

December 21, 2012

PLANT REACTION TO DROUGHT

Recent research at UNL indicates that plants subjected to drought actually “remember” this stress from day to day, learning to adjust their responses to better cope with it. This discovery by UNL plant scientists could someday aid development of more drought-tolerant crops.

The plant researchers worked with was *Arabidopsis*, a member of the mustard family. What they learned was this particular plant bounced back more quickly when it was dry or dehydrated again on the next day. Unstressed plants wilted and lost water from their leaves faster than previously stressed plants.

So how can a plant remember it was dry the day before and make a response inside the plant to handle drought better? The research team found that previously water-stressed plants respond to the next day’s dehydration by increasing transcription of a certain subset of genes. During the evening when stress eases, transcription of these genes returns to normal levels, but the next day the plants remember their transcriptional response to stress and induce these genes to higher levels.

The research indicated the *Arabidopsis* mustard plant forgets the previous stress after five days of watering, though that memory time may differ for other plants. This is the first instance of transcriptional memory found in any life form above yeasts.

Maybe scientists will learn how to modify the instincts in plants to maintain or improve productivity during drought. What if this mechanism can enhance drought resistance in corn? While promising, practical applications of these findings in agriculture are years away.

DROUGHT MANAGEMENT PROGRAM

Current forecasts suggest the state will not see any significant increase in precipitation this winter to reverse the current drought trend. Drought conditions have taken a toll on our pastures. UNL Professors Dr. Bruce Anderson and Dr. Jerry Volesky will discuss things producers should consider in managing forage resources this year if drought conditions continue. This program will be aired on NET2 at 7:00 p.m., Central Time, Thursday, January 24th. If you do not receive NET2, the program will be available at the UNL beef website: <http://beef.unl.edu>.

NATIONAL NO-TILL OR BUST

There are a couple seats available with our Southeast Nebraska group attending the National No-Tillage Conference in Indianapolis, Indiana, January 9th - 12th. Attending a regional or national conference can be a good experience for area farmers to meet new people, networking and getting new ideas. The theme is “Powering Up Your No-Till System.” The 2013 program features 18 general-session speakers and 25 breakout sessions by topic. Let me know by Monday, December 31st, if you are interested in coming along. There’s a group discount if there are 10 in our travel group. More information on the conference is at: www.no-tillfarmer.com.

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