1 . the concentration of TNC are different ($p<0.05$) in root and rhizome for *Agropyron intermedium* . These concentrations are similar for *Agropyron cristatum* , but are still significant ($p<0.05$) . The concentration of TNC are even more similar for *Agropyron trichophorum* , but are not significant ($p>0.05$) .

Conclusions In general , seasonal variation of TNC concentrations in storage organs varying among these closely related grasses with time . Further research will help elucidate grazing intensity and timing that promotes the vigor of these species .

References

Daer . T . and E . Willard . ,(1981) . Total nonstructural carbohydrate trends in blue bunch wheat grass related to growth and phenology . *Range Manage* . 34 : 377-379 .

Holcheck . J . L . , R . D .Pieper . and C . H . Herbel . ,(2005) . Range management principle and practice ,5th Edition . Prentice Hall . Newgerssey .

Hyder . D . N . and F . A . Sneva . ,(1959) . Growth and carbohydrate trends in crested wheatgrass , *Range Manage* . 12 : 271-276 .