

13 June 1932

Dr. O. Tedin,  
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My dear Tedin :

Thanks for your letter. I think Immer's advice was pretty good common sense, and the simple thing would be to apply it to the actual data. It is, of course; true, that the correlation between  $\underline{u}$  and  $\underline{v}$  in your notation is derivable from that between  $\underline{x}$  and  $\underline{y}$ , if you know also the variances of  $\underline{x}$  and  $\underline{y}$ ; but it seems to have a perfectly direct meaning in its own right in deciding whether, on fertile land, with  $\underline{u}$  high,  $\underline{v}$  is any greater than on infertile land. Actually the covariance of  $\underline{x} + \underline{y}$  and  $\underline{x} - \underline{y}$  must be the difference between the variance of  $\underline{y}$  and the variance of  $\underline{x}$ , so that if these variances are equal there is no doubt that a statement of yield difference is more generally true than a statement of percentage difference, which could only be the more accurate if the higher yielder had the higher variance. It would be ideal if the coefficients of variation, but not the variances were really equal. I think

this point about the covariance of  $\underline{u}$  and  $\underline{y}$  will put your algebra right, as you have their variances correctly. I don't see how the regression would help, though the regression on rainfall or temperature might be invaluable practically.

Yours sincerely,