

Mr. Croes, South Dakota: Do you hold your elevator responsible for the same kind and quantity and when you figure up your protein and find that you are entitled to a higher grade of protein than the elevator has delivered, do you ask that elevator to make good?

Mr. Cox: Not so much on protein as on the grades. On the protein, we have not quite got to that. Here is what we do notice, that our grain buyers when wheat first starts to be delivered in July always average the protein at a station and they will call a certain station a 14 protein station, another station probably a 10 per cent protein; they figure it on the average. We are not exactly accurate, we cannot be that yet, but we are getting closer to it all the time.

Mr. Croes: I wondered if you had particular instances where you had been able to find your protein getting away from you and save yourself that value, which could more than take care of the expense. That could happen in some localities.

Mr. Cox: I think so; I think by following this up and watching it close we can do that. We can work it out until that would considerably more than take care of the expense. I do not think there is really an additional expense and feel sure it is well worth while to run our own laboratory as we are doing.

The next is an excerpt from the *Journal of Agricultural Research*, vol. 34, No. 3, Washington, D.C., February 1st, 1927. At page 242:—

Frank, and Mangels and Sanderson have reported figures comparing the protein content of different lots of wheat and the percentage of dark and vitreous kernels in these lots, and their conclusions are that high protein content is not always associated with a high percentage of dark, hard and vitreous kernels.

And at page 243:—

In each of the above cases the relationship—

That is, between protein content and dark, hard vitreous kernels,

—was such that it was apparent that an estimation of the percentage of dark, hard and vitreous kernels was only a general index of the protein content of the wheat. A low percentage of dark kernels did usually indicate a low protein content, and sometimes a high percentage of dark and hard kernels was associated with high protein content, but as an exact measure of the protein content of wheat this determination is not reliable.

Also at page 245:

During the last few years the protein content of wheat has been assuming increased importance in determining the market price of wheat. Transactions are known where as much as 30 to 40 cents a bushel premium were paid for wheat of the same numerical grade but of higher protein content.

Such investigations as those of Zinn Bailey, Thomas, Stockham, Sherwood, and Mangels, wherein the protein content of the wheat has been compared with the baking data, have given evidence which tends to substantiate the practice and value of judging baking strength by a determination of the protein content of the wheat. It is agreed that there are individual cases in which the relationship between the percentage of protein in the wheat and the associated baking test does not hold because of the influence of other factors that affect baking strength; yet, when purchases are made on a large scale and the wheat is blended, the individual differences seem to disappear, and a close relationship is shown to exist.

[John Millar, M.P.]