

Crop Formation: Lehi, Utah, 1997

Laboratory Code: KS-04-01

Material: Barley stems and heads (*Hordeum vulgare*).

Formed: May 23-24, 1997.

Sampled: By Tod and Lisa Weaklend, on May 26, 1997.

Formation Characteristics: Randomly downed patches of plants (see Fig. 1)

Relevant Findings:

- 1) Significant node length expansion in samples taken from downed plant areas. Expansion levels ranged from +23% to +32% relative to the upright controls taken outside the area of downed plants.
- 2) Significantly altered biochemical respiration patterns in the leaves from downed, green plants taken from the formation as compared with normal control foliage.

Results and Discussion:

Eleven sample sets were submitted, each containing 20 to 40 green plants. The combined data from four control samples (N=146) gave a mean node length of, NI = 3.50 mm with an s.d. of 0.57 mm. The mean node length change relative to the control mean, was entered on the sampling diagram in Fig. 1 attached. The four controls gave a +7% to -3%, random scatter about the overall mean, whereas most of the downed plants were in the range of +23% to +32%. Sample S7 appears to be an exception; however it may have been mislabeled. In Fig. 1 it is indicated as "S7 down", but this sample appears to be taken in an area of upright plants, similar to the area where S2 was taken?

Homogenates of leaf tissue were examined with the redox method¹ for the purpose of determining whether the crop formation energies had altered the biochemistry of respiration. The data below were obtained from apical, green leaves. All four samples were examined in a single sequential testing conducted over an 80 min. interval

Table I.
Comparison of redox ratios in crop formation samples, with those taken from controls.

Sample Group	Combined Redox Data		N Tests
	Rr	s.d.	
Controls C2 & C4	1.074	0.334	24 -----
Downed S1 & S4	0.503	0.275	24 (P<0.05)

The R_r values for the downed plants have a significantly lower ratio than the controls. This means the crop formation energies have significantly reduced the output of free radicals in the plants relative to the normal controls. This finding combined with the node expansion data clearly demonstrate that vortex energies influenced the crop formation plants.

Nancy Talbott
Cambridge, Mass.

W.C. Levengood
Pinelandia Biophysical Lab.

John A. Burke
Am-Tech Lab.

Office:

P.O. Box 127
Cambridge, MA 02140

Phone: 617 492 0415
Fax: 617 492 0414

Reference

- 1) Levengood, W.C., *Redox-responsive electrodes applied during plant morphogenesis*. Bioelectrochem. & Bioenergetics, **19**, pp. 461-476 (1988).

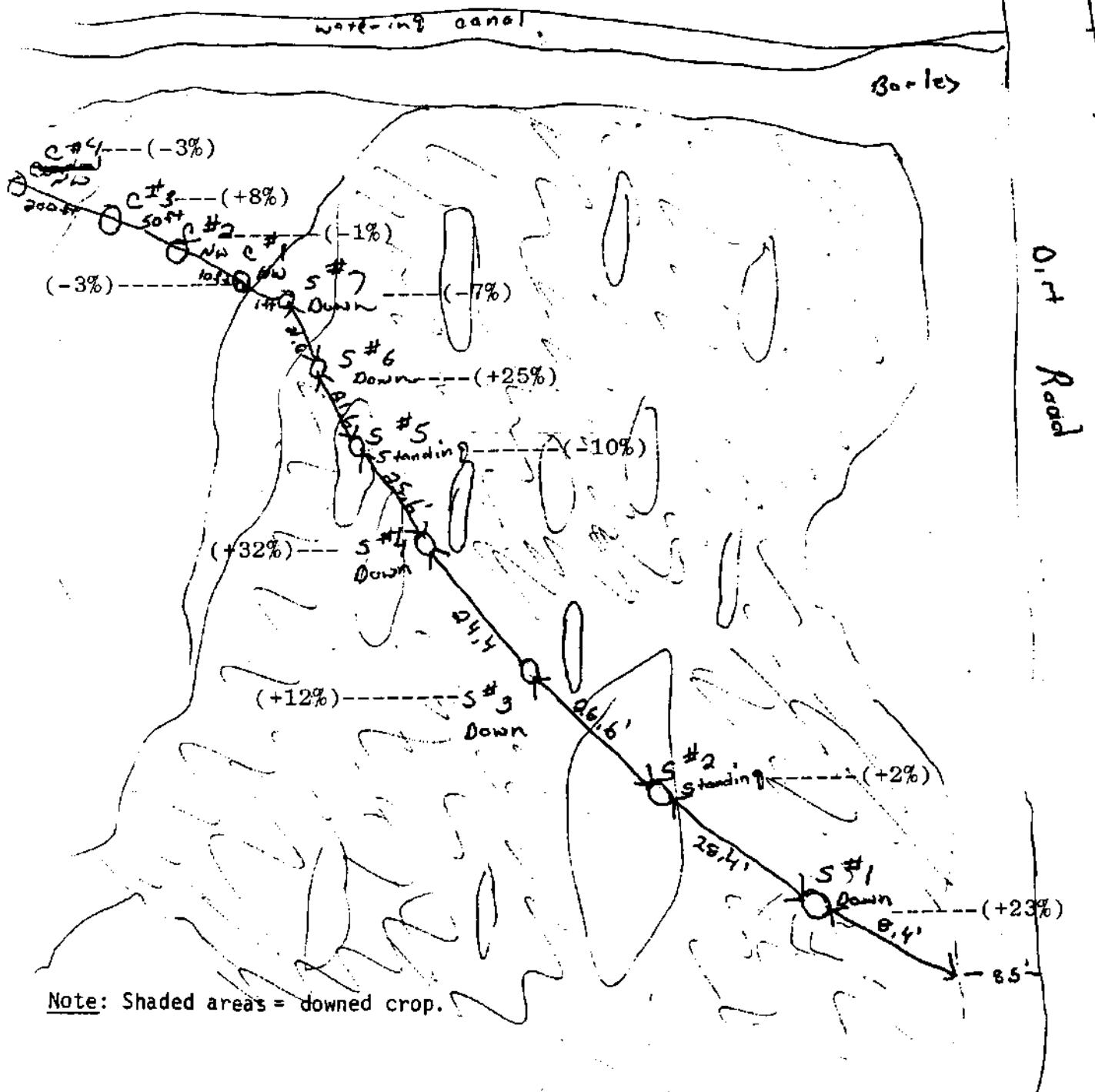


Fig.1 Wealend sampling diagram with superimposed node length data. Each value is the percent change in node length change relative to the mean of all the controls: