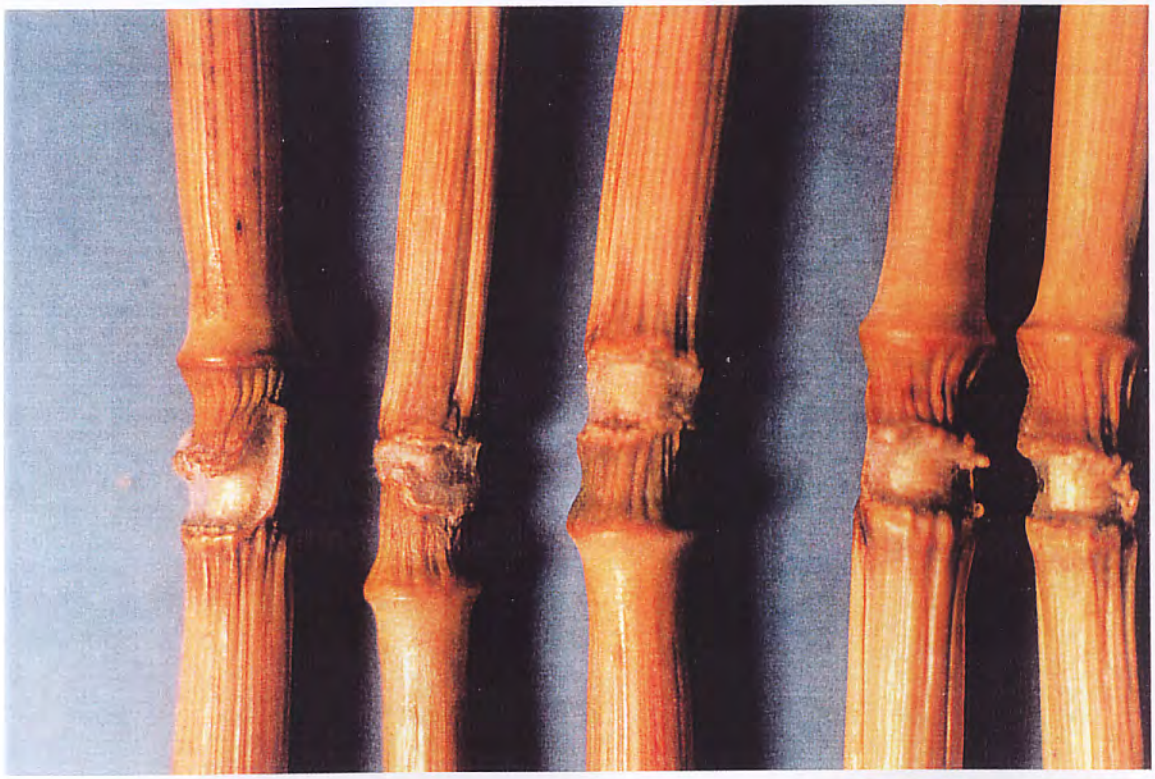
BLT Research Team
Box 127
Cambridge, MA 02140 (USA)
ph: 617/492-0415

June 28, 1997
Salem, OR

LAB REPORT #97

GEOMETRIC FORMATION & ASSOCIATED RANDOMLY DOWNED CROP - SALEM, OREGON (1997)

Crop: Wheat Formed: June 28, 1997 Photos: M.A.Koch, C.Pedersen & Ardinger
Primary results: an energy "spillover" effect was found in standing plants sampled outside the visibly-downed crop, where node length increases decreased as a function of distance from the edges of the geometric event. Expulsion cavities in plant stem nodes were also found in 55% of samples.



Crop Formation: Salem, Oregon 1997

Laboratory Codes: KS-04-51, KS-04-52 and KS-04-54
Location: Salem, Oregon
Material: Wheat Plants *(Triticum aestivum)*
Formed: June 28, 1997 **Sampled:** July 7,9 & 18, 1997
Sampled By: Mary Ann Koch, Carol Pedersen and Keith Ardinger
Formation Characteristics: "Double Horseshoe" shape about 64 ft. diameter,with associated areas of non-geometrically downed crop (see Fig's 1,2 & 3)

Relevant Findings:

1)- an energy spill-over effect was noted in normal, upright plants sampled outside the visibly downed formations. It is shown that the node length changes in the upright plants follow a theoretical model (presented in 1994) which utilizes the well known Beer-Lambert principle describing the absorption of electromagnetic energy by matter[1].

2)- significant node length expansion was noted in 83% of the 29 sample sets taken within the geometric formation.

3)- of the 29 sample sets from the geometric formation 16 (or 55%) contained expulsion cavities.

4)- in three sample sets taken in irregularly shaped patches the maximum node expansion was +112%. One sample set also contained expulsion cavities (20%).

5)- the Beer-Lambert correlation, the presence of significant node expansions, and the presence of expulsion cavities clearly demonstrate that the formation involved a plasma vortex type of energy.

6)- in addition, the stage of plant maturity and the precise pattern of node changes in the upright plants outside the formations firmly support the external energy concept. The Beer-Lambert node length correlation in the upright plants essentially eliminates the possibility of any significant gravitropic influence[2] or human intervention.

7)- thorough seed germination studies showed that seed development was not effected by the formation energies; this may be due to the fact that the formation occurred at a late development stage and the seeds were near maturity.

(8)- based on previous work the conclusion was reached that the Oregon formation involved two interactive vortex systems with energies extending far outside the confines of the visable, downed regions.

Results and Discussion:

I.) Samples Taken From Irregular Shaped Patches (Mary Ann Koch , 7/18/97)

Four sets of samples were taken about 20 days after the formation occurred. The node lengths were recorded from sets of samples which contained 15-20 plants each. The single "control" was taken only four feet outside one of the irregular formations. This 4-ft. sample, plus two of the samples taken inside the irregular downed formation, disclosed node expansions ranging from +25% to +55%; however, since the samples were taken around 20 days after the occurrence, we know from our 1997 simulation experiments[2] that this degree of node expansion can be accounted for by gravitropic effects. The fourth sample in this group had a node expansion of +112%, plus the occurrence of expulsion cavities. Since this degree of node expansion is over two times the level expected from gravitropism, it is clear that vortex energies were involved.

The usual germination tests were conducted and there were no significant seedling growth differences in these sample sets.

II.) Samples Taken Within the Geometric Formation (Keith Ardinger, 7-7-97)

A total of 29 sample sets were taken within and just outside the geometric formation, with each set containing 15 to 20 plants each. Of these, 24 or 83% disclosed node expansion levels in the range of +31% to +47%. Since these were collected about nine days after the occurrence the expansions are well outside the level of expansion (around +10%) expected from gravitropic effects[2]. In addition, 16 sets or 55% of the samples contained expulsion cavities, another feature unique with crop formations (see Fig. 4).

Complete germination tests were conducted. No significant seedling growth changes were observed.

III.) Sampling at Precise Distances From the Geometric Formation (Carol Pedersen, 7-9-97)

During the analysis of the node length data from 12 sets of samples it became quite apparent that there was a systematic decrease in the node length values, with distance from the formation. Since a cursory examination of the node expansion data in this series of samples seemed to relate very closely to patterns we have examined in other crop formations, we decided to apply a more rigorous analysis to the data.

In 1994 we formulated a theoretical model [3] by which we could examine the empirical node expansion data in relation to a fundamental principle of physics dealing with the absorption of electromagnetic energy by all matter or, as applied here, by plant tissue. This well-known concept is known as the Beer-Lambert principle and is applied in many areas of physics and chemistry[1].

In general this relationship it is expressed by,

$$I = I_o e^{-acd} \qquad [1]$$

where I is the intensity of radiation striking the plant, I_o the intensity of the radiation at the source (within the geometric formation), a is the absorption coefficient of the intervening media (in this case air), c the concentration of absorbing molecules (air and water vapor) in the path distance d between the energy source and the plant stem node. Equation [1] may also be expressed as a fraction of the radiation received by the plant as,

$$I/I_o = e^{-acd} \qquad [2]$$

In this model we make the assumption that the stem node expansion denoted here by N_L - the mean node length in a given sample set, is directly related to the fraction of the energy absorbed into the plant node tissue, that is,

$$N_L = b' (I/I_o) \qquad [3]$$

where b' is the proportionality constant. From Equation [2] we now have,

$$N_L = (b') e^{-acd} \qquad [4]$$

and taking the logarithm of both sides of Equation [4] gives the very useful expression,

$$\ln [N_L] = -acd + b \qquad [5]$$

where b is the intercept constant. Since a and c are also constant, this allows us to predict that if the node expansions are being produced by the absorption of electromagnetic radiation then there should be a linear correlation between the logarithm of node length, ln $[N_L]$ and the distance d from the radiation source. Since major node alterations and expulsion cavities occurred in the large geometric formation, this is assumed to be the primary origin of the radiation.

In Fig.5 are the node length data from the Pedersen sampling plotted according to the Equation [5] relationship. The correlation coefficient of $r = 0.87$ shows significant agreement with the theoretical model. In the 200 plus crop formations examined in this laboratory we have found six other sites in which there was clear-cut evidence of electromagnetic energy absorption according to the Beer-Lambert principle. In one of the 1995 formations at Whitchurch, England we found, through application of this radiation principle, clear evidence of a massive spill-over of radiation damage extending outward into the standing, normal-appearing crop. In the Whitchurch formation there were two large interacting systems. In the Oregon formation similar interactive processes are suggested by the fact that energetic, irregularly downed areas, with large node expansions, were found adjacent to the geometric structure.

As pointed out in the earlier work[4], if one of these interactive systems possessed a total energy content greater than the other, then mutual incorporation could occur. Two possibilities arise: A- they form one huge system, or B- the energy system containing a considerably lower degree of energy could be repelled and the forces would direct it away from the higher energy system. In the U.K. formation, situation A prevailed and in the Oregon interactive formations situation B appears to be the case, since the irregular formations (with lower total energy) were discovered some distance away from the large geometric downed area.

References

(1) F.H. Getman and F. Daniels, *Outlines of Theoretical Chemistry*, John Wiley & Sons, Inc., 1937

(2) *Gravitropic Responses in Simulated Crop Formations, 1997.*, BLT Report No. 86, 10-14-97

(3) *Delineation of Electromagnetic Energy Influencing Crop Formations*, BLT Report No. 24, Sept. 28, 1994.

(4) *Crop Formation: Whitchurch, U.K. 1995*, BLT Report No. 72, May 30, 1996.

W.C. Levengood
Pinelandia Biophysical Lab.

John A. Burke
Am-Tech Lab.

Fig. 1: Field Sampling Diagram of Randomly-Downed Crop Areas, Salem, Oregon (1997) crop formation. Sampler: Mary Ann Koch, 7/18/97.

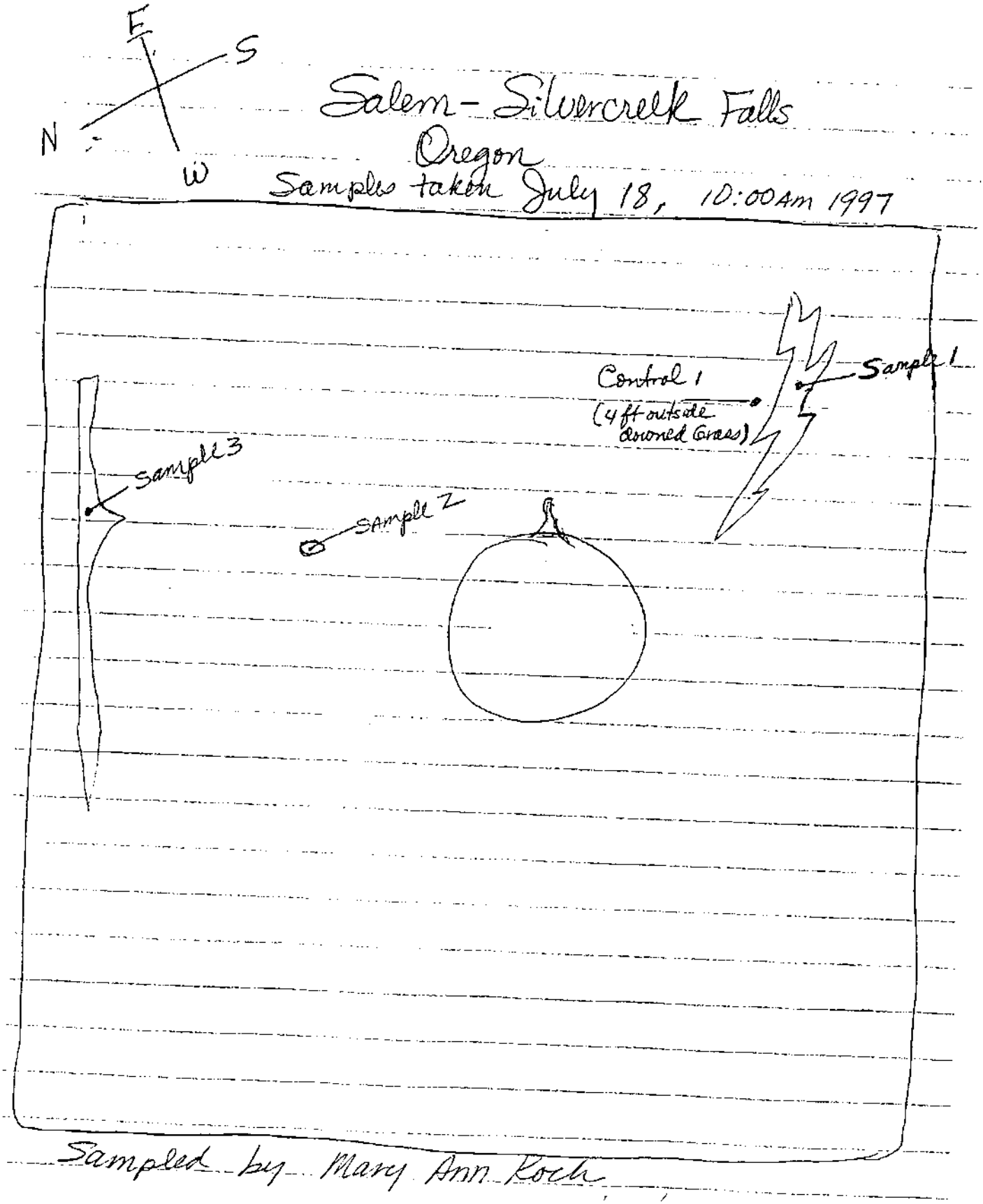
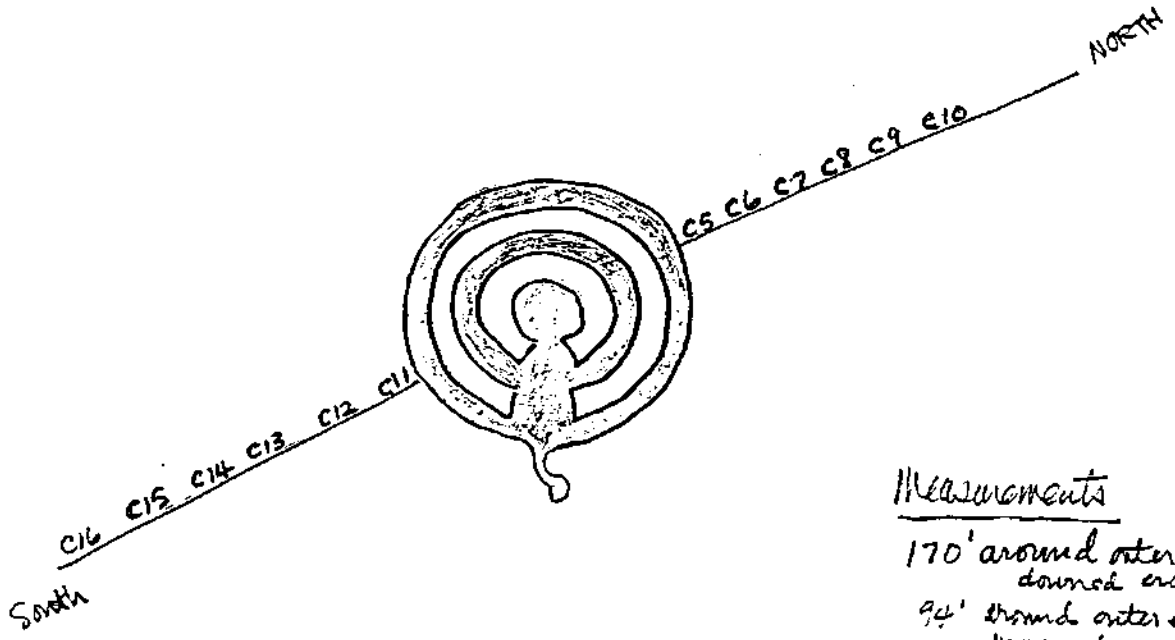


Fig. 2: Field Sampling Diagram of Standing Control Crop, Salem, Oregon (1997) crop formation. Sampler: Carol Pedersen, 7/9/97.

BLT RESEARCH TEAM
FIELD SAMPLING DIAGRAM

Formation Location: WAURA FARM, SALEM, OREGON
Date Sampled: 7-9-97



Measurements

170' around outer edge downed crop
94' around outer edge inner downed crop
42' around center
64 x 64 diameter

North Controls

C5-N = 10 ft - crop 41" hi
C6-N = 20 ft - 41"
C7-N = 50 ft - 41"
C8-N = 100 ft. 42"
C9-N = 200 ft. 42"
C10-N = 250 ft. 34" end of field

South Controls

C11-S = 10 ft - crop 41" hi
C12-S = 20 ft. - crop 42" hi
C13-S = 50 ft - crop 41" hi
C14-S = 100 ft. - crop 41" hi
C15-S = 200 ft. - crop 41" hi
C16-S - 232 ft. - crop 37" hi edge of field

Note: Shaded areas = downed crop.

Fig. 3: Field Sampling Diagram of Geometrically-Downed Crop Formation, Salem, Oregon (1997). Sampler: Keith Ardinger, 7/7/97.

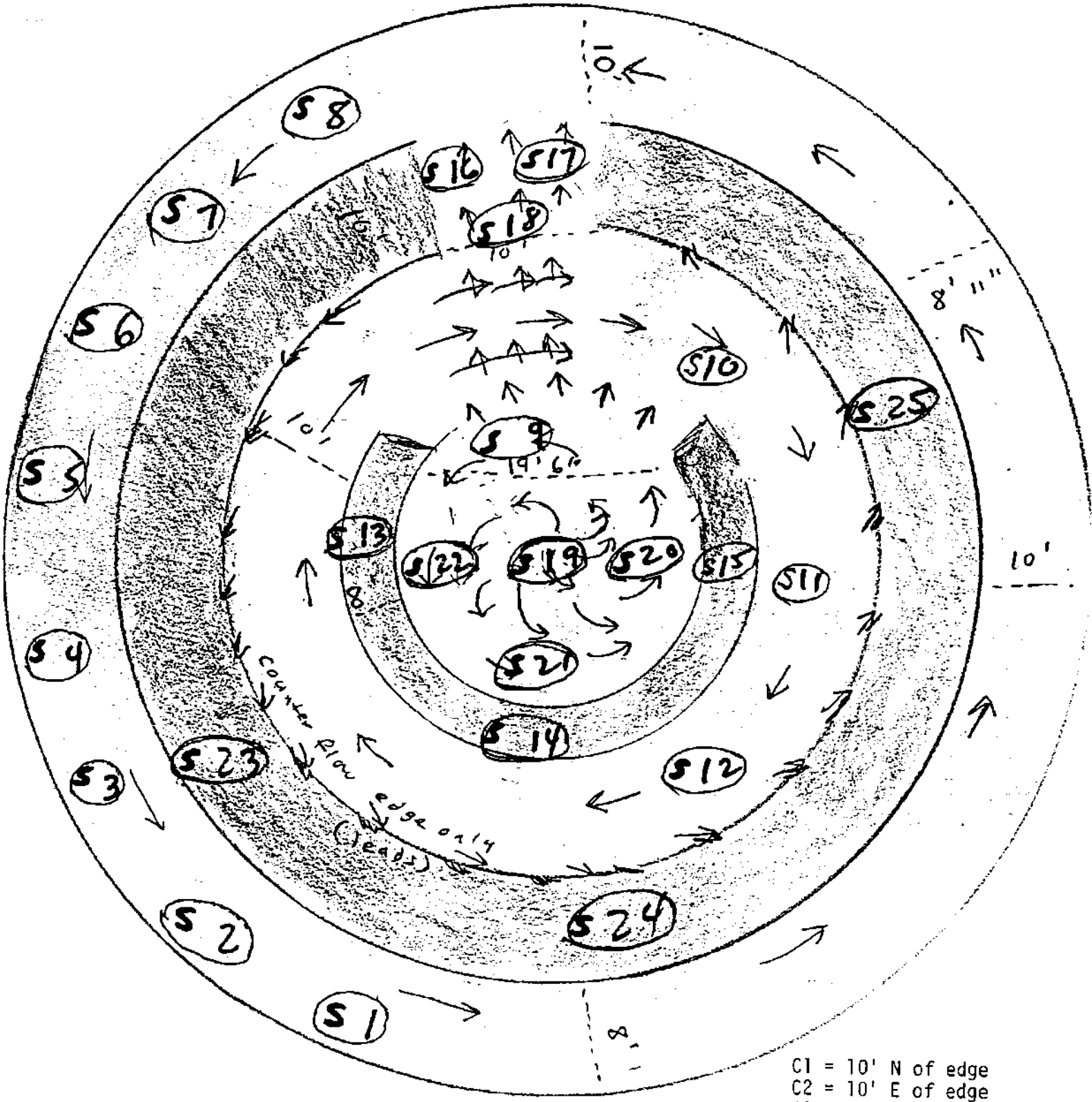


Fig.4: EXPULSION CAVITIES - SALEM, OREGON CROP FORMATION (1997)

GEOMETRIC FORMATION RESULTS:	-Expulsion cavities = 55% -Node length increases = 83% -Control N1 normal, EC = 0%	RANDOMLY DOWNED AREAS:	-Expulsion cavities = 20% -112% max. N1 increase -Controls, N1 normal, EC = 0%

ALL CONTROL PLANTS SHOWED NODE LENGTH INCREASES DECREASING W/DISTANCE FROM GEOMETRIC FORMATION IN ACCORDANCE WITH BEER-LAMBERT PRINCIPLE OF ABSORPTION OF ELECTROMAGNETIC ENERGY BY MATTER (Correlation coefficient, r = 0.87)

Fig. 5: Chart Showing Node Length Increases in Control Plants Decreasing as a Function of Sampling Distance Away from North & South Edges of Geometric Formation.

The individual data points show a statistically significant (correlation coefficient r = .87) agreement with the well-known principle in physics (Beer-Lambert Principle) which describes the absorption of electromagnetic energy by matter.