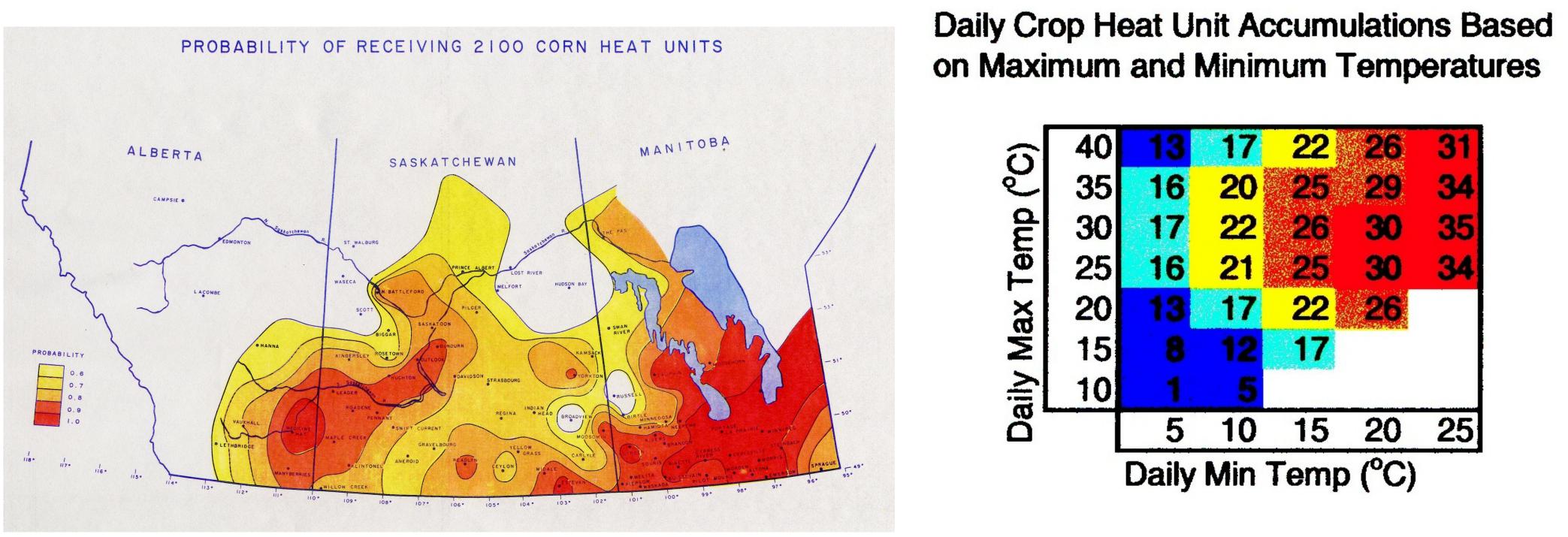
Government of Saskatchewan

The Mapping and Application of Corn Heat Units for Saskatchewan

Introduction

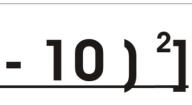
In 1964, Lloyd G. Sonmor (Agriculture Agri-Food Canada, Saskatoon) began the study and application of Corn Heat Units in Saskatchewan. Mr. Sonmor tested Ontario's corn agrometeorology research of Brown et al. In 1976, the first prairie CHU mapping was completed br Dr. David J. Major (AAFC, Lethbridge). The leadership of Dr. Robert I. Hamilton (AAFC, Brandon), in the 1970's and early 1980's, focused the science that advanced today's corn industry on the prairies. This poster uses the latest CHU equation in describing the largest number of temperature reporting sites in the most recent twenty five year data set. Warm season crops are numerous and mapping CHUs can also help in describing the production risk of other crops, i.e. soybeans, that can have greater adaptation through breeding and global warming.



The probability of receiving 2100 CHUs on the prairies (Major, et al, 1976).

$CHU = [1.8 (Tmin - 4.4) + 3.3 (Tmax - 10) - 0.084 (Tmax - 10)^{2}]$

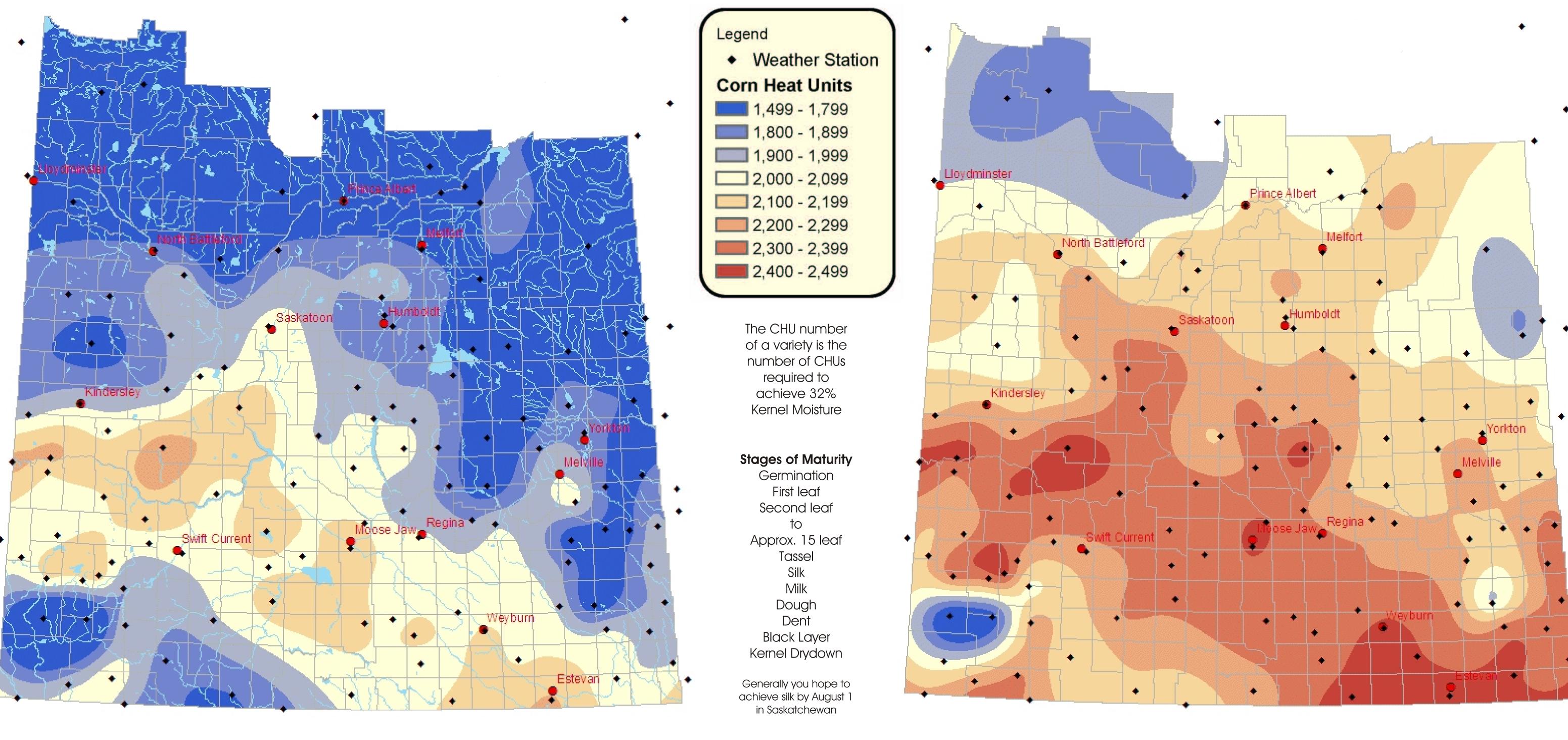
The seasonal CHU was calculated by a sum of all the daily CHUs from May 15 until the first -3° C frost. Data from 1980-2005 was used. The 9/10 is the third lowest seasonal CHU.





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Saskatchewan Accumulated Corn Heat Units



90% Confidence for Grain Production



Five Hundred kernels c be harvested for every kernel seeded from a variety that suits your local environment. Grain yield has increased over 50% in the last 25 years on the Canadian Prairies



If you do not receiv enough CHUs, kernel formation will be incomplete and you will not achieve high Energy levels. A TDN of 86% for grain is an achievable

L. Bohrson¹ and K. Olfert²



Average Accumulated CHUs for Silage Production



the plant must have achieved sufficient maturity (black layer) and moisture. Safe storage for grain corn is 14% M.C. Artificial drying will be require

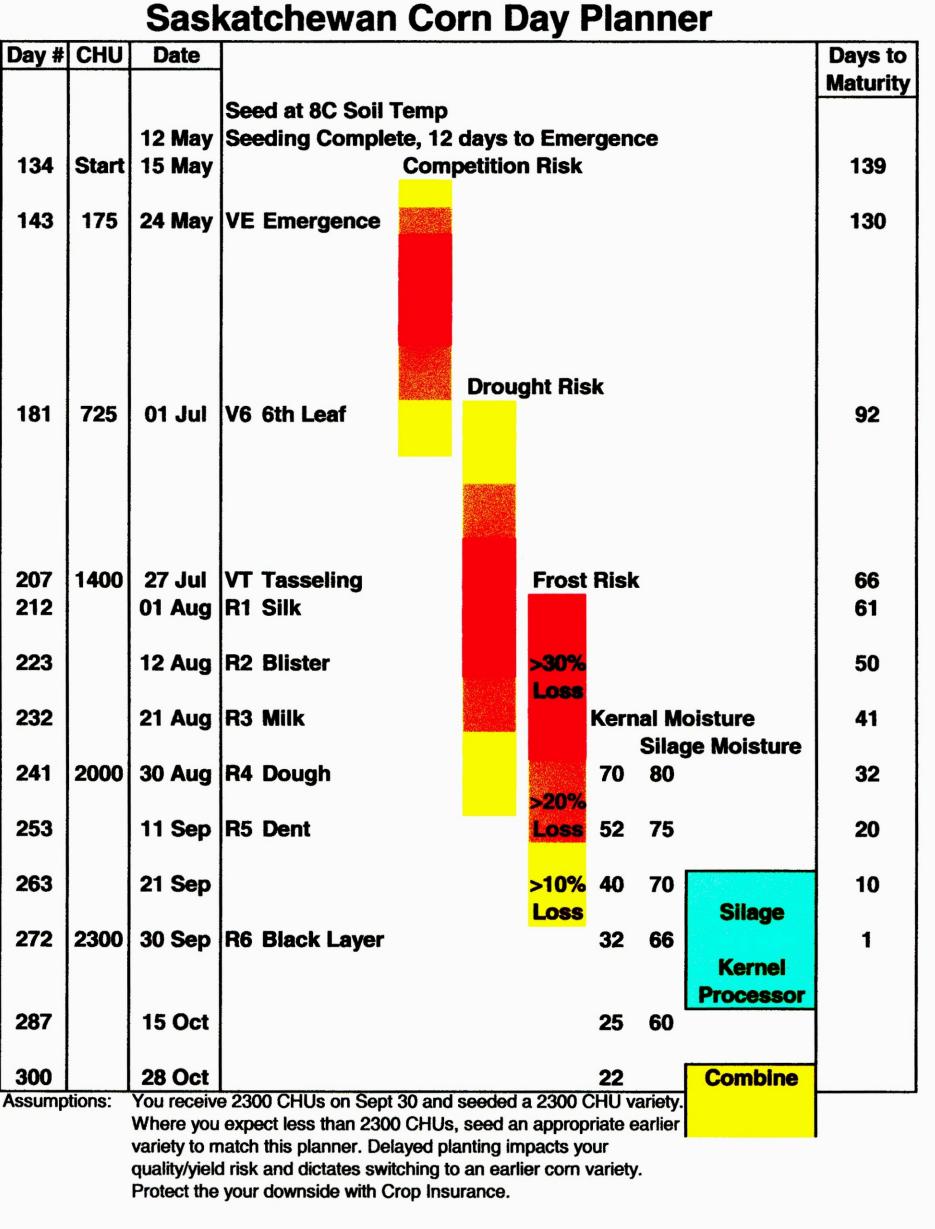


Great cob development delivers corn silage of ove 70% TDN. Spring delays and/or an early fall costin up to 200 seasonal CHUs less than planned, will still allow the opportunity for good silage quality





Microclimates of higher CHUs can be achieved by a south facing slope, warm sandy soils, shelterbelts, longer day lengths, and uniform air/water drainage.



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