Abstract Submitted
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Microarray Studies of Arabidopsis Gene Response to High Magnetic Fields.[1] J. CH. DAVIS, M.W. MEISEL, Dept. Physics and NHMFL, Univ. Florida, J.S. BROOKS, Dept. Physics and NHMFL, Florida State Univ., A.-L. PAUL, R.J. FERL, Dept. Hort. Sci., Univ. Florida — Microarray analyses indicate that a homogeneous magnetic field of 21 Tesla has a far reaching effect on the genome of Arabidopsis plants. Survey of an Affymetrix microarray populated with 8,000 genes from the arabidopsis genome reveals that although most of the genes in the array show less than a 2-fold difference in expression between the 21 Tesla treatment and control, many show striking differential expression (5-50 fold). These results were corroborated by quantitative real-time reverse transcriptase - polymerase chain reaction (qRT-PCR), a method often used in conjunction with microarrays to support the scatter plot data rendered from the two-way comparison (21 Tesla vs. control) of the arrays. Scatter plots of treatment vs. control data are saturated where differential expression is less than 2-fold. In an attempt to extract additional information from this area, topographical plots were generated to reveal the numbers of genes represented by any given point on the plot, providing information that may prove insightful in future analyses of microarray data.

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