

## **Frontier Analysis, Ltd**

### **TECHNICAL SERVICE RESPONSE NO.: UT074**

**Subject:** Analysis of a Blackened Hull from a Wheat Seed-Head in a Crop Formation (near Hoeven, Holland, August 2, 2010)

**Date:** April 1, 2011

**Requested By:** Nancy Talbott  
BLT Research

**Reported By:** P. A. Budinger  
Analytical Scientist

### **Background/Objective:**

A wheat crop formation was “seen” by Robbert van den Broeke in a vision, as it was occurring. This formed on August 2, 2010 in Holland. Roy Boschman went to the location described by Robbert as soon as it was light. He indeed found a formation. He also noted some of the seed-heads appeared to be partially burned. These were at the very end of a partially completed ring, or “arc”, which was part of a formation. The objective is to determine whether the cause of the blackening was burning or ustilago fungus. Following are photographs with a graphic of the formation, the formation, and the blackened seed-heads.



### **Conclusions:**

- The analysis shows the seed-head top is burned. The heat it experienced appears to be localized because the bottom part of the seed-head is normal. The source of the heat is unknown. A logical speculation is that it was involved in the creation of the crop formation. The source was either hot, or there was an energy field around it that induced the seed hulls to burn.

**Procedure:**

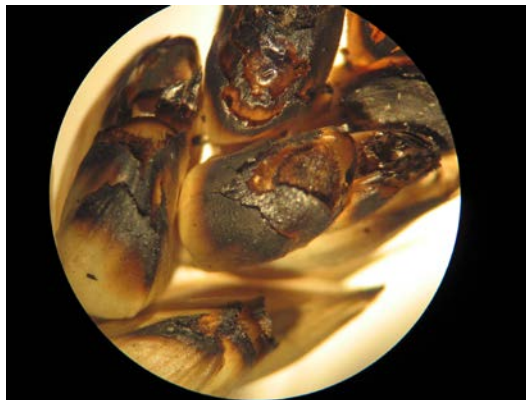
The seed head sample was received in a 60ml glass bottle on March 14, 2011. Following is a photograph of the sample.



Infrared spectra were obtained from both the blackened and normal sections of the seed head. The spectra were obtained of the sample on the Thermo Electron Avatar 360 spectrometer using the Smart Herrick diamond-sampling accessory. Microscope photographs were taken using a Canon A520 digital camera interfaced to a Leica GZ6 stereomicroscope.

**Results:**

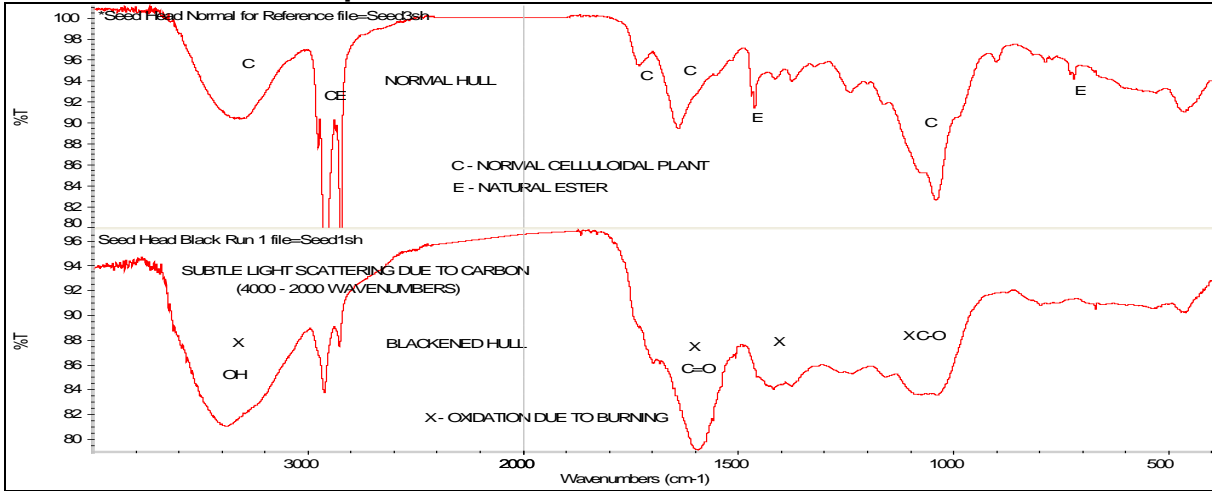
A microscope photograph of the seed head shows definite signs of burning. The hulls are charred and partially burned away. The photograph follows.



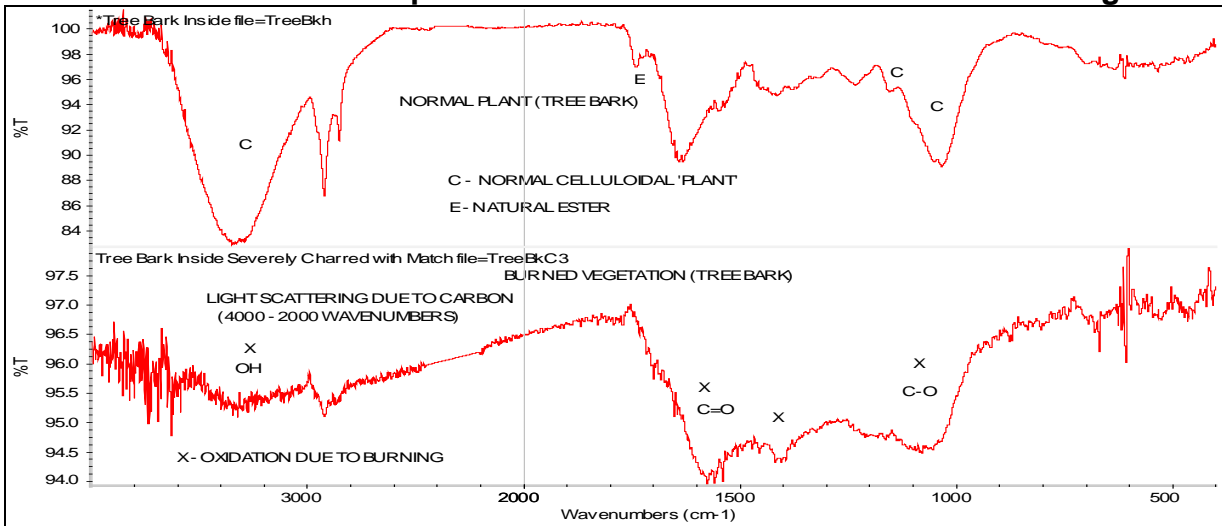
Infrared analysis of the blackened end of the seed-head also shows it has been burned. Spectra of the normal hull and the blackened hull were compared. The spectrum of the blackened hull is quite different from that of a normal appearing hull of the seed-head. The normal hull spectrum is typical for plant-derived substances, i.e. it shows a predominance of cellulosidal structure and some natural long chain ester. The spectrum of the black hull shows typical oxidation bands resulting from

burning. There is some subtle light scattering from 4000 to 2000  $\text{cm}^{-1}$  which is characteristic of carbon, a product of burning. This spectrum compares to a reference spectrum of burned wood. Following are spectra of the blackened hull and the normal hull. References of normal plant (wood bark) and burned plant (wood bark) are included for comparison.

### Infrared Spectra of a Blackened Hull and a Normal Hull



### Infrared Reference Spectra of Normal Plant and Plant After Burning



File: UT074

Phyllis A. Budinger