November 15, 1992

RESEARCH REPORT: PINELANDIA BIOPHYSICAL LAB.

This report covers two complete analyses on two sample sets taken from the same formation by different people. The circle-triad formation occurred on 7-27-92 "below Oliver's Castle", UK, and both sample sets were taken from the same circle in the triad. The KS-01-54 set was taken by Matthew Moniz on 7-31-92 and the KS-01-58 set by Linda Moulton Howe on 7-29-92. It should be mentioned that Matthew Moniz is continuing germination tests on this material (at his laboratory) and a report should be forthcoming in a few weeks.

LABORATORY Code: KS-01-54 (MM-set)

PLANT MATERIAL: Wheat heads-seeds.

COMMENTS ON SAMPLES: The samples were received on 8-24-92 and the intact heads appeared to be in excellent shape- no apparent difference in external appearance between formation and controls.

CELL WALL PIT EXAMINATION:

SAMPLE	PIT DIA. (microns)	N-PITS	DIA. CHANGE
Control	2.10 s.d. 0.37	30	---------
Circle	*2.54 s.d. 0.62	30	+21.0%*

*-P<0.05

PAPER ROLL GERMINATION: A portion of the growth data are shown in the lower curve of Fig.1 attached to this report (see key at bottom left of these curves for sample designation). The root development factor Df is as explained in Report #9.

Laboratory Code KS-01-58 (LMH set)

PLANT MATERIAL: Wheat heads - seeds.

COMMENTS ON SAMPLES: These samples were transported in plastic bags and some mold developed on the heads. Both sample groups appeared to

have the same degree of light mold.

CELL WALL PIT EXAMINATION:

SAMPLE	PIT DIA. (microns)	N-PITS	DIA. CHANGE
Control	1.79 s.d. 0.40	30	-------
Circle	*2.21 s.d. 0.47	30	23.5%*

*-P<0.05

PAPER ROLL GERMINATION: The root development factor Df is shown in the upper curve in Fig.1, for the first six days of development.

COMMENTS:

Either one of these sets of data taken separately would not be too meaningful; however, when considered as a dual testing there are some interesting comparisons to be made. For example both circle sets have a higher Df level when compared with the control curves, although, these differences are not as pronounced as has been observed in other samples.

The pit size increases are almost identical in both sample groups; however, there are also significant pit size differences between the two control samples. The LMH controls have a somewhat lower mean pit diameter than is generally seen in wheat bract tissue. In addition, the level of the root development factor in the LMH samples is of much lower magnitude than in the MM group. The specific reason for these differences, is not known; however, two possible explanations come to mind; 1)-many of the formations examined this year exhibit large tissue variations within a given formation; 2)-the sampling and handling methods were quite different in the two test sets. The latter possibility seems the more likely.

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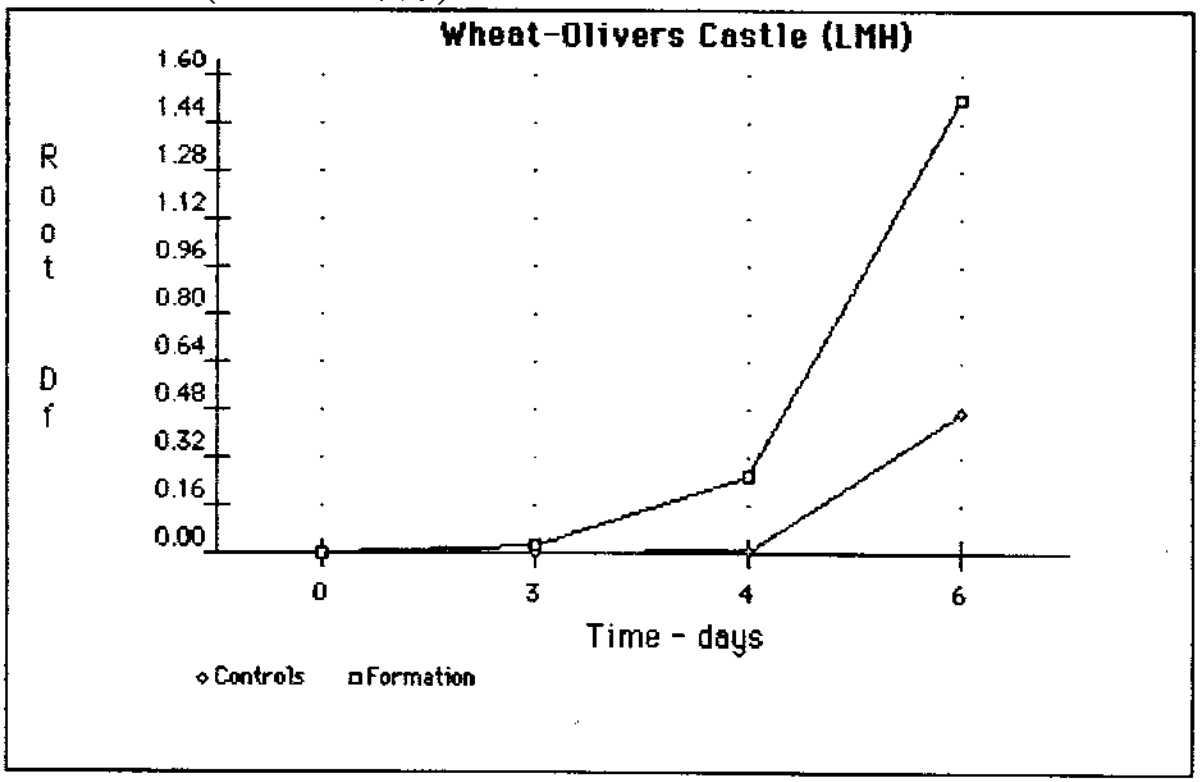

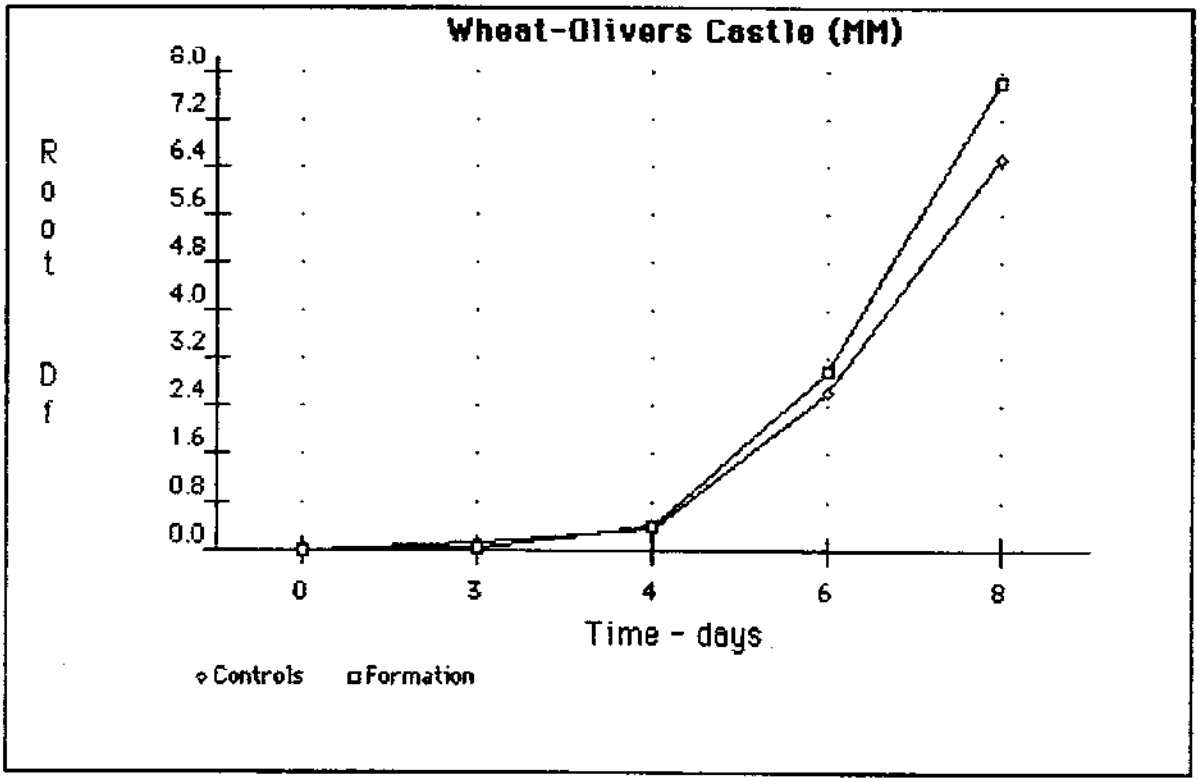

Fig.1 Root development factor Df, in wheat from circle and control samples taken at Oliver's Castle, UK, 1992.

Upper data: samples from Linda Moulton Howe
Lower data: samples from Matthew Moniz