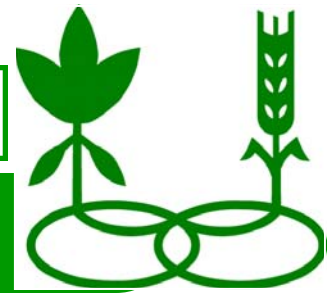


# Renwood Farms Seed



## 2013 Wheat Update: Heat Units and Seed Depth

Crops respond to the amount of heat they receive. We measure this response with heat units, collectively called Growing Degree Units or GDU. Knowing when critical plant functions normally occur allows growers, especially with large acres, to plan their work accordingly.

In this table, the GDU are listed for wheat planted on October 15 in Central VA. Wheat planted after this date will not have as many GDU while wheat planted prior to this date will have more GDU. Our average is 881 GDU on Jan. 20.

Crop Year	YTD GDUs as of 01/20
2004	817
2005	963
2006	760
2007	950
2008	912
2009	958
2010	893
2011	794
2012	1079
2013	913

In January, we average four GDU per day so every 100 GDU translates into 25 days earlier or later. Compared to 2012 (very warm winter), the 2013 wheat is about 40 days later.

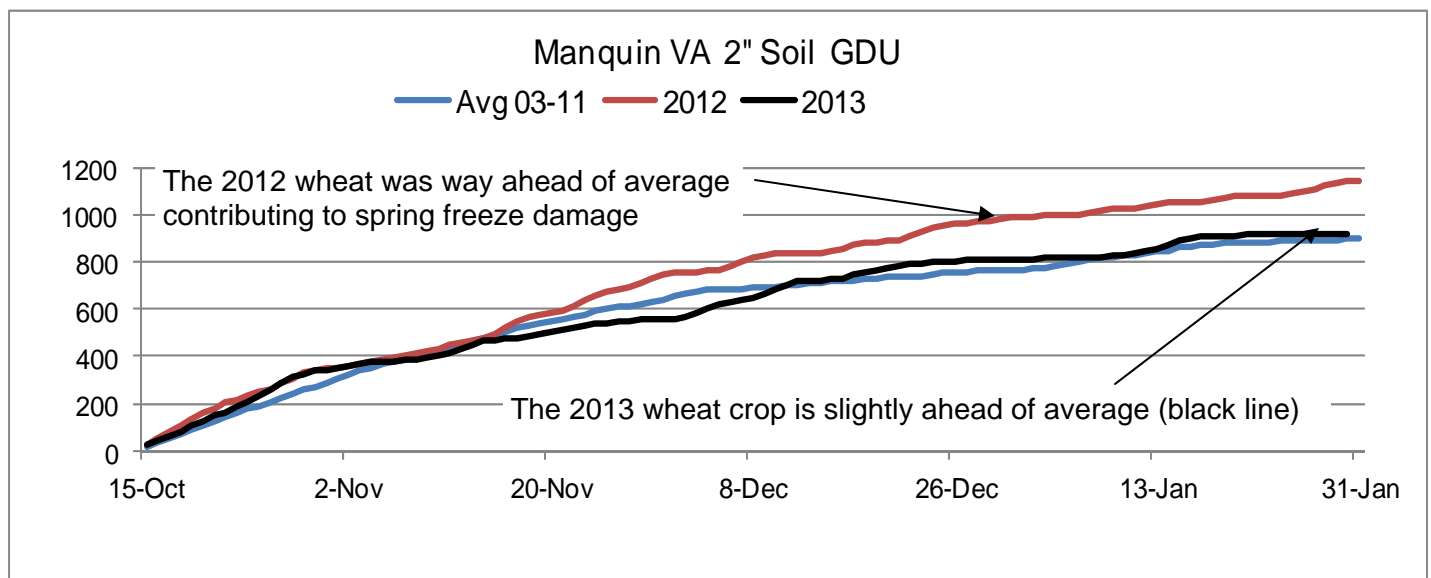
Note that the two highest VA state average yields came in 2006 (68 bu. /acre) and 2011 (71 bu. /acre) with the **least amount** of GDU on Jan. 20. It helps our wheat when the temperatures get cold and stay cold.

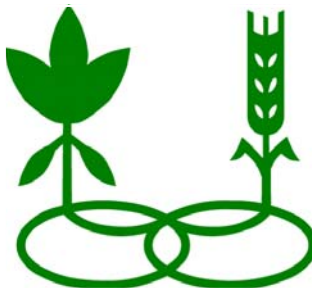


One tiller with three healthy and whole leaves plus the growing tip

When wheat reaches between 900 and 1,000 GDU, it is time for the winter nitrogen topdress. The amount of nitrogen applied now depends on the number of tillers. A tiller has to have three whole and healthy leaves or it is just a growing tip/ potential tiller (see photo above). Less tillers means more nitrogen, more tillers means less nitrogen. The average rate of nitrogen is between 40 and 60 lbs. /acre for this application.

The wheat will reach GS30 (or GS5) between 1200 and 1400 GDU assuming adequate vernalization. At GS30, the last nitrogen topdress is applied.





## 2013 Wheat Update: Heat Units and Seed Depth

### Renwood Farms Seed

Jeff and David Hula, Customer Service and Sales: (804) 829-2450

Paul Bodenshtine, Agronomist: (804) 314-7463

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<http://www.renwoodseed.com>

## Wheat Seed Depth

We have had calls about wheat turning red and purple soon after the brief warm-up from Dec. 16th to 21st. The top photo shows this discoloration.

Most (all?) of these wheat fields were planted less than 1" deep. In some cases, the wheat was planted at the proper depth but because of the dry fall, especially in worked ground, the soil settled and push the seed up so the actual germination depth was less than 1".

According to the literature, the wheat seed crown forms about 1/2 inch below the soil. There is an underground stem, called the mesocotyl or sub-crown internode which separates the seed from the crown. In discolored fields, the seed piece is right at the crown indicating the seed depth is at 1/2 inch or less.

In the bottom photo, the plant on the left has a mesocotyl about 1/2 inch from the seed piece to the crown, indicating a seed depth of 1". The plant on the right shows the seed piece located right at the crown indicating a seed depth of 1/2 inch.

When we get wide temperature swings, shallow-planted seed doesn't know whether to grow or stay put since there is little soil buffering the temperature swings. Root growth is less developed with shallow-planted seed so nitrogen and sulfur can be limiting as can low soil moisture. Earlier-planted wheat is more dramatic than later-planted wheat since the wheat is further along and more sensitive to colder temperatures.

Dry soils, late nitrogen topdressing and/or cold spring temperatures will contribute to lower yields with shallow-planted seed. Timely nitrogen topdressing, adequate soil moisture and warm springs will help reduce the impact of shallow seed depth.

