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Gentlemen:

I enjoyed your report, USNRDL-455 on the Marshall Island contamination from Castle. Your soil data need to be recalculated with the available calcium rather than total calcium as the basis for the Sunshine Units.

Could you analyze these soils for available calcium so the total ecological picture can be seen? These analyses can be done by isotopic dilution using a neutral solution of Ca^{45} and being careful to use only the minimum amount of water so direct solution by bacterial action may not occur. Also use plenty of soil, 2 or 3 pounds, if possible.

If you wish, send send the samples here to me and I shall run them. I have done a number recently and the method works well (cf. Smith and Blume, Soil Sci. 77, 9- (1954)). A soil from Canton Island has been analyzed but none from the Marshalls. The Canton soil gave about 100 grams of exchangeable calcium per square foot in the top 3 inches. This is as you see only a small part of the total calcium so the Sunshine Units in your Table 3.2 should be multiplied by large factors. This will bring them into agreement with the levels found in the herbage.

Very sincerely yours,

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W. F. Libby

CC: Dr. Tompkins
Dr. Dunning
Mr. Eisenbud