



University of Kentucky
UKnowledge

International Grassland Congress Proceedings

XXI International Grassland Congress / VIII
International Rangeland Congress

Dynamic Relationship between Flowering Habits and Podding of 7 Alfalfa Cultivars

Peizhi Yang

Northwest A&F University, China

Quanzhen Wang

Northwest A&F University, China

Tianming Hu

Northwest A&F University, China

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/21/14-1/22>

The XXI International Grassland Congress / VIII 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.

Dynamic relationship between flowering habits and podding of 7 alfalfa cultivars

Yang Peizhi* , Wang Quanzhen , Hu Tianming
College of Animal Sciences , Northwest A & F University , Yangling 712100 , Shaanxi , China
E-mail : yangpeizhi@126.com

Key words : alfalfa , flowering dynamic , podding dynamic

Key points : Flowering habits and podding of seven alfalfa cultivars were observed and compared in order to facilitate scientifically reasonable hybridization and improve seed quality of alfalfa . The results showed that in days with clear weather the seven alfalfa cultivars began to flower at about 07 :00 and stopped flowering at about 19 :00 ; their keels generally opened after 09 :00 and in the greatest quantities within 10 :00 ~ 15 :00 during which their insect pollination peaked . All the seven alfalfa cultivars had clear-cut flowering peaks , i . e . , the full-blooming stages ; they appeared to have a similar podding pattern in which they continuously increased their pods to a certain stable level at the early podding stage and then maintained their pods at this level . Their optimal harvesting periods were the middle ten days of August , and harvesting beyond these periods would result in their seed losses .

Main conclusion The experiment showed that the flower and pod numbers were positively correlated , i . e . , the more the flowers , the more the pods , and the flower numbers did not appear correlated with the seed numbers per pod . The two Chinese alfalfa cultivars (Guanzhongmuxu and Guyuanzihua) were inferior in flower and pod numbers per inflorescence and seed number per pod compared to the introduced alfalfa cultivars (Sanditi , Affinity , Haygrazer , Total and Victoria) .

Good pollination management practices are very necessary for successful seed production , which include timely use of pesticides and timely release of pollinator insects . Proper population density and water conditions are extremely important for flower growth and quality and seed yield , and again the choices of flowers for supplementary pollination and the dosage of pollen collected and the time of pollen collection are the key factors boosting reproductive growth of alfalfa and raising seed yield and quality . In addition , proper harvesting time is the key factor to achieving maximum seed yield .

Summarily , the Chinese alfalfa cultivars were inferior in many respects such as yield and nutrient content to the introduced foreign alfalfa cultivars . Nevertheless , trait expression is the interaction result of genetic and environmental factors and consequentially landrace cultivars are well adapted to local climatic and eco-environmental conditions . As is proved in practice , there are an indefinite amount of germplasms to be exploited . Therefore , it is of great importance to breed new alfalfa cultivars with specific breeding goals by making use of landrace germplasm , integrating foreign germplasm of excellence , and employing conventional breeding method or modern biotech means .

Fund and acknowledgement Ministry of Science & Technology of Peoples' Republic of China , International Cooperation Research Project (No . 2006DFA3360) , funded this work . We are grateful to my postgraduate students Mr . Niu Xiaoping , Miss Hu Xiaoning , and Mr . Song Jianghu .