

RF 89025  
A87 GHT  
Hansen  
file ND

September 28, 1988

Dr. Andrew Hanson  
Michigan State University  
MSU-DOE Plant Research Laboratory  
East Lansing  
Michigan 48824-1312

Dear Andrew,

I was in New York last week but was unable to reach you by telephone. However, Gary Toenniessen tells me you have submitted the necessary to him and that the Bellagio meeting is on! Please forward your tentative list of participants to me as Gary and I have discussed one or two additional people outside the US-Australian axis which often prevails on this subject. You and I spoke of a possible list of speakers which came close to the maximum capacity (25). I presume that not all of these people were available and thus the need to continue searching for specialized expertise.

Regarding my particular subject interests I have the following comment and request. In our last discussion I wisely begged off on being responsible for discussing flowering stage water stress. In my current situation in India I do not have the library support to properly search out and synthesize the state of knowledge on this subject. I hope you were able to confirm Saini's participation on the subject.

My request is related to the use of RFLPs to associate genotypic variation in root system form and function (primarily depth of water extraction from the soil profile) to chromosome location and/or RFLP marker(s) allowing the use of molecular markers in selection. Do you know anyone who has worked on identification or expression of genes controlling root form and function? Surely some basic efforts have followed Skoog and Miller's (1957) manipulation of root and shoot development in callus morphology, i.e. balance of auxins vs. cytokinins. Has the more recent work (1980s) related to the shoot (Shi) and root (Roi) controlling components of T-DNA (reviewed by L. Herrera-Estrella et al. in Dobbs (ed) "Plant Genetic Engineering") and subsequent relationship of T-DNA genes 1 and 2 to auxin production in plant cells led to higher plant studies? Herrera-Estrella mentioned

Schroder (1983, 1984) and Inze (1984). Do you know if anyone has followed this toward identifying and characterizing genes related to IAA-Auxin control of root expression or root system characters? If we cannot locate someone with basic physiological genetics experience in root form/function then I shall have to try and formalize my thoughts a bit better but without benefit of the more basic research orientation. Your assistance in locating a resource person (whether or not they can be invited to Bellagio) will be greatly appreciated. As you can tell I feel very strongly that this is a research priority in developmental physiology and a key item in explaining the dramatic genotypic differences in drought resistance among rices at both vegetative and reproductive growth stages.

Please keep me informed as plans move forward on the meeting.

Sincerely,

John C. O'Toole  
Senior Scientist - Rockefeller Foundation  
Program Officer - Ford Foundation

cc: Dr. Gary Toennissen  
The Rockefeller Foundation, N.Y.