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ESTABLISHMENT OF THE CAPACITY TO MEASURE PLANT GROWTH REGULATORS BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) AND RADIOIMMUNOASSAY (RIA) IN MY LABORATORY

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The objective of this project is to establish the technical expertise and facilities in my laboratory to quantify the endogenous concentrations of IAA, ABA, several cytokinins, and several species of GA by the combined use of HPLC, RIA, and ELISA (enzyme-linked immunosorbent assay). To meet this objective, I sought and received funding from the Citrus Research Board to hire Dr. Isa Bertiing as a Visiting Postdoctorate Research Plant Physiologist to set up the procedures and to verify the reproducibility of these methods once they are established in our laboratory. Dr. Bertiing completed her Ph.D. under Professor Bangerth, an expert on auxin transport, at the University of Hohenheim in Stuttgart, Germany, in August 1992. Dr. Bertiing joined my laboratory on January 13, 1993. On February 22, 1993, Isa will leave UCR to work in the laboratory of Dr. Jonathon Cutting at the University of Natal, Pietermeritzberg, RSA. Isa will be there for two months to learn Dr. Cutting's most up-to-date methods by actually utilizing them and to bring back standards for the HPLC, and antigen and antibodies for the RIA and ELISA assays, all generous gifts from Dr. Cutting to help us get up and running sooner. Dr. Bertiing previously received a year's training for her Ph.D. in Dr. Cutting's laboratory at the same time that I was on sabbatical there. I was impressed by her capabilities. She was studying the role of GAs in the propagation of difficult-to-root tree crops, e.g., marula and avocado. I feel very fortunate to have her join my lab group.

I received $9,000 for this project from the California Avocado Society to purchase a centrifuge essential to the RIA procedure. We will order the centrifuge (after confirming the exact one we need with Dr. Cutting) by March 1, 1993, so it will be here when Dr. Bertiing returns. Dr. Bertiing will FAX the specifications of all the other supplies and equipment we need for the procedures. We will make sure to have everything on hand by the time she returns.

We will establish the methodologies for quantitation of GA and ABA first, and investigate the hypothesis that the ratio of GA to ABA controls avocado fruit set versus fruit abscission, especially during periods of high air temperatures or water stress.

Please note that the combined funding provided by CAS, CRB, and CADO does not cover the total expense of this project and that I am (z) working hard to secure funding from federal sources, and *(if)* using my various donor dollars to supplement this project.