Gulf Coast Fruit Study Newsletter

Volume 22, Issue 2

Edited By: Ethan Natelson

May 13, 2008 Meeting

Planning Committee:

Carol Brouwer

Anthony Camerino

Carol Cannon

Gregory Carrier

Yvonne Gibbs

George McAfee

Doug McLeod

Rick Matt

Ethan Natelson

David Parish

Victor Patterson

Bob Randall

Next Gulf Coast Fruit Study Meeting

Our next meeting will be on May 13, 2008 at 7:00 P.M. Dr. Bob Randall will discuss long-term winter weather patterns and agronomist Wayne Thompson will discuss land management issues.

Contact Us! Harris Cty Extension Service 3033 Bear Creek Dr. Houston, TX 77084-4233 Phone: 281/855-5611 Fax: 281/855-5638

THE COMPLEXITIES OF CHILLING REQUIREMENTS

In our program for the May meeting, Dr. Bob Randall will discuss the weather patterns in the Gulf Coast region over the last several years and its effects on fruit production. The chill requirement for bud break is a very complex subject that often frustrates home gardeners who read of a particular cultivar's inviting low chill requirement in a gardening catalogue, and which suggests it should work well in their area, and then are disappointed in a failure of the plant to flower. The chill requirements seem most straight forward and widely applicable for peach. From Dr. Byrne's work at Texas A&M, our local chill is directly proportional to mean January temperatures (Figure 1), and directly relates to hours accumulated between 32 and 45 degrees F. Thus, in our usual 450 chill hour year, a 150 chill hour peach will flower early and a 650 hour peach may not flower at all.

The situation appears to be far more complex for apple and pear, for example, and is influenced both by cultivar, rootstock, and the effects of local climate induction of a mild or deep dormancy. In John E. Jackson's book, Biology of Apples and Pears, he points out that the Anna and Dorsett apples that we are familiar with, do not actually achieve a full dormancy (endodormancy) as do other apple cultivars. Thus, they can break bud with a very short sequence of warm weather. In tropical Zimbabwe, Anna can have 2 crops each year without any defoliation of the tree. For Anna, this lack of ability to achieve deep dormancy seems to be a dominant trait and is passed on to 50 % of its seedlings. By contrast, in Florida and in Houston, the Ya Li and Tsu-Li Asian pears have only around a 360-480 chill hour requirement, yet when these pears are grown in Oregon, their chill requirement jumps to 900 and 600 hours, respectively, because they enter a deeper state of dormancy at that higher latitude.

With pome fruits the rootstock used will also modify the chill requirement, and, as a general statement, dwarfing rootstocks tend to reduce the chill requirements of certain cultivars. Jackson cites the fact that the **Bartlett** pear when grown on *P. commununis* (typically **Bartlett** or **Winter Nelis**) has considerably higher chill requirements than when grown on *P. calleryana*, the low-chill but non-dwarfing rootstock often used in the South (in this instance, an interstem is required because Bartlett is not directly compatible with *P. calleryana*). We have noticed this year that our **Tennousi** pear flowers earlier on two different varieties of dwarfing quince rootstock, and may be best suited for our area with a *P. calleryana* rootsystem with a quince interstem.

Jackson also cites experimental work that Dr. Leon Atlas practiced by selecting the earliest to germinate seeds of *P.calleryana*, for example, for rootstock selections. These early germinating seeds will produce seedling rootstock that will lower the chill of the grafted scion. By contrast, using the latest to germinate seeds will increase the chill requirement if their seedlings are used as the rootsystem. Thus, our best bet here in the Gulf Coast area is a low-chill cultivar grafted on a low-chill rootsystem. However, the complexities of the issues bring us back a to trial and error system in selecting the best-producing cultivars for a low-chill climate, such as ours. You have to learn by others' mistakes, and successes, which is why we think our Gulf Coast Fruit Study Group is a worthwhile endeavor.

FIGURE 1: Relation of Chill Hours to Mean January Temperature

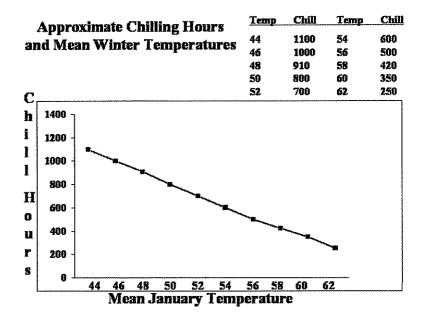
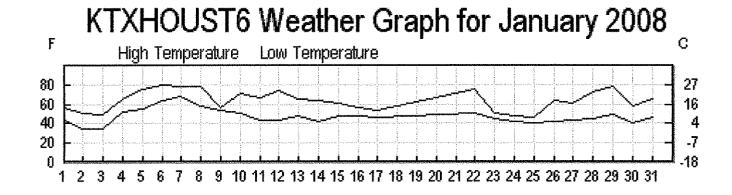


FIGURE 2



Source: wunderground.com

PEACH TOUR

We have a peach tour scheduled for Saturday, June 14, 2008 at the E&B Orchards, 28268 Clark Bottom Road, Hempstead, Texas 77445, www.eandborchards.com (979-826-6303). We will meet in the Harris County Extension Service parking lot at 3033 Bear Creek Drive, Houston, Texas, at 7:00 a.m. on June 14, where we will have a county bus available for transportation to the orchard. Seating on the bus is limited so, for those of you who are interested, please fill out and return the sign-up form. Please note lunch will not be provided – please bring your own sack lunch. However, drinks will be provided. We will have the opportunity to pick peaches at the orchard. Remember, it is first come, first served, so please date your forms. If you are a couple, we must have both names – this is a requirement for the bus services.

SIGN-UP FORM Peach Tour June 14, 2008 E&B Orchards, 28268 Clark Bottom Road, Hempstead, Texas

Name:	
Address:	
Phone:	
NAME AND PI	HONE NUMBER OF EMERGENCY CONTACT PERSON (REQUIRED):
Name:	
Address:	
Phone:	
Send to:	Harris Cty Extension Service 3033 Bear Creek Dr. Houston, TX 77084-4233 Phone: 281/855-5611 Fax: 281/855-5638 Attn: Yvonne Gibbs
DATE:	

HARRIS COUNTY
MASTER GARDENER ASSOCIATION
3033 BEAR CREEK DR.
HOUSTON, TX 77084-4233

CHANGE SERVICE REQUESTED

May 13, 2008 Meeting

Our next meeting will be on May 13, 2008 at 7:00 P.M. Dr. Bob Randall will discuss long-term winter weather patterns and agronomist Wayne Thompson will discuss land management issues.

The Texas A&M University System

NON-PROFIT ORG.
U.S. POSTAGE
PAID

HOUSTON, TEXAS
PERMIT NO. 9216

Educational programs of the Texas Cooperative Extension are open to all people without regard to race, color, sex, disability, religion, age or national origin.

