

## **HEAT UNITS (DD 60'S) AND COTTON GROWTH STAGES**

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### **Abstract**

Virginia is the furthest north where cotton (*Gossypium hirsutum* L.) is successfully grown in the U.S.A. Cotton growth and physiological development is temperature dependent and requires a certain number of heat units (HUs). Temperature is an environmental factor that influences plant growth. Heat accumulated in a day is measured in heat units (HUs) or Degree days (DD 60s). In most cases the development of cotton can be predicted by measuring HUs from date of planting. However, factors such as plant varieties, soil conditions, location and cultural practices should be taken into account. The range of days and the heat units required to reach the key cotton developmental stages in Virginia are generally similar to those documented for other cotton growing states. However, the HUs required from pinhead square to first flower appears to be higher than the accepted range. Heat units required from square to white flower in Virginia were 609, 498, 566, and 422 for 1994, 1995, 1996, and 1997, respectively compared with 300 to 350 documented values in the literature. With HUs accumulation of 1900 or less, reasonable yields can be expected if moisture is not limited in July and August. The least HUs, the lowest August rainfall and the highest yield were obtained 1997 compared with the previous four growing seasons. Thus, HUs nor rainfall can be the only predictor of yield potential. Additional research based information is needed in order to fully understand yield determining factors in Virginia.