Research Report from Pinelandia Biophysical Laboratory

Grass Lake, Michigan 49240

December 8, 2003

Crop Formation: Solano County, California 2003
Laboratory Code No. KS-06-09

Location: Solano County, California
Material: Wheat (*Triticum aestivum*) seed heads.
Discovered: Around June 28, 2003
Sampled by: Ms. Cheryl Gordon, assisted by Mr. Don Hubbard
Formation Characteristics: Large circle with smaller, associated circles and a pathway.

Laboratory Findings:

Due to excessive trampling in this formation by abundant visitations it was not possible to obtain enough intact, undamaged plant stalks in order to conduct a rigorous examination of apical node expansion or internal cellular changes. However, seed head samples (consisting of around 5-6 per sampling site) were available for a detailed analysis of seed germination and seedling growth characteristics.

Germination and Seedling Vigor Studies:

Within a time span covering the last thirteen years, over 250 crop formations have been examined at the Pinelandia Laboratory. In the majority of cases sufficient plant tissue samples have been available for detailed studies of both cellular and gross morphological anomalies. In a very small percentage of the overall mass of samples submitted, there have been cases where insufficient material was available for conducting a study which would provide adequate data for statistical analysis. In those few cases the findings were listed as being inconclusive.

In contrast, the samples of wheat heads from the Solano crop formation turned out to provide data, which unambiguously demonstrated the influence of external energies on the growth and development of seeds from within the formation. A total of twelve sample sets were examined using standard procedures for seed germination. Since both the percent germinated and the seedling growth are important parameters for evaluating plant growth potential, a quantitative "seedling development factor" Df (see reference #1) was applied to the Solano samples. This Df factor is given by;

$$Df = L \times Fg \qquad (1)$$

Where L is the mean seedling length in a given sample set and Fg is the fraction germinated within this same test set.

The seeds used in this study were collected on July 10, 2003 and on July 28, 2003. Only three sample sets were obtained on July 10, and these are designated 1,2 & 3 in the Fig.1 diagram. The nine locations labeled A through I indicate the origins of the July 28 sample groups. In Table I are summarized development data obtained from the first sampling. These data are based on germination paper rolls containing 30 seeds each.

Table I

Seedling development factor (Df) tests conducted July 14, on seed heads collected July 10, 2003, at the Solano crop formation. Data obtained at the 5-day development stage.

	---- Df-----			Change Relative
Sample	av.	s.d.	N-plants	to Controls %
#1- at edge of large circle (standing plants)	3.03	1.60	29	+80%*
#2- Control 60 ft. outside (standing plants)	1.68	1.36	22	--------------------
#3- inside large circle (downed plants)	2.08	1.85	25	+24%

*- P< 0.05

Here we find a whopping +80% increase in seed development from standing plants at the visible edge of the large circle, compared with a 24% increase from seeds taken from downed plants within the circle. This however, is not unusual, it is often found that the energy is at a maximum at the outer edge of the rotating plasmas and may occasionally continue to show significant influence for several feet into the standing crop. The very high Df level in the sample #1 seeds suggests that the energy producing the increased seedling development may have interacted in a quite variable manner throughout the formation. As is often the case, preliminary findings point out the need for more extensive sampling.

In order to determine if this large Df value is unique with this single sampling site or is characteristic of the entire formation, a second sampling was conducted. The onsite locations of nine samples designated from A---I are shown in Fig.1 and the summarized data from the second round of seedling development tests are listed in Table II..

Table II

Seedling development factor (Df) tests conducted July 28, 2003 using seeds collected on July 20, 2003 at the Solano, CA crop formation. Df obtained at the 5-day development stage.

Sample	-----Df---- av.	s.d.	N-plants	Change Relative to Controls %
A- formation	3.06	1.94	29	+12%
B- control	2.39	1.99	28	--------------
C- formation	4.33	1.64	28	+59%*
D- "	3.22	2.23	30	+18%
E- "	3.10	2.02	28	+14%
F- "	4.13	1.76	30	+52%*
G- control	3.04	1.29	27	---------------
H- formation	4.33	2.03	29	+59%*
I- "	3.69	1.86	29	+36%*

Note: Collectively the control sets B&G gave an average Df of 2.72 with an s.d. of 1.63 and a total of 55 plants – control av. used to determine the Df level (*- P<0.05)

Comparing the data in both Tables I and II, one finds that out of the nine formation samples, five (marked with an asterisk) or approximately 56% of the formation samples have seedling growth factors significantly higher than the control plants. An example of these large increases in growth and development is illustrated in the Fig. 2 where the development in Sample-H (Table II) is shown in the upper photograph and the Control Sample-B in the lower photo – both sample sets taken at the 5-day development stage. At the upper section of each photo is a blue dashed line faintly imprinted on the commercial germination paper. This reference line (arrows beside photos) makes it possible to quickly observe visual differences in seedling populations. For example, the Sample-H photo shows 20 seedlings with coleoptiles (primary leaves) extending above this line, whereas Sample-B control set shows only 9 seedlings above the reference line.

Discussion of Findings:

One very legitimate question that might be asked in relation to these findings; why do the seeds in the Solano formation, exhibit such high growth vigor compared with the normal controls, whereas in other crop formations the seedling vigor is significantly reduced? To answer to this question one must consider the exceedingly complex nature of interactions within the boundary-condition energies involved in the organization of these plasma systems.

From the 250 plus crop formations examined in this laboratory, the data obtained clearly indicate that there are seven basic energy components involved in the establishment of a crop formation (see reference #2). In this listing there are two energy components, which can produce the most measurable alterations in the plant growth and morphology (shape and structure).

1) **Microwave Radiation Energy** – can produce tissue heating and cessation of embryonic growth, changes in cell wall pit structures, node expansion and expulsion cavities.

2) **Ion-electron Avalanche Energy** – can produce seedling growth enhancement due to changes in free radical levels in seeds (see reference #3).

Although all seven of the boundary condition energies are present in most all crop formations produced by plasma vortex energies, the two mentioned above have the most impact on the plant physiology. The deciding factor as to whether microwaves or ion-electron avalanches will have the greatest influence in a crop formation is entirely dependent on the ratio of their energy densities. In the Solano formation the energy density of the ion-electron avalanches was of mush higher magnitude than the microwave component.

The data in Tables I and II clearly indicate that the dominant ion-electron energy was not spread uniformly throughout the entire formation. **One of the most ubiquitous characteristics of crop formations is the documentation of the compartmentalization of energies into quadrants, acting totally independent of one another.** In the Solano formation the influence of the plasma energies change quite drastically within discreet, sharply defined regions in and around the formation. These data illustrate in general what might be expected in a chaotic system undergoing self-organization.

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References

1) W.C. Levengood, "Anatomical Anomalies in Crop Formation Plants", Physiologia Plantarum, **92,** pp.356-363 (1994)

2) W.C. Levengood and N.P. Talbott, "Dispersion of Energies in Worldwide Crop Formations", Physiologia Plantarum, **105,** pp. 615-624 (1999)

3) W.C. Levengood and J.A. Burke, "Method and Apparatus for Enhancing Growth Characteristics of Seeds Using Ion-Electron Avalanches", USA Patent No. 5,740,627 (1998).

Fig. 1 Diagram showing approximate location of seed head samples discussed in this report (ref. KS-06-09). Photocopy of crop formation from the San Francisco Chronicle of 7-3-03.

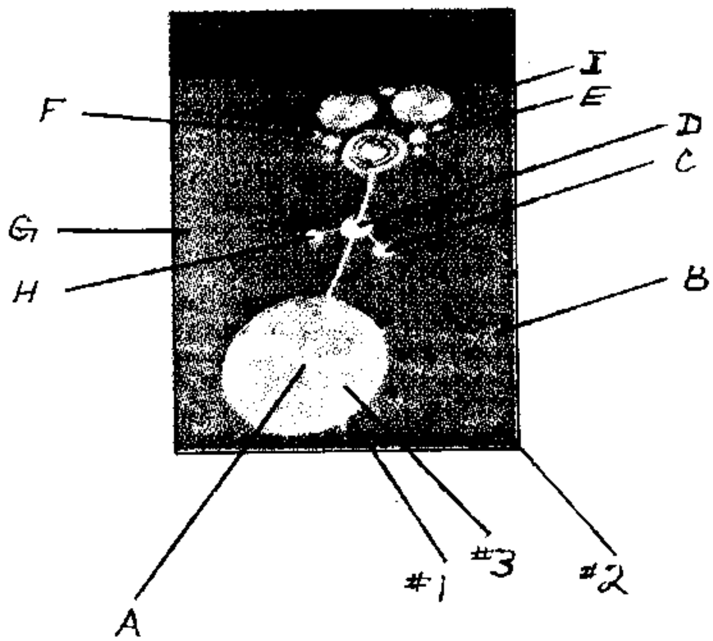

Fig. 2 Comparison of plant growth from seeds taken in formation Sample-H with control Sample-C taken outside the Solano, crop formation (Table II in report).

Seeds from Site-H (within formation)

Seeds from Site-B Controls (outside formation)