NORTH DAKOTA
Farm Research
Bimonthly Bulletin

Vol. 34, No. 5 May-June, 1977

Guest Column

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Communication research tells us that words do not have meaning, but people do. And therein lies one of our most serious communication problems.

Our present-day complex society bombards each of us with literally thousands of messages each day. And these messages touch all of our senses. Not only do we read messages on paper, hear messages on the radio or telephone or in person, and see and hear messages on television, we also get messages through our other senses of touch, taste and smell.

How do we know which of these messages to pay some attention? Luckily, we do not attend to all of them. If we did, our world would be even more confusing than it already is. But by a process of "selective perception," we pay attention to some of the messages and ignore the others.

A major part of the problem of effective communication lies in the fact that none of us attend to the same set of messages. All sets are different. Not only are the messages each one of us lets into his perceptive world different, but a further complication is that we all have different sets of meanings for the messages we do perceive.

In spite of all this, humans do communicate with one another, sometimes fairly effectively. Our reasoning tells us that the closer the intended meanings in the presented message come to the actually perceived meanings, the more effective our communication is going to be. Therefore, it well behooves us who are in the communications business as best we can to construct and send out messages that carry our intended meanings to our selected audiences. This is the "art" of effective communication.

Fortunately, most messages that originate from within the work of the North Dakota Agricultural Experiment Station carry with them a high degree of reliability and credibility. The same

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On The Cover: Langdon Branch Station Superintendent Bob Nowatski, at left, and Bottineau county farmer Bob Henry, off-station farm cooperator near Newburg, check for seed placement in this first-year trial of no-till drilling of flax in barley stubble. (Photo by Jim Berg).

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Vol. 34, No. 5 **May-June, 1977**

A BIMONTHLY progress report published by the
Agricultural Experiment Station, North Dakota State University of Agriculture and Applied Science
Fargo, North Dakota 58102

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Table 10. Protein Content of Particles in Ground Hard Red Spring Wheat (Waldron variety).

Mill Used	Particle size, micrometers[1]						
	>1,000	920	670	398	358	223	<149
Labconco Burr Mill							
% Protein	16.6	15.9	14.1	13.7	14.0	14.6	17.4
% of grain	3.6	9.4	44.4	7.4	11.3	10.1	13.7
Hobart Burr Mill							
% Protein	16.2	15.7	14.5	13.7	13.8	14.2	16.7
% of grain	7.5	11.0	36.3	7.3	13.5	11.4	12.9

	Particle size, micrometers[1]			
	>420	358	237	<149
Udy Cyclone Mill				
% Protein	14.5	14.8	14.6	15.5
% of grain	13.1	60.8	13.7	12.4

[1]*Particles of different sizes were separated on sieves.*

a sampling error can occur when weighing 1 gram of ground sample for the protein test if the right amounts of different size particles are not selected. The ground sample should be thoroughly mixed before weighing to avoid this type of error.

5. **Laboratory Techniques.** Poor laboratory techniques can cause protein variance in the Kjeldahl method. These variances can be reduced to a minimum by properly trained and experienced technicians and by a continuous check on the accuracy of the determination. An analysis should be made on check samples each day. Chemical standardization of each new solution or reagent, and frequent checks on the accuracy of instruments and glassware should also be made.

Conclusions

Protein analysis of grain is a complex procedure with many steps where errors can occur. A sampling error can be introduced prior to analysis when sampling the original grain, when an aliquot of the original sample is obtained for grinding, and when weighing the ground grain for the protein test. A change in moisture content of the grain before grinding or during grinding can also introduce an error prior to analysis. High or low protein dockage material in grain can cause a protein variance. Therefore, this material should be removed prior to grinding. Many factors can cause errors during the chemical analysis by the Kjeldahl method. To keep these to a minimum, technicians should be properly trained, and there should be frequent checks made on instruments and glassware for accuracy. Checks should also be made on all new solutions and chemical reagents used. Check samples should be analyzed daily to test the overall accuracy of the determination. Even with the best technician and equipment, a few results can still vary from the true or correct value.

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is true of most scientific research reporting, provided that it is accurate and more or less complete. This is not something that has been "granted" to experiment stations, but has been earned over the years through the witness of experience and satisfied customers—the farmers and ranchers who ultimately use the information.

Information from the Experiment Station is believable and believed. It has withstood the extreme tests of time, experimentation and practical application. It has successfully resisted the efforts of unscientific and non-scientific disbelievers to dent its armor of credibility.

But, we must remember that Experiment Stations are composed of people, too. And they suffer through all of the interpersonal communications problems that the rest of us do, too. The principal difference in their messages as reliable sources of information lies in their use of the methods of science in their search for truth. Once their methods uncover new evidence and new "facts" that indicate what they believe is so, then the communication problem becomes one of penetrating the perceptive shields of their intended audiences with believeable and understandable interpretations of that evidence.

In this task, they have the support of a group of skilled interpersonal communication craftsmen whose business it is to help create messages that can attract attention and have meaning for those who can make use of that information. This is a fascinating business. The challenges we constantly meet to use all of the skills and techniques at our command to compose effective messages keeps our work filled with interest and variability.

It is the relative success of our working together to overcome these challenges that has brought about the large measure of credibility and believability that comes along with information based on Experiment Station research. Our future success lies in our ability to keep up with the new human communication technologies and use them to their fullest as our society continuously expands its interests in and uses of interpersonal communication.

pre-experimental corn-based ration. This, too, illustrates the effect of dietary fatty acids on egg fatty acids. Corn contains only 1.9 per cent $C_{18:2}$ while the PGS used here contained 3.05 per cent $C_{18:2}$.

The influence of dietary fatty acids on egg yolk fatty acids observed here agrees well with findings of other researchers (Feigenbaum and Fisher, 1959; Machlin and Gordon, 1962; Sell **et al**, 1968; and Sim **et al**, 1973). However, very little effect of dietary PGS fatty acids on the fatty acid composition of adipose tissue was observed. An explanation for this apparent discrepancy may reside in the fact that change in the fatty acid composition of adipose tissue of a mature animal would be limited by the turnover rate of that tissue. In contrast, egg yolk fat would be derived from direct deposition of dietary fatty acids as well as from **denovo** fatty acid synthesis as it is formed. Also, hens usually contain a sizable amount of adipose tissue and it would probably require some time for a low level intake of dietary fatty acids to alter the fatty acid spectrum of adipose tissue noticeably.

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