

A SPLIT-RUN STUDY OF THE INFLUENCE OF FARMER QUOTES  
ON READERSHIP BY FARMERS

by

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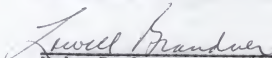
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## INTRODUCTION

The communication of scientific agricultural information to its consumers, farmers, involves editorial decisions that ultimately determine the effectiveness of the communication.

Inherent in such editorial decisions is one prime factor--how to most effectively attract and hold readers. Will changing a proven editorial approach attract and hold readers? Or, will altering a tried and tested editorial formula lose readers?

Historically, publications that adjusted to the needs and interests of their readers are the ones that survived. Theodore Peterson (21) says that the reluctance of magazine publishers to alter their editorial formulas, even when times and interests were changing, is one explanation of magazine mortality.

The fortunate publishers, says Peterson, "were those whose editors anticipated changes in public taste and subtly adapted their publications to them without losing readers" (21, p. 163-4).

Peterson was speaking of magazines in general. But his diagnostic appraisal applies as well to farm magazines. In fact, one critic (3) has said mechanical and editorial improvements in farm magazines during the past decade have been virtually undetectable. "Cars change, tractors change, suits change, feeds and fertilizers change, schools change, and farming practices change, but farm publications really don't change very much" (3).

One of the long-accepted, change-resistant ingredients of

successful farm magazine editorial formulas is to use farmer names and experiences, including direct quotations, in the body of editorial articles. Farm editors and writers have regarded farmers as excellent sources of information since the early days of farm journalism in the United States.

John Stuart Skinner, generally considered the founder and editor of the first successful farm publication in the United States (4), wrote in his American Farmer in 1822: "It is already known that our first wish is to communicate the experience of the sun-browed practical Farmer, in preference to the fine spun lucubrations of the Philosopher, or the calculations, however profound, of the political oeconomist" (4, p. 23).

Conservatism and the tendency of farmers not to accept and adopt new farm technology prompted early farm editors to include farmer experiences in their articles. Along with cuts and detailed descriptions of new machines, editors printed letters from farmers testifying to the effectiveness of the new devices. Farmer testimonials, reasoned the editors, would help break down farmer resistance to new ideas (4, p. 46).

Editors, in fact, did everything in their power to solicit contributions from farmers. "We like to have farmers sit down and scribble upon paper, just how they do this and how they do that--write it down just as they talk it to a neighbor," wrote the editor of the American Agriculturist in 1854 (4, p. 101).

Traveling farm writers of the mid-nineteenth century used names of farmers and their experiences in a manner more similar



to their use in today's farm magazines. Those writers traveled the country seeking knowledge from practical farmers who were usually delighted to give information (4, p. 106).

Solon Robinson (1803-1880), one of the most famous of the itinerant correspondents, customarily included in his accounts details such as names of individuals, places, and dates. Demaree thus describes Robinson's success: "His articles were eagerly awaited by thousands of farmers and many of his tours made the rounds of the press" (4, p. 108).

Use of success stories filled with direct quotations represents a style adopted by the American Magazine early in the twentieth century. The editorial policy of the American was what the magazine's editor, John Siddall, called the personal approach. Siddall filled the magazine with articles telling how businessmen had become financially successful.

The theory behind the policy was to give readers of the American advice and counsel in the words of successful businessmen so the readers too would be motivated to achieve success (21, p. 193). Donald R. Murphy,<sup>1</sup> former editor of Wallaces Farmer, thinks farm magazine editors copied the style for use in their own publications.

Theoretically, then, direct quotations from farmers add credibility to the information presented, particularly if the article deals with a new idea used successfully by the farmer

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<sup>1</sup>Personal conversation.

interviewed. And stories in which successful farmers tell how they became successful supposedly motivate other farmers to greater achievements.

Interrelated is the element of human interest or the personal quality of style. Rudolf Flesch (6) has emphasized the value of humanizing even the most technical subject matter. Flesch has, in fact, included a "human interest score" based on the number of "personal words" and "personal sentences" in a piece of writing in his widely used readability formula.

In their discussion of technical articles addressed to a specific vocational group, Klare and Buck (14) explain that people like to read about themselves. The next best thing, though, "is getting the vicarious satisfactions of reading about someone else like themselves" (14, p. 74).

Summarizing his studies on subjects that appeal to farm readers, Murphy (19) has offered a similar conclusion:

Farm people are human. Articles on family problems score well (on readership studies). And even a dirt copy article gains when the problems are stated in terms of Henry Brown of Black Hawk County and Jim Jones of Keokuk County (19, p. 169).

Fox (7), commenting on personality interviews, has suggested using some direct quotations in articles. Direct quotations help "enliven" the story; they make it more vivid, and add a pleasant change of pace, he said (7, p. 98).

Quotations from farmers, however, are costly to obtain. The telephone is a useful tool once the interviewee and the interviewer are well acquainted. Most useful farmer interviews,



though, involve time-consuming field trips and considerable expense.

The question facing practical-minded farm publication editors and writers, then, is this: Is it worth the extra time and expense to go to the field, interview several farmers, quote them and experiment station results and recommendations and stop? Or would it be enough just to quote experiment station results and stop (19, p. 111)?

The major objective of this study was to measure the influence of direct quotations from farmers on readership of farm editorial articles by farmers. Or, stated another way, this study attempted to obtain experimental evidence to help answer the question: What effect, if any, do farmer quotations have on readership?

## REVIEW OF LITERATURE

The continued use of direct quotations in farm magazine articles is sufficient evidence that editors of farm publications think such quotes are valuable. The perceived value of direct quotations, however, should be considered editorial hunches rather than a style supported by extensive research findings. Few research data--either supporting or rejecting the use of direct quotations--exist in the literature.

Most studies reported deal with readability formulas as predictors of readability. Inasmuch as the element of human interest is included as a factor in the most widely used and oftenest researched readability formula, Flesch's, the relationship between readership and readability deserves comment (13).

Klare (13) concluded that most of the studies report positive results; that is, readership is positively related to readability (13, p. 148). He also indicates, however, that in studies that measured human interest, results tended to be indeterminate or even negative (13, table, p. 149).

In a study using split versions of technical material to measure the effect of the human interest element, Klare and his associates (15) found that subjects consistently preferred the low human interest or personal style to high personal style. Content was more important in the preference of the respondents than human interest.

Subjects used in the study were Air Force personnel.

Materials used were Air Force technical materials. The respondents may have disliked the personal style because technical material is usually written in impersonal style. They also concluded that high human interest "produced no significant difference in immediate retention," though it tended to result in more material read in a given time (15, p. 287).

Ludwig (18), using a split version test in Wallaces Farmer, found that the least interesting version, as measured by the Flesch human interest scale, scored higher in a readership test than the counterpart version that the Flesch formula rated more interesting.

Ludwig personalized the copy in one version by substituting "his corn" for "the corn," for example. The results of such word substitutions produced an article that rated "dramatic" on the Flesch scale, compared with an original rating of "interesting" (18, p. 169).

Ludwig concluded that at certain levels of human interest, readers may be repelled instead of attracted. The danger of over-personalizing copy should be considered, he observed (16, p. 171).

Studying the effect of human interest factors on listenability, Carter found that among tenth-grade students, raising or lowering the human interest rating did not significantly affect listenability (13, p. 282).

Likewise, Vancura (24) found a negative relationship between human interest and television viewer ratings.

Those studies did not isolate direct quotations as the single variable influencing readership. However, since direct quotations are an important facet of the overall human interest element, results of those studies seem related to this study.

Barton and Laeuffer (1) concluded that "quote leads may be gaining an uneasy acceptance" among both city editors and journalism instructors.

As part of a final examination, a set of nine stories written by freshman journalism students at Ohio State University was sent to 132 departments of journalism and 100 city editors of metropolitan daily newspapers. Both groups were asked to rate the nine stories and give reasons for their choices.

A story in which the lead was a direct quotation was "a runaway winner" (1, p. 99). It received 12 first-place ratings from the 32 city editors who replied, and 23 from the 57 journalism instructors who replied.

Farmers' preferences for four facets of article content and treatment--utility, timeliness, personalization, and value--were studied by Lassahn (16).

Each of the facets was scaled high and low; that is, story topics were judged either high or low in personalization. A story topic rated as high in personalization was defined as follows: "Describes successful use by individual" (16, p. 81). Story topics judged low in personalization were defined as not describing "successful use by individual" (16, p. 81).

Lassahn reported that farmers "tended to accept high-value,

low-personalization, high-timeliness, and high-utility items" (16, p. 83). She suggested that because farmers seemed to prefer items of low personalization, perhaps farmers did not "identify with the people in the stories (16, p. 87). The other explanation she offered is that perhaps the farmers preferred farm information that was not presented as the experience of other people.

Murphy's (19) studies in Wallaces Farmer have attempted to measure the effects of direct quotations and personalization on readership. He described a study conducted in the September 20, 1958, issue as a split version "with personalized dirt copy against desk copy with a few quotes" (19, p. 112).

Murphy identified the personalized version as copy A, the "desk" version as copy B. He explained differences in copy as follows:

In the body of the article A, a few personal touches were added to the description of the men interviewed. A quoted two farmers not quoted in B. A had 46 lines of quotes; B had 27 lines of quotes.

It should be noted that B wasn't pure desk copy. Interviews were used, but not to the same extent as in A (19, p. 112).

Results indicated that farmers strongly preferred the personalized version. Readership, measured in terms of the number of farmers who read most of the articles, was 25 percentage points higher on the personalized version than on the "desk" version.

Different results, however, from similar studies in Wisconsin Agriculturist are also mentioned by Murphy. "Wisconsin



Agriculturist in splits has not been able to find that the farm visit and quote method pulled in more readers than desk copy" (19, p. 112).

In summary then, results of research regarding the influence of human interest on readership seem indeterminate. However, the results seem to reject more than they support the theory that personalization increases readership. The only study (Murphy's) that examined direct quotations in farm editorial copy, however, seemed to indicate that direct quotations from farmers substantially increase readership. Murphy's study, however, was completed nearly ten years ago. Farmers' preferences may have changed considerably since then.

Including direct quotations from farmers as a human interest element introduces an interrelated factor that may also influence readership--the element of source; that is, statements attributed to farmers document the source of information.

Implications regarding farmers as a source of information can be drawn from research conducted by members of a subcommittee of the North Central Rural Sociology Committee.<sup>1</sup>

Members of the research team defined the characteristics of adopters of new farm practices (20). Their generalizations were based on studies conducted in several states.

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<sup>1</sup>Subcommittee for the Study of Diffusion of Farm Practices. Members were Joe M. Bohlen, Iowa State University; C. Milton Coughenour, University of Kentucky; Herbert F. Lionberger, University of Missouri; Edward O. Moe, Michigan State University; and Everett M. Rogers, Ohio State University.



"Innovators," and to some extent "early adopters," are likely to seek information directly from scientists, and are more likely than the average farmer to accept new ideas on the basis of research (20, p. 5). The implication that direct quotations from farmers might negatively influence readership among innovators and early adopters appears valid.

The same research projects, however, revealed that farm magazines and friends and neighbors are the most important sources of information among the majority of farmers, the early and late majority groups, respectively. The researchers discovered that the majority of farmers look to early adopters as sources of information and advice about new practices.

Presumably, farm magazines obtain a majority of direct quotations from early adopters. Perhaps, then, direct quotations from other farmers positively influence readership among the late majority adopters.

Sandage (22) studied credibility of advertisements in farm magazines. He asked farmers if they generally believed farmer testimonials appearing in farm magazine advertisements. Slightly more than half (51.3 percent) answered "yes." He also asked if farmers thought results of commercial research presented in farm magazine advertisements were true. Even a larger majority (62.3 percent) answered "yes" (22, p. 457). It appears that more farmers preferred and believed the experimental results rather than farmer testimonials.

Results of Sandage's study lend credence to the hypothesis that farmers do not care where information about farming and farm products comes from so long as it is accurate, honest, and helpful. They suggest, in fact, that farmers may prefer experiment station results and recommendations to direct quotations and testimonials from other farmers.

Beal and Rogers (2) have studied the role of the agricultural scientist as a source of information. They investigated factors that affect the perception and response to a message related to a scientist and found approximately 60 percent of the farmers interested, 20 percent usually or sometimes interested, and approximately 15 percent not very interested or not interested.

One question they asked was related to one asked by Sandage. Farmers were asked in which source they would place more faith, a government scientist or a scientist who worked for a commercial concern. Fifty percent said they would have more faith in the government scientist; 40 percent said it would make no difference; and 10 percent said they didn't know.

In a study of farmers' reactions to content of the Ohio Farmer, Showman (23) found farmers most interested in articles that presented ideas that other farmers had found useful and marketing and farm price articles. Production articles--articles in which farmer quotations are used oftenest--were rated a strong preference over nonproduction articles.

Haring (8) found that farmers who were less apt to adopt

new farm practices--the "traditional" farmers--relied less heavily on information sources outside their local community than on local sources. "Modern" farmers made more use of information sources outside their local communities.

"Traditional" farmers, in fact, rated outside sources of information less favorably and were less persuaded by information originating outside the local communities (8, p. 12).

Hayes (9) studied documentation as a factor in persuasion in international propaganda. He subjected respondents to hypothetical propaganda in which he specifically attributed the information to 31 sources. He then presented nondocumented information in which the source of information was the commentator himself. The nondocumented message in international propaganda was found significantly more effective in changing opinions (9, p. 13).

#### In Summary

Definite conclusions pertaining to the influence of source of agricultural information on readership by farmers cannot be drawn from literature cited.

Results of studies cited indicate that farmers themselves are an important source of information for many farmers. The literature also indicates that farmers regard agricultural scientists, commercial as well as university scientists, as highly credible sources of information.

The studies also indicate that noninnovators, a majority of

farmers, seem to prefer local sources of information over sources outside their local communities.

#### Hypotheses

The general hypothesis is: The style in which information that deals with practical farm problems is presented in farm magazines influences readership by farmers.

Specific hypotheses tested were:

1. Readership by farmers of information in which direct quotations from other farmers are included will be higher than the same information in which direct quotations from farmers are not included.
2. Information obtained from farmers and presented by use of direct quotations will score higher in a readership test than essentially the same information presented largely as indirect quotes of a university specialist.
3. When information is presented in the words of both farmers and a university specialist, readership by farmers will be increased compared with readership of information credited to university specialists only.
4. Readership of articles in which no source of information is credited will be lower than readership of articles in which farmers are quoted.
5. Direct quotations from farmers will increase readership of articles in which a relatively new farm practice is discussed more than in an article in which an older, generally approved practice is discussed.

## METHODS

This study was designed to measure readership by Iowa farmers of two versions of five articles that appeared in Wallaces Farmer these issue dates: August 21, 1965; February 19, 1966; and September 9, 1967.

Data were collected as part of the Reader Interest Surveys conducted twice each year on editorial content and advertisements in Wallaces Farmer.

The technique employed was the split-run method of testing two versions of the same article. Approximately half the magazines circulated contained one version of the articles under study; the other half contained the counterpart version. Readership was tested by interviewing two area probability samples--one for each version--of Wallaces Farmer subscribers.

Samples for each of the three surveys represented in this study were drawn by the Wallaces Farmer Research Department. To assure proportionate representation from all areas of the state and from all farming areas within the state, samples were drawn from the five economic regions in Iowa as defined by location and type of farming (see Appendix B).

Within each economic area, six to eight counties were selected. Half the counties selected in each economic area received magazines that contained one version of the articles under study; the other half received magazines that contained the counterpart versions.



Magazines were identified as "A" magazines and "B" magazines, each comprising approximately half the magazines circulated. The two versions of an article under study were identified accordingly--the "A" version and the "B" version. Thus, samples were referred to as "A" samples and "B" samples.

So that characteristics of the "A" and "B" samples would be as nearly alike as possible, counties in each economic region were selected in pairs; that is, each pair of counties was located side by side or adjoining at one corner in checkerboard fashion (see Appendix B). An equal number of interviews was obtained from each county. Hence, an equal number of interviews was obtained on each version.

Interviewers were farm women hired and trained by the Wallaces Farmer Research Department. Interviewing began ten days after the magazine had been circulated. Interviewers were instructed to follow a mail route out of the town selected; to interview only in the open-country zone; and to stop without exception at every other farm house on the mail route until their assignments were completed.

Interviewers were supplied with complete instructions--general instructions in booklet form and specific instructions for each survey (see Appendix B). Both men and women twenty-one years of age or older were interviewed. Interviewers completed a "reader slip" on each interviewee which supplied demographic information such as age, gross income, education, and type of farming in which the respondent was engaged.



Once interviewers had established that a respondent received the magazine and that the issue had been read, the interview proceeded. Three basic questions were asked: "Did you happen to see or read anything on this page?" "How much?" "Anything else?" (See Appendix B for complete details.)

Every part of every editorial article or advertisement was assigned a code number by the Research Department. Each interviewer received copies of the issue in which these code numbers had been marked. Interviewers recorded scores on a score sheet with corresponding code numbers (12).

Two readership scores were obtained on editorial articles: (1) "Read Some" (Any), and (2) "Read Most." If a respondent remembered reading approximately half or less than half an article, the interviewer checked the "Read Any" box on the score card. If the respondent read more than half the article, the "Read Most" box was checked by the interviewer. Photographs, cutlines, and headlines received only a "Read Any" score, indicating the respondent noticed the photograph or read the cutline or headline in question.

To nullify any possible effects from interviewee fatigue, half the interviewers were instructed to begin the questioning in the center of the magazine, thereby scoring the last half of the magazine first, then to proceed with the first half. The other interviewers, of course, began the questioning on the first page of the magazine and continued through to the last page.

Data from scorecards and readerslips were transferred to IBM cards, thus enabling the Research Department to sort and cross-tabulate readership scores with demographic information.

#### Selection of Articles

Criterion applied in selecting the articles studied were established with assistance from Donald R. Murphy and others on the Wallaces Farmer editorial staff. Results from previous Reader Interest Surveys indicated that subject matter influences readership more than any other factor (19).

Murphy has observed, in fact, that if readers are keenly interested in a subject, they will "endure bad writing, small type and unattractive layout" (19, p. 161). A market outlook article is an example of subject matter that appeals to Iowa farmers. Hog and corn articles are others with relatively high inherent reader appeal. The first criterion followed in selecting articles, then, was to avoid subjects with inherently high reader interest.

To establish a broad potential reader base, an effort was made to select subject matter in which virtually every farmer was involved in his farming operation. That objective was achieved in all but two of the articles studied.

To test hypothesis five, articles dealing with relatively new farm practices and also with older, generally approved practices were selected. Except for the September 9, 1967, survey, two articles were prepared as splits for each issue. One

of the articles in each issue dealt with a relatively new idea or farm practice; the other dealt with an older, generally approved farm practice.

Inasmuch as possible, all variables except the one tested, farmer quotes, were the same for both versions of the articles. Headlines, length, page number, and photographs (where used) were the same in all cases. Likewise, both versions were written by the same person.

The two articles tested in each issue were positioned in the magazine to offset any possible reader position preference; that is, reader tendency to read more articles located in the front of the magazine than in the back or vice versa. In a 90-page issue, for example, one of the two articles would appear on page 30, the other on page 60.

Another technique took advantage of splitting two articles in each issue. If the farmer-quote version of the article on page 30 was used in the "A" magazine, for example, the no-farmer-quote version of the article on page 60 was used in the "A" magazine. Then, in the "B" magazine, the two versions, farmer-quote and no-farmer-quote, were reversed. Use of the technique, however, precluded analyzing results by any method other than combined scores of the two articles unless readership of both samples was essentially the same.

To test hypotheses two through four information in three no-farmer-quote versions was attributed to a university specialist or specialists and a commercial specialist. In two

no-farmer-quote versions, sources were not credited. Thus, Wallaces Farmer became the source.

Issue dates in which split-runs were tested, headlines of the articles studied, pages on which the articles in each issue appeared, size of samples, and location of each version are shown in Table I. Reproductions of both versions of each article studied are in Appendix A.

Table I. Issue dates, size of samples, headlines, and location of each article and each version of articles studied

Issue date	Headline	"A" Magazine	"B" Magazine	Size of samples
August 21, 1965	How to handle new feeder cattle	Page 30, no farmer-quotes	Page 30, farmer-quotes	220 men, 110 each A and B 200 women, 100 each A and B
	Corn drying systems to fit the farm	Page 60, farmer-quotes	Page 60, no- farmer-quotes	
February 19, 1966	Big tractors... Efficiency may outweigh cost	Pages 98, 99, no-farmer- quotes	Pages 98, 99, farmer-quotes	220 men, 110 each A and B 200 women, 100 each A and B
	Liming boosts yields of most Iowa crops	Page 20, farmer-quotes	Page 20, no- farmer-quotes	
September 9, 1967	Farm records tell the story	Page 64, farmer-quotes	Page 64, no- farmer-quotes	220 men, 110 each A and B 200 women, 100 each A and B

## FINDINGS

Data collected were statistically analyzed with assistance from the Wallaces Farmer Research Department. The Chi Square test of significance (one degree of freedom) was used to test the difference in reader interest scores (5, p. 149). "Read Some" and "Read Most" scores for both men and women were tested on all articles studied. If the difference in raw scores (number of readers) was not statistically significant at the 5 percent level, it was accepted that no real difference in readership existed.

Scores of individual articles and combined scores of both articles in each issue were tested for significant difference. "Read Most" scores, however, were considered the most valuable measure of readership.

Two articles were prepared for the August 21, 1965, issue. One, page 30, was headlined, "How to handle new feeder cattle." The other, page 60, was, "Corn drying systems to fit the farm." Readership of both versions by men and women is shown in Table II.

The combined "Read Most" scores of men for the two articles, given in the lower left portion of the table, shows that farmer-quotes scored higher than no-farmer-quotes. The no-farmer-quote version of the feeder cattle article, however, outscored the farmer-quote version. Results were reversed on the corn drying systems article. The farmer-quote version outscored the no-farmer-quote version.





In no instance was the difference in readership significant at the 5 percent level. Table III shows individual and combined "Read Some" and "Read Most" scores for men, Chi Square values, and levels of significance.

Table III. Chi Square for difference between men's scores obtained from two versions of articles studied in the August 21, 1965, Wallaces Farmer

	Feeder cattle article, p.30 N = 110		Drying systems article, p. 60 N = 110		Combined scores N = 220	
	RS*	RM**	RS*	RM**	RS*	RM**
Farmer quotes	55	48	67	52	122	100
No-farmer quotes	65	51	55	41	120	92
	* $\chi^2 = 1.833$ p < .20		* $\chi^2 = 2.6497$ p < .20		* $\chi^2 = .0367$ p < .90	
	** $\chi^2 = .1653$ p < .70		** $\chi^2 = 2.2538$ p < .20		** $\chi^2 = .5913$ p < .50	

Women's scores from individual articles were opposite from men's scores; that is, more women read the farmer-quote version of the feeder cattle article, but fewer read the farmer-quote version of the drying systems article. Table IV shows "Read Some" and "Read Most" scores for women, Chi Square values, and levels of significance. The difference in "Read Some" scores for the drying article was significant at the 5 percent level. There was no significant difference in "Read Most" scores,

however. Nor was the difference in the combined scores of women for the two articles statistically significant.

Table IV. Chi Square for difference between women's scores obtained from two versions of articles studied in the August 21, 1965, Wallaces Farmer

	Feeder cattle article, p.30 N = 100		Drying systems article, p. 60 N = 100		Combined scores N = 200	
	RS*	RM**	RS*	RM**	RS*	RM**
Farmer quotes	13	6	7	3	20	9
No-farmer quotes	7	5	16	9	23	14
	* $\chi^2 = 2.000$ p < .20		* $\chi^2 = 3.9794$ p < .05		* $\chi^2 = .2666$ p < .70	
	** $\chi^2 = .000$ p > .99		** $\chi^2 = 2.216$ p < .20		** $\chi^2 = 1.2282$ p < .30	

Similar splits were tested in the February 19, 1966, issue. One article, entitled "Timing boosts yields of most Iowa crops," appeared on page 20. The other, "Big tractors . . . Efficiency may outweigh cost," appeared on page 98. "Read Some," "Read Most," and combined scores for both articles for men and women are shown in Table V. Consistently higher "Read Most" scores for men were obtained from the no-farmer-quote version of both articles. The no-farmer-quote versions scored slightly higher among women readers. However, the differences in reader scores of the two versions for men or women were not significantly different.

Table V. Reader scores for farmer-quote and no-farmer-quote versions of two articles in the February 19, 1966, Wallaces Farmer

MEN				WOMEN				
	No.	%	No-farmer quotes	No.	%	Farmer quotes	No-farmer quotes	
Liming boosts yields of most Iowa crops								
Read some	74	(A) 67.3	73	(B) 66.4	9	(A) --	11	(B) --
Read most	59	53.6	62	56.4	6	--	6	--
Reader loss	15	13.7	11	10.0	3	--	5	--
Big tractors . . . Efficiency may outweigh cost								
Read some	59	(B) 53.6	68	(A) 61.8	5	(B) --	9	(A) --
Read most	48	43.6	56	50.9	4	--	5	--
Reader loss	11	10.0	12	10.9	1	--	4	--
Combined scores								
Read some	133	60.5	141	64.1	14	--	20	--
Read most	107	48.6	118	53.6	10	--	11	--
Reader loss	26	11.9	23	10.5	4	--	9	--

Chi Square for scores of the two versions for men and women readers are shown in Tables VI and VII, respectively.

Table VI. Chi Square for difference between men's scores obtained from two versions of articles studied in the February 19, 1966, Wallaces Farmer

	Liming article, p.20 N = 110		Big tractor article, p. 98 N = 110		Combined scores N = 220	
	RS*	RM**	RS*	RM**	RS*	RM**
Farmer quotes	74	59	59	48	133	107
No-farmer quotes	73	62	68	56	141	118
	*X <sup>2</sup> = .0205 p < .90		*X <sup>2</sup> = 1.5088 p < .30		*X <sup>2</sup> = .6191 p < .50	
	**X <sup>2</sup> = .1653 p < .70		**X <sup>2</sup> = 1.1671 p < .30		**X <sup>2</sup> = 1.1006 p < .30	

Table VII. Chi Square for difference between women's scores obtained from two versions of articles studied in the February 19, 1966, Wallaces Farmer

	Liming article, p.20 N = 100		Big tractor article, p. 98 N = 100		Combined scores N = 200	
	RS*	RM**	RS*	RM**	RS*	RM**
Farmer quotes	9	6	5	4	14	10
No-farmer quotes	11	6	9	5	20	11
	*X <sup>2</sup> = .2222 p < .70		*X <sup>2</sup> = .1920 p < .70		*X <sup>2</sup> = 1.1572 p < .30	
	**X <sup>2</sup> = .0886 p < .80		**X <sup>2</sup> = .4654 p < .50		**X <sup>2</sup> = .0503 p < .90	

One article of theoretical interest to all readers appeared on page 64 of the September 9, 1967, issue. Entitled, "Farm records tell the story," its no-farmer-quote version was read by more men and more women. However, difference in reader scores from the two versions was not significant. Reader interest scores and Chi Square for difference are shown in Tables VIII and IX, respectively.

Table VIII. Reader scores for farmer-quote and no-farmer-quote versions of an article in the September 9, 1967, Wallaces Farmer

	MEN				WOMEN			
	Farmer quotes		No-farmer quotes		Farmer quotes		No-farmer quotes	
	No.	%	No.	%	No.	%	No.	%
	Farm records tell the story							
Read some	54 (A)	49.1	60 (B)	54.5	28 (A)	--	31 (B)	--
Read most	41	37.3	46	41.8	19	--	22	--
Reader loss	13	11.8	14	12.7	9	--	9	--



Table IX. Chi Square for difference between scores obtained from two versions of the article studied in the September 9, 1967, Wallaces Farmer

Farm records tell the story				
	MEN N = 110		WOMEN N = 100	
	RS*	RM**	RS*	RM**
Farmer-quotes	54	41	28	19
No-farmer-quotes	60	46	31	22

* $\chi^2$ =	.6554	* $\chi^2$ =	.2164
p <	.50	p <	.70
** $\chi^2$ =	.4263	** $\chi^2$ =	.2761
p <	.70	p <	.70

A significant difference between reader scores from the two versions of the five articles studied occurred only once. In that instance, the no-farmer-quote version received the highest "Read Some" score among women. While the difference was statistically significant, "Read Some" scores for women are not considered highly important measures of reader preference for style in presenting farm production-related information.

In four of the five articles studied, the no-farmer-quote version received the highest "Read Most" score among men. Among women, the no-farmer-quote version received the highest "Read Most" score three times; the farmer-quote version scored highest once; and scores were the same in one instance.

Other studies (13) have indicated that a positive

relationship exists between readership and readability. Therefore, Flesch "Reading Ease" and "Human Interest" scores (6) were determined for all articles tested. Table X shows Flesch scores for both versions of each article. With one exception, the feeder cattle article, variations in "Reading Ease" scores between versions were not considered large enough to affect readability. Reader scores obtained from the feeder cattle article were highest for the less readable version, the no-farmer-quote version (rated "Fairly Difficult" reading). The farmer-quote version rated "Easy" on the Flesch readability scale.

Therefore, it seems that the apparent difference in readability between the two versions had little or no effect on readership. If the lower readability of the no-farmer-quote version did, in fact, depress readership, it would have scored even higher with equal readability.

Variations in "Human Interest" scores of the two versions resulted from the variable being tested--farmer quotations. Thus, the farmer-quote version in each case rated higher on the Flesch "Human Interest" scale.

The findings of this study did not support the specific hypotheses tested. With one exception, higher reader interest scores were obtained from articles in which direct quotations from farmers were not included. Therefore, hypothesis one was rejected.

In one article, "How to handle new feeder cattle,"

Table X. Flesh "Reading Ease" and "Human Interest" scores for farmer-quote and no-farmer-quote versions of articles studied

	Farmer-quote version	No-farmer-quote version
	How to handle new feeder cattle	
Reading ease	88 (easy)	57 (fairly difficult)
Human interest	23 (interesting)	13 (mildly interesting)
	Corn drying systems to fit the farm	
Reading ease	81 (easy)	80 (easy)
Human interest	43 (very interesting)	12 (mildly interesting)
	Big tractors . . . Efficiency may outweigh cost	
Reading ease	76 (fairly easy)	71 (fairly easy)
Human interest	39 (interesting)	21 (interesting)
	Liming boosts yields of most Iowa crops	
Reading ease	53 (fairly difficult)	48 (fairly difficult)
Human interest	10 (mildly interesting)	3 (dull)
	Farm records tell the story	
Reading ease	76 (fairly easy)	70 (fairly easy)
Human interest	42 (very interesting)	9 (dull)

\*Very difficult = 0 - 30; Difficult = 30 - 45; Fairly difficult = 45 - 60; Standard = 60 - 70; Fairly easy = 70 - 80; Easy = 80 - 90; Very easy = 90 - 100.

\*\*Dull = 0 - 10; Mildly interesting = 10 - 20; Interesting = 20 - 40; Very interesting = 40 - 60; Dramatic = 60 - 100.

information in the no-farmer-quote version was attributed to an Iowa State University extension veterinarian. The counterpart version credited only farmers as sources. More farmers read the no-farmer-quote version; therefore, hypothesis two was rejected.

This study's findings neither support nor reject hypothesis three. In two articles, those on big tractors and on corn drying systems, information presented in the farmer-quote version was attributed to farmers and Iowa State University specialists. The no-farmer-quote version credited the information to Iowa State University specialists. Reader interest scores for men obtained from the farmer-quote version of the corn drying systems article were higher than its counterpart version. The no-farmer-quote version of the big tractor article scored higher than its farmer-quote version. Hypothesis three, therefore, was neither accepted nor rejected.

No sources of information were credited in the no-farmer-quote versions of the liming article or the farm records article. "Read Most" scores obtained were higher than "Read Most" scores obtained from the farmer-quote versions. The "Read Some" score for men obtained from the farmer-quote version of the liming article was slightly higher than the no-farmer-quote version, however. Because reader preferences are best measured by "Read Most" scores, hypothesis four was rejected.

Hypothesis five predicted farmer quotes would positively influence readership to a greater extent when used with articles dealing with relatively new farm practices than when used with

articles dealing with older, generally approved farm practices. Results of the August 21, 1965, and the February 19, 1966, split-runs only partially support hypothesis five. Results from the corn drying article, which discussed a relatively new farm practice, compared with the feeder cattle article supported hypothesis five. The same effects from farmer quotes, however, were not obtained from the big tractor article (relatively new) when compared with the liming article in the same issue.

## SUMMARY AND DISCUSSION

This study attempted experimentally to measure the influence of direct quotations from farmers on readership of farm production-related articles in farm magazines. Earlier research in related areas gave inconsistent results. Generally, however, investigations into the effects of human interest or personal aspects of style indicated no significant beneficial effects from personalizing a particular communication. Likewise, earlier investigations offered no definite conclusions regarding the value of farmer quotes as sources of information in farm editorial matter.

Readership of two versions--farmer-quote and no-farmer-quote--of five articles that appeared in Wallaces Farmer was tested by interviewing two area probability samples of Iowa farmers, all Wallaces Farmer readers.

Results indicate that direct quotations from farmers exert no significant influence, either positively or negatively, on readership by farmers. Generally lower reader interest scores, however, were obtained from the versions that contained direct quotations from farmers. Differences were not statistically significant ( $P < 0.05$ ).

Readership of information in which university specialists were credited as sources was essentially the same as readership of information in which farmers were quoted. When no source of information was credited in the no-farmer-quote version, thus



attributing the information to Wallaces Farmer, the difference in reader interest scores was not statistically significant.

Likewise, the effect of farmer quotations on articles dealing with a relatively new farm practice was essentially no different from the effect of farmer quotations in articles dealing with older, generally approved farm practice.

#### Discussion

While difference in scores of the two versions was not statistically significant, scores of versions in which farmer quotations had been omitted tended to be consistently higher than versions in which farmers were quoted. That indicates farmers may prefer information from university specialists over the same information from other farmers.

Conclusive interpretations regarding source preference, however, cannot be formulated from the findings of this study. Perhaps, the findings reflect changing attitudes among farmers toward scientific agriculture and the role of agricultural scientists as sources of scientific production-related information.

Donald R. Murphy<sup>1</sup> said that several years ago one sure way to depress readership of articles in Wallaces Farmer was to quote Iowa State University specialists. This study's findings indicate that is no longer true.

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<sup>1</sup>Personal conversation.

Recent technological advancements in agriculture may at least partially account for the apparent slight preference for information from university experts. To remain competitive, farmers have had to adopt technological advances as rapidly as possible. The role of an objective, knowledgeable source of scientific agricultural information among an increasingly scientifically-minded farm population becomes obvious.

For example, despite its "Fairly Difficult" Flesch reading ease rating, the no-farmer-quote version of the feeder cattle article outscored the farmer-quote version that rated "Easy" reading. An Iowa State University extension veterinarian was quoted in the no-farmer-quote version. Reading ease rating dropped because several scientific terms, like "infectious bovine rhinotracheitis" were used. The farmer-quote version discussed management tips veteran cattle feeders use to start new feeder cattle.

That the no-farmer-quote version earned a higher reader interest score may have resulted from more information on feeder cattle diseases. However, that advantage should have been partially offset by its "Fairly Difficult" reading ease rating.

Results of the feeder cattle article indicate farmers who subscribe to Wallaces Farmer prefer specific scientific information obtained from a specialist over advice or tips from other farmers.

Scores from the corn drying systems article seem to support the idea that for some articles farmers may prefer other

farmers as sources of information. Both versions of the drying article attempted a brief explanation of the various corn drying systems available to farmers, and also to explain where each might most appropriately be used. The explanation that farmers who were using dryers were quoted, and therefore would be considered by other farmers as knowledgeable as a university specialist on this subject seems logical in this instance, particularly if the university specialist is giving general information rather than results of specific research. Most farmers do not expect other farmers to be especially knowledgeable about feeder cattle diseases. They would, perhaps, expect a farmer using a drying system to be knowledgeable about its practicality and operation.

Except for the liming article, that reasoning failed to explain results of the other splits. Farmers would not, perhaps, expect other farmers to know about calcium carbonate equivalent and limestone purity. They would expect the writer of a liming article, the source in this instance, to be knowledgeable in that area.

Likewise, farmers might expect other farmers who systematically followed an accurate farm accounting system to be knowledgeable and reliable sources. Yet reader scores for the farmer-quote version of the farm records article were lower than the no-farmer-quote version in which no source was quoted.

The same reader interest pattern was true on the big tractor article. Farmers would likely expect other farmers who

were using big tractors to be reliable sources of information about them. Yet the no-farmer-quote version, which quoted university specialists and a commercial specialist, scored higher than the farmer-quote version.

Rapidly declining numbers of farmers and farms may also be influencing farmers' preferences for style and sources as measured in reader interest surveys. January 1, 1957, farm population in Iowa totaled 715,389 (10). Total Iowa farm population January 1, 1967, was 577,136 (11). Presumably, farmers unable to compete--the noninnovators and laggards--comprised the majority of the 138,253 persons who left the farm during the past ten years. Farmers remaining on farms theoretically are more competitive and innovative--those more likely to prefer scientific information from university specialists than from other farmers.

Late adopters and laggards previously preferred to get information from neighbors and friends. Innovators and early adopters sought information from university and commercial research sources (2). If most laggards and late adopters have moved from farms, which appears to be the case among readers of Wallaces Farmer, farmers remaining on farms now would be almost exclusively those with no preference for information from other farmers.

Results of this study also indicate that the conclusion of Lazarsfeld et al. (17) more than twenty years ago regarding farm magazines and other specialized magazines is true today. They

found that a specialized magazine is accepted by its readers as a reliable spokesman for a cause in which the reader "is greatly interested and with which he identifies himself" (17, p. 136).

Farmers' apparent readiness to accept information in which no source was credited indicates that Iowa farmers accept Wallaces Farmer as a reliable source of farm production-related information.

#### Implications

Results of this study indicate that direct quotations from farmers are not requisites for maintaining readership of farm production-related articles in farm magazines read by Iowa farmers. The implication that direct quotations have no value in farm magazine articles cannot be drawn from this study, however. Rather, the findings suggest a priority of information sources and writing style for farm magazine editors and writers.

For farm production-related articles, it appears that information attributed to trained experts who are specialists on the subject matter covered can be used without fear of depressing readership. University specialists appear to be among the best sources of information available to farm magazine writers.

Names of farmers and quotations from farmers interjected in articles merely to add human interest or personal flavor appear to have little or no readership value. Quoting a trained specialist appears to be more beneficial.

This study seems to support the hypothesis that readership



of "success motivation" articles in which one successful farmer offers how-to-do-it information will be lower than the same information presented from university specialists. . . .

On the basis of results obtained from the feeder cattle and liming articles, it appears scientific terms can be used more freely by farm writers. In neither article did scientific terms seem to depress readership.

An influence corollary with farmer quotations in farm magazines was not measured in this study. Yet it deserves comment. Perhaps more significant than using farmer quotes is the contact with farmers usually required to obtain quotations from farmers.

Klare and Buck (14) have emphasized the value of writers knowing their readers: "Ideally, the writer should live among his readers, hear them speak, know their problems and beliefs. He can learn what they want to read, and how they want it written" (14, p. 67). Editors relying exclusively on experts for information still would need to know subjects and problems that farmers wanted discussed.

#### Suggestions for Further Research

The results and unanswered questions suggest possibilities for further research. First, the relationship between readership and credibility of information presented deserves investigation. For example, would credibility ratings of the articles in this study vary in relation to readership? Or, is



there a difference between credibility of a farmer and a university specialist in the minds of farmers? Other sources, such as commercial researchers identified with the name of their company, could also be used. Then credibility and preference for source of farmers, university specialists, and commercial researchers could be measured. A simple question card used by interviewers could simply and inexpensively supply farmers' feelings or attitudes regarding credibility.

A study in which "success motivation" articles that quote one successful farmer, perhaps a well-known farmer, are compared with the same information presented in the words of several farmers or farmers and university specialists seems appropriate.

This study also suggests further study of scientific terms and their influence on readership. A split-run study of readership of a scientific version and a version in which nonscientific terms were substituted could add needed information.

And finally, perhaps the same relationship between farmer quotes and readership noted in this study would not be observed in a similar study in which the articles discussed different subjects. Findings of such a study could refine farmer preference for style and source of information among farmers.

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APPENDIX A

Plate I. Reproduction of the feeder cattle articles, August 21, 1965, Wallaces Farmer

## How to handle new feeder cattle

**F**EEDER CATTLE need special attention when they first arrive on your farm. It's like veteran cattle feeder R. E. Dunphy, Humbolt county, Iowa, puts it:

"Feeders get pushed around during shipping. They brace themselves during the whole trip and get all tired out. Their stomachs get tired too.

"It's just like eating breakfast at 5 in the morning and working hard all day without eating or drinking a thing. If you fill up on food at 8 or 9 that night, you'll be sick too," Dunphy explains.

That's why Dunphy feeds sparingly the first few days. "I feed just a little feed—mostly oats and a little cracked corn with vitamin A in it, plus a little chopped hay."

Dunphy has fed cattle for almost 40 years. "I've found that most calves will eat oats—they seem to like it."

Frank Reding, Cerro Gordo county, Iowa, feeds 400-450 head a year. Like Dunphy, he believes feeding vitamin A is worthwhile. Last year, tho, instead of feeding it, he gave all calves a vitamin A injection.

"The results were real good," he says. "I plan on using it again this year."

Reding goes along with Dunphy on feeding. "I give them mostly straw or hay and very little grain. If I feed grain, it's just oats. And we give them plenty of fresh water and lots of rest for the first week," says Reding.

Most cattle feeders prefer cattle fresh from the range. "But you can't always deal with ranchers," points out Walt Boehlje, Cerro Gordo county, Iowa feeder.

Boehlje feeds in the neighborhood of 700 to 750 cattle a year, buys mostly calves.

"We keep them confined in a small lot for the first week or 10 days, feed mostly haylage and oats.

"But I haven't found a way to handle them that's sure. We've tried a lot of different ways, but we usually end up having to treat some individuals."

Shipping fever is the biggest troublemaker, Boehlje says. And most cattlemen agree.

"On some bunches, we've had our vet come out every day and check them," comments Boehlje. "But it depends on the cattle. I think there are times when you have to do that. We treat quite a few ourselves, too."

Dunphy looks at treating for shipping fever this way: "You

can go ahead and give them all a shot right away. But that's just another wrestle. And I don't like to mess with them until I have to.

"We use our vet," Dunphy quickly adds, "but not unless we need him. A vet can't go out and sit on a bunk and watch the cattle like I can."

All cattlemen agree that watching is one of the most important things you can do. Here's a tip from Dunphy on what to watch for.

"You can tell when a calf is getting sick by watching his rear flank. He'll show there before he will any place else. When that rear flank and the area just above it move in and out, I call my vet. I've done this for several years and it works.

"That's why I sit on a bunk and watch them. And I look at them 2 or 3 times a day during the first 10 days."

All of Dunphy's cattle—he feeds about 100 yearlings and 250 calves each year—are treated for grubs sometime during the feeding period.

"Packers shy away from grubby cattle," he reasons. "They'll buy them a little better if they're clean."

He treats for grubs in about November, uses a chemical mixed with the protein. "It's about a 2-week deal," he explains, "and using it in the feed is about as easy as anything."

After feeders have been on the place for 3 or 4 weeks, they are wormed with phenothiazine mixed in the feed. And a hack scratcher plus spraying controls lice.

Most feeders use the following guide to determine when to treat cattle for grubs. Time of treatment depends on where cattle spent the summer.

Cattle from	Treat
Texas, Southwest	April 1-Sept. 1
Ohio, S.W., Ark.	May 1-Sept. 1
Iowa, Neb., Mo.,	June 1-Nov. 1
Calif., Indiana, Wyo.,	July 1-Nov. 15
Mont., Canada	Sept. 1-Dec. 1



## How to handle new feeder cattle

**G**ETTING feeder cattle off to a good start lays the groundwork for future profits.

There's no single method or specific set of recommendations that can be given for all cattle. Each group of cattle has been exposed to different conditions. And age, origin, distance moved, and condition make a big difference.

Veteran cattle feeders, tho, use several management practices and preventive measures that help get feeders off to a good start.

In a nutshell, the best advice is to let cattle rest when they first arrive at your farm. If pasture or stubble is available, turn them out to graze if weather is good. If weather is bad, they are best off in a lot with a well-bedded open shed. They need plenty of water, and should be fed only grass or grass-legume hay for the first few days.

Shipping fever is usually the big troublemaker with newly arrived feeder cattle. Soundest advice is to keep a close eye on cattle for at least 3 weeks. If you find an animal that is breathing heavily and doesn't want to move, treat it immediately.

Best time to start for shipping fever is just as soon as the animal refuses to eat. And rapid treatment is a must.

Some cattlemen have their veterinarian treat feeders for shipping fever as soon as they arrive on the farm. Then the veterinarian checks the cattle every day and treats if necessary.

Dr. John Herrick, ISU extension veterinarian, says veterinarians use various drugs to prevent shipping fever. Hemorrhagic septicemia antiserum, antibiotics, and sulfa drugs have been used successfully, according to Herrick.

"It's extremely difficult to recommend the type and amount of preventive drugs because the animal's condition, size, and degree of illness determines which drug is used," says Herrick.

Herrick says the Mucosal Disease Complex—infectious bovine rhinotracheitis, mucosal disease, and virus diarrhea—is often confused with shipping fever.

Symptoms are discharges from the nose and eyes, snoring, and congested areas in the mucous membranes. Diarrhea is also present in some cases.

Laboratory tests and close observation are usually necessary to accurately determine which of

the mucosal diseases is present, according to Herrick.

Other health problems to watch for when cattle arrive in the feedlot are internal and external parasites, coccidiosis, foot rot, leptospirosis, blood, anthrax, blackleg, and injuries.

"Very few range cattle are ever completely free of lice," cautions Herrick. "And cattle with lice seldom perform well."

Fortunately, lice are controlled with the same insecticide used to control grubs. And grub damage to hides and carcasses of Iowa cattle runn about \$10 million a year! So you can be well paid for the time and money it takes to control the costly pest.

When you treat for grubs depends on the origin of the cattle—where they were during the egg laying season.

Cattle from	Treat
Texas, Southwest	April 1-August 1
Ohio, S.W., Ark.	May 1-Sept. 1
Iowa, Neb., Mo., Colo.,	June 1-Nov. 1
Indiana, Wyo., Mont.,	July 1-Nov. 15
Canada	Sept. 1-Dec. 1

Several chemicals, available as spray, pour-on, feed additives, or dip, can be used to control grubs and lice.

Some cattle, especially southern cattle, are infested with internal parasites. Worming cattle of this type is a good bet for boosting gains in the feedlot.

Herrick says it doesn't pay to vaccinate against infectious bovine rhinotracheitis, virus diarrhea, and leptospirosis when cattle are sick.

"A general rule is never vaccinate any animal while it is under stress. Calves should rest for at least 21 days before vaccination. Yearlings can be vaccinated sooner," he cautions.

Feeding new calves a vitamin A supplement works for some cattle feeders. Herrick says a daily intake of at least 30,000 units per animal for the first 10 days is worthwhile.





Plate II. Reproduction of the farmer-quote version, corn drying systems article, August 21, 1965, Wallaces Farmer



**Drying** shelled corn is becoming a common practice on many Iowa farms. In 1964 alone, Iowa farmers added enough drying bins and portable dryers to handle 8.6 million bushels of shelled corn.

## Corn drying systems to fit the farm

**D**RYING shelled corn at harvest looks like a paying proposition to me. We're sold on it," LeRoy Bonnstetter, Palo Alto county, Iowa corn grower, speaks for a lot of Iowa corn growers with that statement.

In fact, Iowa farmers bought enough drying bins and portable dryers in 1964 to handle 8.6 million bushels of corn. And during the past 10 years, capacity of drying equipment sold in Iowa adds up to almost 56 million bushels.

Bonnstetter puts his finger on the big reason for this trend. "I think we're saving at least 6 to 8 bushels per acre by harvesting early. And shelled corn is a lot easier to handle."

The switch to drying came last year for Bonnstetter and his three brothers. They own a corn combine in partnership and work together during harvest.

"Our cribs were shot," he adds, "so we had to do something. We bought our first 10,000-bushel drying bin last year, and another this summer."

There are three basic systems of drying shelled corn—multiple layer, batch bin, and portable batch.

With multiple layer drying, corn is dried and stored in the same bin. Wet corn is dried in layers about 4 to 5 feet deep. After one layer dries, another layer of wet corn is added. Drying temperatures run about 15 to 20 degrees above outside temperatures.

Bin batch drying uses the same drying equipment as multiple layer drying. Instead of 4 to 5 feet of wet corn, only 2½ to 3 feet are dried at a time. It's dried, cooled, and then unloaded into other storage. Then another batch is dried. At the end of the season, the bin can be filled using multiple layer drying. Drying temperatures run from 120 to 140 degrees.

The Bonnstetter brothers use the bin batch method. Together they'll dry about 400 acres of corn this year.

"We combine a batch of about 1,500 bushels during the day," he explains, "then dry it at night. We run the dryer until about 6 o'clock the next morning, then run only the fan for 2 or 2½ hours to cool it. And you'd better cool it down or you'll have trouble," he cautions.

Bonnstetter says they shut the heater off when all but the top 6 inches in the layer is dried. "There's enough heat in the corn to dry the top 6 inches while it's cooling," he adds. "But you can overdry, too."

After cooling, corn is augered out and hauled to other storage. And the bin is ready for another batch.

"Last year was our first year of drying," says Roger Jensen, Kosuth county, Iowa. "And I sure don't know all there is to know about drying corn."

Jensen's multiple layer dried about 80 of his 120 acres in a 27-foot, 8,700-bushel drying bin.

"I still have some good ear corn storage, but I needed shelled corn storage," he says. "I could nearly pay for the bin from storage payments."

"We batch dry the first batch of about 1,800 bushels," he points out, "with drying temperature about 140 degrees. The next day we add 4 to 6-foot layer but cut the heat to 60 to 70 degrees, depending on humidity."

This dries in a couple of days, Jensen says, and then another 4 to 6-foot layer is added. He explains, too, that the time to add more wet corn is when there are still 12-18 inches of undried corn in the previous layer.

"And you shouldn't add more than about 4 feet each time," he adds. "It takes about 18 hours

(Continued on next page)

## Corn drying

(Continued from preceding page)

to dry 10 to 12 inches of wet corn, so you need to wait until that layer dries before adding another," Jensen explains.

It's easy to tell when the drying zone reaches the last 12 inches. "Just probe with a broom or pitchfork handle," suggests Jensen. "It pushes easy when corn is dry, but hard when it's wet."

Both Jensen and Bonnstetter say it's important to start drying early in the season. "By the time shelled corn is down to 26 or 27 percent moisture, says Jensen.

Larry Van Fossen, ISU ag engineer, says you should be finished drying by the time outside temperatures drop below 50 degrees. "Otherwise drying time will be too long, and costs will rise accordingly," says Van Fossen.

Total drying costs run about the same for multiple layer or bin batch systems, according to Van Fossen. Multiple layer uses less labor. But bin batch dries faster with the same equipment.

"If you need both new storage and drying equipment, multiple layer is your best choice," advises Van Fossen. "But if you have storage space, and need equipment, the bin in which you can bin batch and multiple layer dry is best."

One other thing about drying in bins. A grain spreader inside the bin is just about a must. Without it, chaff and fine particles restrict air flow. Bonnstetter says they plan to screen out the fine particles as corn is augered into the bins.

Leslie Dunton and son-in-law Bud Berger, Cerro Gordo county, Iowa, have dried for 8 years with a 400-bushel recirculating portable batch dryer. They dry about 265 acres a year, starting in late September—as soon as corn reaches 30 percent moisture.

Portable batch dryers fit best where storage space is scattered. But that's not the case with Dunton and Berger. "Bin dryers weren't as well developed at the time we switched to drying," they explain.

"You can probably dry about a cent a bushel cheaper with a bin than with a portable," explains Dunton. "But we've been well satisfied. We don't figure drying costs—it pays."

Early harvest saves more corn, from 3 to 5 bushels early in the season to 5 to 10 later on, figures Dunton. "And it lets us fall plow. We figure that's worth 7 to 10 bushels an acre."

If you're in the market for a drying system, it will pay to check costs and advantages of the various systems. You can get additional information from your county extension director and dealers.



Plate III. Reproduction of the no-farmer-quote version, corn drying systems article, August 21, 1965, Wallaces Farmer



**Drying** shelled corn is becoming a common practice on many Iowa farms. In 1964 alone, Iowa farmers added enough drying bins and portable dryers to handle 8.6 million bushels of shelled corn.

## Corn drying systems to fit the farm

**M**ORE IOWA corn growers will harvest early and mechanically dry corn this fall than ever before. Capacity of drying bins and portable dryers sold in Iowa during the last 10 years adds up to almost 56 million bushels of corn. In 1964 alone, farmers bought enough drying bins and portable dryers to handle 8.6 million bushels, according to a survey of manufacturers conducted by Larry Van Fossen, ISU ag engineer.

Big reason for the trend toward drying is the reduction in field losses that goes with early harvesting. Drying is flexible, too. Corn can be sold or fed to livestock. High moisture corn must be fed.

Dry shelled corn can be stored in low-cost, low-maintenance, rodent-free structures. And it's easy to handle.

There are three basic systems of drying corn—multiple layer, hatch bin, and portable batch, or continuous flow.

With multiple layer drying, corn is dried and stored in the same bin. Wet corn is dried in layers up to 4 or 5 feet deep. After one layer dries, another layer of wet corn is added.

Temperatures used while drying run only 15 to 20 degrees above outside temperatures. Up to 20 feet of corn can be dried with multiple layer systems.

Bin batch drying uses the same drying equipment as multiple layer drying. Instead of 4 to 5 feet of wet corn, only 2½ to 3 feet of corn are dried at a time. It's dried, cooled, and then unloaded into other storage. Then another batch is dried.

At the end of the season, the bin can be filled, using multiple

layer drying. Drying is faster with bin batch because air is heated to 120 to 140 degrees.

Total drying costs run about the same for multiple layer or bin batch systems, according to Van Fossen. Multiple layer systems use less labor. But bin batch systems dry faster with the same equipment.

"If you need both new storage and drying equipment, multiple layer is your best choice," advises Van Fossen. "But if you have storage space, and need drying equipment, then the bin in which you can bin batch and multiple layer dry is best."

With multiple layer drying, some type of filling schedule is needed. Manufacturers usually furnish such a schedule, but here's the kind of schedule you might follow with a multiple layer dryer.

Harvest enough corn the first day to fill the bin with about 2½ feet of wet corn. Dry this overnight by adjusting the heater so it raises the temperature of the drying air to 120 to 140 degrees.

The next morning reset the heater to operate as a multiple layer dryer. Then begin adding 3½ feet of corn to the bin, to the 8-foot level.

When this is dry, more wet corn can be added. But after the 8-foot level, no more than 4 feet of wet corn should be drying in the bin at any time.

Layer drying generally dries about 10 inches in 24 hours. So there will usually be a 3 to 4-day delay between each 4-foot layer for drying.

Best time to add another layer of wet corn is when there are still 8 to 12 inches of undried corn in the previous layer.

You can tell when the drying

(Continued on next page)

## Corn drying

(Continued from preceding page)

zone is getting near the surface by probing with a broom or pitchfork handle. The probe pushes hard thru wet corn, easy thru dry corn.

A grain spreader inside the bin is just about a must while filling the bin. A good spreader distributes broken kernels and chaff, so they don't accumulate in one spot and restrict air flow.

When used as a bin batch dryer, more heat and greater air flow are used. Layer depth is usually 2½ to 3 feet of wet corn. But you can dry a deeper layer of wet corn after corn comes from the field with less than 20 percent moisture.

Harvesting and drying with bin hatch go something like this: A batch is picked during the day and put into the bin. It's dried during the night, cooled, and then unloaded and moved to other storage the next morning.

Van Fossen says about 15 batches per year can be dried with a bin hatch dryer. Capacity per batch depends on the size of the bin and drying equipment.

Bin hatch drying systems fit well where a double corncrib can be converted to shelled corn storage. "But don't consider using a bin as a hatch dryer if you need to haul the corn to storage," advises Van Fossen.

One other caution about drying in bins. Van Fossen recommends starting early in the fall—just as soon as shelled corn reaches 27 to 28 percent moisture.

"You must start multiple drying early enough to have most of drying done by the time outside temperatures fall below 50 degrees," he cautions. "Otherwise drying time may be too long. Drying costs rise accordingly, too."

Drying bins can be used to store semi-high moisture corn if you plan to feed the corn before the end of March. You can fill the bin with corn up to 22 percent moisture. Then run the fan only to keep the corn cool.

Maximum temperature corn should reach is 50 degrees, and safest temperatures are 30 to 40 degrees.

Portable hatch and continuous flow dryers fit best where storage units are scattered. A portable drying unit dries the corn. Then corn is moved to other storage.

Big advantage here is that the dryer can be moved with ease from one location to another. Capacity depends on the size and speed of the dryer.

If you're in the market for a drying system, it'll pay to check costs and benefits of the various systems. You can get additional information from your county extension director and dealers

Plate IV. Reproduction of the liming articles, February 19, 1966, Wallaces Farmer

## Liming boosts yields of most Iowa crops

"A TEST strip thru the field really convinced me that liming for corn pays," says Jim Hunter, Greene county, Iowa corn grower. "I haven't made a single investment that's paid better than lime for corn."

"A field of 80-bushel corn worried me. Yields should have been higher," explains Hunter. "Four tons of lime per acre and a little extra fertilizer added 50 bushels per acre to the yield the next year."

"Liming is now the first step in my corn production program," he declares.

Carl O. Jones of Buena Vista county, Iowa, had a similar experience. On one of his fields, corn yields just wouldn't measure up to the average for the farm. Others with the same hybrid and similar fertility programs were doing much better.

"Lots of figuring went into finding a reason for the difference," says Jones. "Finally a test for lime spotted the trouble."

"Soil on the low-yielding field was more acid (pH 6.0). Others tested more nearly neutral (pH 6.6 to 6.8). Two and a half tons of lime per acre brought this year's corn yields on the poor field back up to the level of the rest of the farm."

In Clinton county, Iowa, a test plot on the Bill Dunn farm also proved that lime can boost corn yields.

County extension director Norman Goodwin says soil test results showed a need for 2½ tons of lime per acre. So the test area was divided. Treatments included no lime, the recommended 2½ tons, 5 tons, and 10 tons per acre. Otherwise, conditions over the whole plot were kept the same.

The part receiving 2½ tons per acre yielded 23.3 bushels per acre more than that without lime. Same for the 5-ton rate. The 10-ton application yielded more than the check, but substantially less than the lighter rates.

Research has indicated that corn—and most other farm

crops—do better with more lime. Increasing use of nitrogen fertilizer adds to soil acidity—also boosting the lime requirement.

A higher rate of application was added to Iowa State University soil test recommendations starting last year. The lighter rate is aimed at providing a pH of 6.5—still suitable for establishing legume seedings. The higher rate—enough to raise pH to about 6.9—gives nearer maximum productivity over a period of years.

Best way to tell how much lime a field needs is by laboratory soil tests. Quick tests using chemical color change are no longer considered accurate enough to pinpoint amount of lime needed.

Soil samples should be taken to plow depth. Recommendations are for lime needed for 6-inch depth. If you plow deeper, take sample to plow depth and adjust recommendations proportionately.

Recommendations are on a basis of 100 percent effective calcium carbonate. So rate of application must also be adjusted for purity (calcium carbonate equivalent) and fineness of the limestone used. The seller is required by law to furnish information on both to the buyer.

Fineness is stated as percent of material passing 8 and 60 mesh screens. Multiply percentage passing 8 mesh screen by 0.3 and percentage passing 60 mesh by 0.6. Add the two resulting figures together plus 10 percentage points to determine total percentage available.

Multiply this times calcium carbonate equivalent to find total effective limestone in the material you are using.

Divide this figure into recommended rate to find amount of the particular limestone material needed for 6-inch plow depth.

Laboratory soil test results for limestone usually include detailed instructions for these calculations.

## Liming boosts yields of most Iowa crops

MANY Iowa soils need more lime for top corn production. Three major factors lie behind this growing need:

1. Annual use of limestone is less than annual need—and has been for many years.

2. Increasing use of nitrogen fertilizer tends to make soils more acid. Some more lime is needed just to maintain the same level.

3. Recommended rate of application was increased last year because corn—and most other farm crops—appear to do best in soils near neutral. While recommendations used to be only for adequate lime to bring the soil acidity to pH 6.5, they now include a recommendation for enough additional lime for a pH of 6.9.

The lower rate is still adequate for starting a seedling. But top corn yields call for the higher level.

Modern liming for maximum profit requires more care and knowledge than we previously used.

For example, a number of factors must be considered in determining the amount of lime to use. The old quick test based on chemical color change is now considered accurate enough only to indicate whether or not lime is needed—not how much is needed. A laboratory soils test is required for this information.

Soil sample on which the lime test is made should be taken to plow depth. General recommendations are made on the basis of a plow depth of 6 inches. If you plow deeper, you'll want to adjust the rate of lime application upward in proportion to the extra depth.

For example, if you plow 8 inches deep, that is one-third deeper than 6 inches. The lime application should be one-third heavier than the recommendation for the 6-inch depth.

Lime recommendations are now expressed in terms of calcium carbonate equivalent. This is done so adjustments can be made for both the fineness and

purity of the limestone used.

Information on both of these items must be furnished by the seller of the limestone to the buyer.

Most Iowa limestone has a calcium carbonate equivalent between 75 and 100, based on a scale of pure calcium carbonate having a value of 100. Values in excess of 100 can come from magnesium carbonate in dolomitic limestone. Found for proof, the magnesium carbonate has a greater neutralizing power than calcium carbonate.

To find the effectiveness of a limestone material, multiply the calcium carbonate equivalent times the percent available based on fineness. Fineness is usually expressed in the amount of the material that will pass thru 8 and 60-mesh sieves. This sieve size is standard through the midwest. Agricultural limestone can be expected to pass thru a 6-mesh sieve.

For example, assume that 90 percent of the material passes an 8-mesh screen and 55 percent passes thru a 60-inch screen. The following table shows the percent of limestone available in this particular example and shows the method for figuring.

Screen size	% material passing each screen	Purity	% available based on fineness
4 mesh	100	8.1	10
8 mesh	90	8.3	27
60 mesh	55	8.6	23
<b>TOTAL PERCENTAGE AVAILABLE</b>			<b>70</b>

This adds up to a total of 70 percent available based on fineness. If the material has a 90 percent calcium carbonate equivalent, you'd expect 70 percent of this to be total effective limestone. This would give 63 percent (.90 x .70 = .63 x 100 = 63 percent) total effective limestone.

If the recommendation calls for 4,000 pounds (2 tons) of 100 percent calcium carbonate, divide the 4,000 pounds by 0.63. In this case 6,349 pounds of the limestone material would be needed for a 6-inch plow depth.



Plate V. Reproduction of the farmer-quote version, big tractor article, February 19, 1966, Wallaces Farmer



**Labor** shortage and expanding farm size make big tractors—in the 100-horsepower area—more and more important on Iowa farms.

## Big tractors...

# Efficiency may outweigh cost

**F**ARM TRACTORS, like farm size, are getting bigger. It's like Duane Larson, Greene county, Iowa, puts it:

"Everything seems to keep getting bigger. You get something and it's either obsolete or too small before you know it."

That's one reason Larson went to one of the big tractors—one in the 100-horsepower class. "Now I can add another 160 acres without adding more power. You bet this figured in my decision to buy a big tractor," he explains. Larson farms 640 acres, averages about 500 acres of row crops.

The big ones handle easy for their size, and they get the job done fast. But they are expensive to own.

"They say fixed costs run about 20 percent of purchase price," points out Ivan Patterson, Webster county, Iowa. He farms 440 acres, keeps about 360 acres in row crops.

"We run our big tractor between 500 and 600 hours a year," says Patterson. "But if you only run it 100 hours a year, it gets pretty expensive."

Fixed costs per acre add up fast, especially on limited acreage. But there's more to the picture than fixed costs.

Ralph Van Der Kamp, Jasper county, Iowa, farms 400 acres plus a quarter he rented for next season. Van Der Kamp's 60-horsepower tractor was worn out. "So it was spend money on the old one or buy a new one," he explains. He bought the big tractor last July.

"I knew my son would be drafted," he explains, "and you can't hire a dependable man to run a tractor. So if we were

going to do it, this was the only way possible."

Robert Renshaw, Dallas county, Iowa, points up the labor saving angle like this: "One man on a big tractor can almost do what two can on small ones."

He adds, too, that the big ones are too big for some jobs, like cultivating and harrowing. "But you can't beat them for heavy work. When you need horsepower, you've got it."

Based on price per horsepower, big tractors are often a better buy than smaller units. Van Der Kamp explains that a 60-horsepower tractor runs about \$6,000, or \$100 per horsepower. But a 100-horsepower tractor, he explains, runs about \$8,000, or \$80 per horsepower.

It depends on the situation, but quite often another factor figures in too. Take Larson's situation:

"I spent a month looking and dickering," he points out, "and really didn't know what to do. I looked at one in the 75 to 80 horsepower area, but found out that by trading in two smaller tractors, I could buy one rated at 85 horsepower for only \$200 more. I'd have paid more cash by buying the smaller tractor and trading in only one of my old ones."

Timeliness—getting your work done when it should be done—figures in too. In fact, it may be one of the most important factors to consider.

The biggest, slowest job on the farm is plowing, explain big tractor owners. So you have to gear your operation to plowing.

And in some areas, fall plowing is almost a must. "I've seen the time when fall plowing

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## Big tractors...

(Continued from preceding page)

could be worth \$15 an acre or more," explains Larson.

Fall plowing gives more leeway for planing the next spring, too. "I've heard that delaying planting from May 1 to May 20 can cut corn yields by 20 bushels per acre," says Larson.

An Iowa State University study points up the importance of timeliness. Agricultural engineering graduate student James C. Frisby studied 10 different machine systems, each with a different capacity.

Big tractors—drawbar rating at 75 horsepower—were used on 400-acre or larger farms. On 225-acre farms, Frisby used 55 horsepower (drawbar rating) tractors.

Replacing the 55-horsepower tractor unit with a 75-horsepower tractor increased optimum acreage by just 25 acres. It increased cost of ownership by over \$300 a year. But it boosted total income by over \$2,000 a year. Big reason for the boost in income is timeliness—getting the job done on time.

Dr. Clarence Bockhop, head of the agricultural engineering department at ISU, sums it up this way:

"There's always been talk that farmers have too much machinery. But anytime you don't have enough power, you're hurt a lot worse than if you have a little more power than you need—timeliness is that important."

Patterson agrees: "It actually costs you more to be underpowered than it does to have a little extra power," he figures. But quickly adds: "I don't think our big tractor gives me even a little extra power. It puts me up to where I should be."

The key, of course, is to fit the power and machinery to the situation. And like Patterson says, "Every situation is different."

Plate VI. Reproduction of the no-farmer-quote version, big tractor article, February 19, 1966, Wallaces Farmer



**Labor** shortage and expanding farm size make big tractors—in the 100-horsepower area—more and more important on Iowa farms.

## Big tractors...

# Efficiency may outweigh cost

**F**ARM TRACTORS, like farm size, are getting bigger. More and more of the big bruisers are showing up on Iowa farms.

Big tractors are powerful—in the 100-horsepower class. They handle easily for their size—most have power steering. They get the job done fast. And they are expensive.

Fixed costs on a farm tractor run from 20 to 25 percent of the initial cost, according to Dr. Wesley Buchele, agricultural engineer at ISU. So it costs \$1,500 a year to own a \$7,500 tractor whether you use it or not.

If you use the tractor 500 hours a year, per hour fixed costs run \$3 an hour. At 300 hours a year, fixed costs jump up to \$5 an hour! So buying a big tractor can be dangerous.

There's more to the picture, tho, than fixed costs. "It's a matter of pricing," explains Wayne Ritchie, machinery specialist for Doane Agricultural Services.

A new 90 to 100-horsepower tractor costs about \$80 per horsepower. A 65-horsepower unit runs \$100. Reason for this is that there are about \$1,500 worth of extras on each tractor. They cost as much on the smaller unit as on the large. So the 65-horsepower tractor is not as good a buy.

Suppose a farmer has two 50 horsepower units about 10 years old that are getting had, explains Ritchie. He can trade both for a 90 to 100-horsepower unit, and probably get \$2,000 for them on the trade.

But he can't afford to trade more than one for the 65-horsepower unit. He needs it to

maintain capacity. So his actual cash outlay for the big one would be no more than for the smaller one.

With one big one and himself he can do twice the work he did with the two older ones.

Even if he keeps one old one and buys the 65-horsepower unit, his capacity at best will be the same as with one big one. He can't find help to run the old one. So he may end up with about two-thirds the capacity of the big one.

He lays out the same amount of cash in each situation, Ritchie explains. But increases his potential capacity by buying the bigger tractor.

"Probably everything he has bought in the past 10 years has turned out to be too small. The reason—expansion. So he figures if I'm going to buy a new tractor, might as well spend \$1,000 more (10%) and have some reserve potential which he is almost sure of using."

Timeliness figures in, too. "Whether per hour fixed costs are \$3 or \$4.80 aren't very important to a producer when he realizes planting three weeks late could cost him \$30," comments Ritchie.

A study at Iowa State University points out the importance of timeliness. James C. Friahy, former agricultural engineering graduate student at ISU, studied 10 different machine systems, each with a different capacity.

The study considered corn as the only crop and no custom work.

Land was fall plowed whenever possible to give more le-

## Big tractors...

(Continued from preceding page)

way for planting the next spring. Big tractors—drawbar ratings at 75 horsepower—were used on 400 acres and over. Only size under 400 acres included in the study was 225 acres. Here 55-horsepower tractors (drawbar ratings) were used.

By use of computers, Friahy determined how income varied as acreages were increased with each machine system.

"After reaching a maximum, total income decreases rapidly as acreage increases," states Friahy. "It is possible that a farmer, by increasing his acreage as little as 25 acres, might work harder, but have less income because of untimely operations," he concludes.

Friahy found plowing capacity usually limited acreage. So he replaced the 55 h.p. tractor on the 225 acres with a 75 h.p. unit. "It was felt that capacity of this system should be increased without creating need for more labor if possible. This is one likely reason many farmers change to larger tractors when, to the casual observer, it seems they have no need for additional power."

Going to a bigger tractor boosted the cost of ownership by over \$300 per year. It boosted acreage by 25 acres and total income by over \$2,000 per year. Reason is timeliness—getting the job done when it should be done.

Dr. Clarence Boekhop, head of the agricultural engineering department at ISU, sums it up this way:

"There's always been talk that farmers have too much machinery. But anytime you don't have enough power, you're hurt a lot worse than if you have a little more power than you need—timeliness is that important."

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Plate VII. Reproduction of the farm records articles, September 9, 1967, Wallaces Farmer

## Farm records tell the story

THIS is a real moment of truth," Ned Perrin, Monona county, Iowa, farmer says about the information he gets from the analysis sheet of his farm records program.

"Are you a good manager or aren't you?" Perrin continues. "Properly used, good records are a graphic picture of the management skills of an individual—they show exactly how good a manager you really are."

"Farming is getting more competitive—competitive with your neighbor," he adds. "Your very survival depends on your ability to compete with your neighbor. And records provide the guide to your survival."

How are records the guide to survival?

"Records themselves have no value. They are the tool where-in you can do other things—like how you use the records that counts," explains Perrin.

Here is a list of ways Perrin says farm business records can be used.

1. File income tax. 2. Locate the elements of your business where costs or profits are heavy. You can see where most of your money is coming from. 3. Compare with others in a like enterprise. (This is a benefit only farm business association members receive.) 4. By stacking up a few years' records, you can chart your progress.

5. Record your ability to manage money—your banker wants to know this. 6. Help a tenant find a farm and a landlord pick a tenant. Records show the proven ability that's necessary to rent a good farm."

Perrin isn't the only Iowa farmer who is sold on good record keeping programs. Leon Haahr in Buena Vista county feels the same way. "I use records mostly to find out where I am and where I'm going in my farm business," says Haahr. "We manage a lot of money in a year—many a farmer has more invested than his city counterpart—and it's vitally important to know how that money is being managed."

Both Haahr and Perrin are members of a farm business association. For \$75 to \$100 a year they get a record book, a complete analysis at the end of the year, and management advice from a trained fieldman.

Iowa farmers use more than one method of record keeping. Art Leuthold in Lyon county,

for example, uses a different system.

"An accountant does my record work," says Leuthold. "I supply him with the information and he gives me a monthly statement of income, expenses, and totals to date."

"The first of January we take a complete inventory, then keep a running total of the feed used for cattle or hogs and charge it against them in our records."

Leuthold gives another money saving advantage of good records: "Toward the end of the year, we bring everything up to date. Then we check if we can benefit by getting more income or holding off till next year."

Leuthold also keeps a daily diary and work schedule. "I record the temperature, rainfall, what we did that day, and anything special that happened," he explains.

Another record that Leuthold keeps—and an important one—is a yearly map of his farm with fields drawn in. He records cropping history, yields, fertilizer used, and other treatments.

Sounds like a lot of work, doesn't it? But it's work for which farmers are well paid. Harold Ryon, a Pocahontas county, Iowa, farmer explains: "You've got to know what you're doing. I don't like to work for nothing. I want to know if I'm getting anything for my work."

Which record book does Ryon recommend? "I recommend the book I use," says Ryon, "the Iowa Looseleaf Farm Account Book. You can buy it at your local county extension office."

Ryon uses these items to analyze his farm business. "Power and machinery investment per related acre. Gross profit per acre. Total expenses per acre. Net farm income per acre. Gross profit per dollar expense. Livestock profits per \$100 worth of feed. These figures tell you what you need to know about your farm business."

Here's another bit of advice Ryon offers: "Even with just a complete inventory the first of January each year, you can figure your net worth and compare it with the year before and see how you did. It's about the simplest thing you can keep, but it tells you so much."

"WE AREN'T worried about having a woman for President but having a man for First Lady really causes concern."—Cottonwood Falls (Kan.) Leader-News.

## Farm records tell the story

AN ANALYSIS of farm records is often a real moment of truth. Is this farmer a good manager or not? That's what good farm records show. Properly used, a good record keeping system is a graphic picture of the management skill of an individual. It shows exactly how good a manager the operator is.

Farming is getting more competitive—competitive between neighbors. In fact, a farmer's survival may well depend on his ability to compete with his neighbors. And a good set of records can be a guide to survival.

How can farm records be a guide to survival? Records themselves have no value. They are the tool with which a farmer can do other things—it's how they're used that counts.

Next question, then, is how can records be used? Here's a general list of ways farm records are used:

1. To file income tax. 2. To locate the elements of a farm business where costs or profits are heavy. 3. To compare with other farms with like enterprises. (This is a benefit only farm business association members receive.) 4. By stacking up records of a few years, a farmer can chart any progress in the business.

5. To record a farmer's ability to manage money, something bankers always want to know. 6. To help a tenant find a farm and a landlord pick a tenant. Records show the proven ability that's necessary to rent a good farm.

Farmers manage a lot of money each year—many have more invested than a businessman in town. It's important to know exactly how that money is being managed. How else can a farmer find out where he is and where he is going with his farm business?

A unique farm management service—Iowa Farm Business Associations—is available to Iowa farmers. For \$75 to \$100 a year, members get a record book, a complete record analysis at the end of the year, and management advice from a trained fieldman.

Some farmers use the services of an accountant to do their bookwork. The farmer supplies the information and the accountant in turn prepares a monthly statement of income, expenses, and totals to date.

Or, a farmer can keep his

own books and make his own analysis at the end of the year. What's a good record book to get started in? The Iowa Looseleaf Farm Account Book is available at most county extension offices.

It provides space for entries of all types.

And there's space for figuring such things as power and machinery investment per related acre, gross profit per acre, total expenses per acre, net farm income per acre, gross profit per dollar of expense, and livestock returns for \$100 worth of feed. These are the efficiency figures that farmers need to know about their farm business.

A good record-keeping system, too, includes more than just a book with columns in which to make entries. A daily diary, for example, of temperature, rainfall, and a work schedule of that particular day often gives answers to lots of questions that pop up later on.

And a map of the farm with fields drawn in and cropping history, yields, fertilizer used, and any other treatment a field may get is just about a must.

Toward the end of the year, records can be brought up to date. A check can be made to find out if it's best to sell then and increase income, or hold off to sell till next year.

Even with just an inventory taken the first of January each year, a farmer can figure his net worth and compare it with the year before to see how he did. This is about the simplest record a farmer can keep, but it really tells him a lot.

How can farmers get started on a record keeping system? County extension directors, vocational agriculture teachers, farm loan advisors in banks, and many other persons in farm related fields are good sources of help for getting started.

Some farmers may want to contact the farm business association fieldman in their area. Most associations have a waiting list, but several associations are planning expansion programs, too.

The important thing, too, is to get started. Benefits may seem nominal at first, but before long they far outweigh the extra time and effort it takes to keep books.

"WE AREN'T worried about having a woman for President but having a man for First Lady really causes concern."—Cottonwood Falls (Kan.) Leader-News.

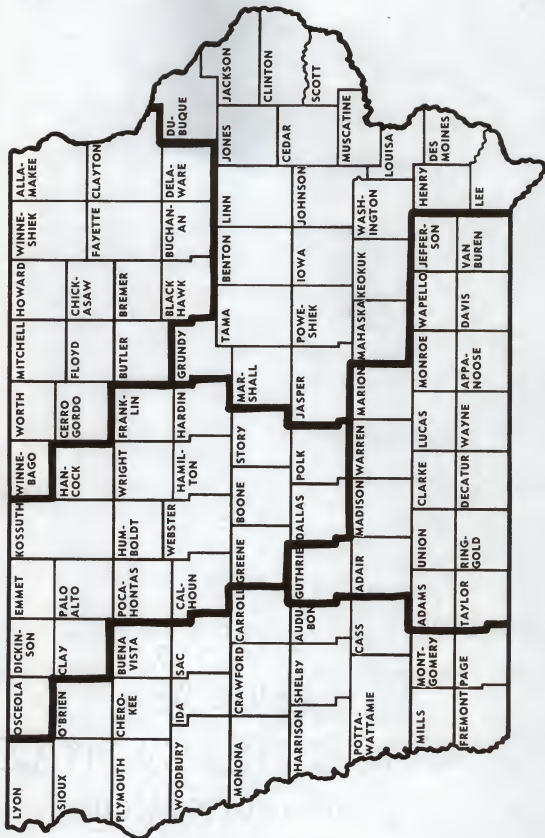


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APPENDIX B



Plate VIII. Map of Iowa showing the five economic areas represented in Wallaces Farmer Reader Interest Surveys





WALLACES FARMER  
READER-INTEREST SURVEY INSTRUCTIONS  
for the  
Survey Staff

Here are general instructions for Wallaces Farmer Reader-Interest Surveys. Please read these instructions carefully--before you start out to do any interviewing. Take it along with you when you start out to interview and refer to it in case problems in interviewing arise.

Check the instruction letter to see how many interviews you are to make, what county you are to work in, and if you are to begin your interviewing at the beginning or the middle of the magazine.

If something unforeseen happens and you are unable to go out on this survey, please call us as soon as possible so that we can try to get someone to take your place. Or, if you get started, are able to complete only a few interviews, and will not be able to get the rest of those assigned, call in right away.

We hope nothing will happen to keep you from completing your assignment, but want to know about it if it does. The number is 243-6181, extension 29.

The Field Trip

Start on a rural mail route - out of any town in the county assigned to you,

At least a mile from your home neighborhood,

Where you haven't interviewed at least one year.

Stay on a mail route originating in the county you're assigned - because this is a split issue. Mail routes originating in a neighboring county may receive a copy of the paper a little different from the one you're showing. If you find that the mail route you have chosen wanders across the county line, it's all right. Everyone on the same mail route gets the same "A" or "B" copy. The important thing is that the mail route originated at a post office in the county assigned to you.

Stop at every other farm house - Take farm homes on both sides of the road.

Take the righthand first, if two houses are just opposite.

Skip one house after every stop, even though - folks aren't home -

HINT: A plat map of the county you'll be working in, with the mail route you have decided to work marked in by your postmaster or mail carrier, will help you a great deal.

or they don't subscribe -

or they didn't read the paper -

or they do read the paper!

Not-at-homes - can't be helped. Stick to the system. Use your judgment about whether to keep going until your assignment is finished or catch some of the not-at-homes on the way back.

Finish the trip - in one day if you can. If it takes two days, start out the second day where you left off, unless this runs up too many miles. In that case, make a fresh start.

What's reasonable mileage? For new interviewers, or an interviewer in new territory, usually under 50 to 60 miles. After nearby country has been thoroughly covered, usually under 100 - 120 miles. But the main thing is: be sure to get the interviews! If you need more mileage, take it and explain later.

INTERVIEWS: Until your assignment is filled, get just as many interviews as you can find at each stop - with readers or non-readers. But with nobody under 21 years old. And don't exceed your assignment for either men or women. Don't interview visitors - just members of the family.

### Introductions

You say something like this:

"I'm Mrs. Blank. I live (or recently lived) on a farm just out of Blankville. And Wallaces Farmer has sent me out to interview. They want to know how much of their paper people are reading this time."

"I need to know first, of course, whether you've received this issue."

("Yes, we did."                      or  
("We don't take it but Dad sends it over.")

You say:

"Then I need to know whether you saw or read anything in this issue."

("Oh, yes!")

You say:

"If it isn't too much trouble, before we start the interview, may I glance at the copy you have - to be sure it's like the one we're going to look over."

### WHY ALL THE FUSS ABOUT "A" AND "B" COPIES?

For the readership issue, the subscribers in half the counties get "A" copies, and in the other half "B" copies. We send you an "A" or "B" marked copy, depending on which copy the folks get in the county in which you'll be working. You will always find an "A" or a "B" on the front cover - usually at the end of, or below, the paragraph of copy on the front cover. Certain articles and ads inside the magazine will have an "A" or a "B" at the bottom of the page that you can use for a further check if you care to.

Whichever letter your guide copy has, that's the kind we want you to find in the county you're working.

If you find the other kind - don't interview. Try another call

or two. Then try another route. If covers still don't match yours - phone me.

### Respondents

#### Non-subscribers:

Unless these folks get the paper some other way, you can't interview here. In case they want to subscribe, take their name and send it to us.

But don't take any subscription money. We like to keep sales and interviewing separate.

#### Non-readers:

Their family takes the paper, but they've been too busy to read this issue:

- get the non-reader slip to fill out.

Try for other interviews at the call. If they turn out to be non-readers, too, fill out separate non-reader slips for each one.

Don't feel badly about sending in the non-reader interviews. It helps the editors to learn which folks are not reading, too.

#### Readers who start, but can't finish:

If someone's too busy to finish the interview with you and you can't get back -

We're sorry, but this is an incomplete interview and we can't use it. Tag it plainly "Unfinished," and we'll pay you for time and energy involved.

#### Part-time farmers:

On the reader slip, or non-reader slip, check "part-time" farmer for any farmer who works 100 days or more per year off the farm.

### THE READER INTERVIEW

Depends on three key questions:



"Did you HAPPEN to see or read anything on this page?"

"How much?" (of copy)

"Anything else?"

Ask these questions often.  
Record answers quickly but carefully.

Vague answers:

"I think I saw that, but I'm not sure." . . . . . (Too weak - don't check)

"I always read that, usually." . . . (Ask about this time)

"I think so." . . . . . (Reasonable - check it)

"I saw that, but I'm not sure it was in your magazine." . . . . . (Don't check)

"I glanced at it." . . . . . (Check "Any" but not "Most")

100% readers:

"I read every word, cover to cover." - (You say "Well, let's go thru anyway.")

"It's no use, I read everything, so just put that down." . . . . . (You say "I can't - they won't pay me that way.")

When a respondent sticks to his guns and goes through the magazine calling off every item - we appreciate the compliment, but -

- get an interview with someone else to round out your assignment.

The Method

The Reader Slip

Start out with the reader slip questions, unless you think the respondent will react to them better after the magazine interview.

The reader slip will generally, but not always, be divided into a General Section (both men and women), a Women's Section,

and a Men's Section. Ask the questions in the General Section of both men and women. Ask questions in the Women's Section of women only. Ask questions in the Men's Section of men only.

Never put the man and the woman of the house on the same reader slip. Use a separate reader slip for each person interviewed.

#### The Marked Magazine:

You and your respondent look at this magazine together,

Ads and editorials are broken up into numbered items. This makes it easy for folks to tell you what they read.

Your job is to check off on a set of score sheets a numbered box for each item your respondent remembers seeing or reading. You should hold the magazine. Turn each page only after the respondent has had an opportunity to look at it and be sure he did or did not read something on it.

(Of course, you use a new score sheet set for each person interviewed.)

Magazine numbers usually run from 31 thru 80. This series is repeated several times throughout the magazine, but each series belongs to a different letter - the A, B, C, D, etc., with which it starts.

You'll find reminder initials at the top of the magazine pages to help you identify each number series quickly - A, B, C, etc.

A jump in numbers in your marked magazine is intentional.

But a marked item for which no number appears is our mistake. Supply the number, if you can, but mention what happened in your report.

#### WHY DO SOME INTERVIEWERS BEGIN AT THE FRONT OF THE MAGAZINE AND OTHERS IN THE MIDDLE?

It takes some time to go through the entire magazine and score each marked item. It may happen that the person interviewed - not to mention the interviewer - will get a little tired before the scoring is completed.

So he or she may not be as able to recall just what they read and how much. Some research workers call this "interviewee fatigue." If this happens, the items at the end of the magazine may score more poorly than they deserve.

By having half the interviewers start in the center of the magazine, "interviewee fatifue" - if any - is spread through the magazine.

### The Score Sheet Set

Take from your supply, for each interview, a score sheet set and a reader slip with matching numbers.

Enter date and Call No. at top of Page 1 of your score sheet set. (The first place you find interviews is Call No. 1, the next place you find interviews is Call No. 2, and so on. All interviews you take at the same stop receive the same Call Number, but separate score sheets and reader slips.)

On the score sheet set disregard everything outside the heavy black line.

Now, share the magazine with your respondent, point to the cover (unless you were instructed to begin elsewhere) and ask your respondent: "Did you HAPPEN to see or read anything on this page?"

Following is the way you record the items that your respondent did see or read:

As you now discover, for every numbered item in your marked magazine, there is a corresponding numbered box on your score sheet.

For every numbered item in the magazine that your respondent remembers seeing or reading, you will mark an X in a box with the same number and letter on the score sheet.

### ANY (SOME) AND MOST

On the score sheets there are two boxes beside some numbers. One is under the column headed "Read Any." The other is under the other column, headed "Read Most." Which one do you X?

If your respondent has seen a picture -  
(like A-31 on the cover)

Read	Read
<u>Any</u>	<u>Most</u>

Since it's hard to judge whether or not one saw most of a picture, we've removed the "Read Most" box. You would check the box under "Read Any."

If your respondent read copy in an ad  
or an editorial -

Ask "How much did you read?"

If he read more than half . . . Check the box under Most

If he read just half or less  
than half . . . . . Check the box under Any

For items that include both  
pictures and copy . . . . . Check Any  
(Don't worry about more than half)

Of course, you will never check both boxes for one item that was  
seen or read.

If you check the wrong box, don't erase. Circle the box in  
error.

To summarize: Paragraphs of the printed word are copy. An  
article is editorial copy. Reading matter in ads is ad copy.  
Whenever a respondent has read copy - either kind - ask, "How  
much?"

Check the "Read Most" box - when more than half a numbered copy  
item was read.

Check the "Read Any" box - when only half, or less, of a numbered  
copy item was read.

- for headlines.
- for pictures and captions.
- for any combination of copy and pic-  
ture.

### REMINDERS & EMERGENCIES

Remember -

the key questions. Ask them often:

"Did you HAPPEN to see or read anything on this page?"

"How much?"

"Anything else?"

(One or two-column ads are easy to miss if you aren't  
careful to inquire "Anything else?")

to use a separate reader slip and score sheet set for each reader, and to be sure reader slip and score sheet set numbers match for each reader.

to watch the column letters on the score sheets. If you must turn over a few magazine pages the respondent hasn't read, be sure to resume marking under the proper letter - it may not be the same one you left off with.

In case of emergency, phone me collect - 243-6181, Des Moines.  
If I'm not in the office, ask for Dorothy Taylor.

R. J. Pommrehn, Director  
WALLACES FARMER POLL  
1912 Grand  
Des Moines, Iowa 50305

## TO INTERVIEWERS FOR WALLACES FARMER POLL:

Subject: Reader-Interest Survey, Issue of February 20

Dear friend:

Here is the material for the new survey. Work on mail routes originating in post offices in \_\_\_\_\_ county. Start on Monday, March 1, and mail the reports back to us on or before Saturday, March 6. You'll start your interviews:

- \_\_\_\_\_ At the first of the book. Work straight through to the back cover.
- \_\_\_\_\_ At the center of the book (page 57, item E-31, Amchem booklet) and work through to the back cover. Then return to page 1 and continue through page 56.

Here are some suggestions:

1. Read the instruction booklet carefully before you start out.
2. When you start interviewing try to pick a stretch of farm land about average for the county.
3. Be sure to stick to the "every-other-farm-house" rule.
4. Identification of A and B copies is in the upper right-hand corner of the Index on page 4. If you are assigned the A issue, look for copies that have "A" printed there. If you are assigned the B issue, look for "B" there.

Be sure the reader you are interviewing has received and read the same kind of issue as the marked-up one we have furnished you. Before you start to interview, ask to see the copy received by the person you are interviewing. If you are working with an A copy and the person you are interviewing also has an A copy, then proceed with the interview. But, if his copy is a B and you have an A, or vice versa, then something has gone wrong. Do not complete the interview. Find out if you have strayed off the mail route you started on. Get back on the right mail route if you have.

Remember that mail routes originating in your county should have the kind of issue we have furnished you. A mail route coming in from an adjoining county more than likely will have the opposite issue from the one you have.



The A and B issues will have as many as 15 ads and editorials that are different. If you have been assigned A's and accidentally interview someone who has received a B issue, or vice versa, we will not be able to use that interview.

5. Try to get the exact number of interviews we ask for. If on mailing day, you haven't enough, send in what you have.

I'll repeat the major instructions:

Start out on or after Monday, March 1, to make

\_\_\_\_\_ interviews with men readers

\_\_\_\_\_ interviews with women readers

Be sure to stay on mail routes originating in \_\_\_\_\_ County. These folks should have received \_\_\_\_\_ copies of the February 20 issue.

Return reader slips, non-reader slips, score sheet sets, quote sheets, name and address sheets, and your own report sheet, back to me on or before Saturday, March 6. Please don't send back to us any unused material we sent you for emergency use. The return envelope is weighed for postage with just your assigned material in it.

If anything happens that you can't make the survey, or just get started and can't continue (I hope not), call me at once, collect, at Wallaces Farmer, 243-6181. If I'm not in the office talk to Mrs. Taylor. We need to have every assignment completed if we possibly can so that all areas of the state will be properly represented in our sample, and will want to try to get a substitute to take your assignment if we can. Early notice from you is essential for this.

Good luck with the survey.

Very sincerely,

Director of Research

A SPLIT-RUN STUDY OF THE INFLUENCE OF FARMER QUOTES  
ON READERSHIP BY FARMERS

by

KENNETH J. HOPMEYER

B. S., Iowa State University, 1959

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AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Technical Journalism

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

1968

## ABSTRACT

Research reported in this study indicated that direct quotations from farmers exert no significant influence, either positively or negatively, on readership of farm production-related articles by farmers.

Readership of two versions--farmer-quote and no-farmer-quote--of five articles in Wallaces Farmer was tested by interviewing two area probability samples (one for each version) of Iowa farmers, all Wallaces Farmer readers.

Generally lower reader interest scores were obtained from the versions of articles using direct quotations by farmers. Differences in reader interest scores between the two versions were not statistically significant ( $P < 0.05$ ).

Readership of information quoting university specialists was essentially the same as readership of information given in farmer quotes. When no source of information was credited, thus attributing the information to Wallaces Farmer, reader interest scores from the no-farmer-quote version were not statistically different from scores attributed to other sources. Likewise, the effect of farmer quotations on articles dealing with a relatively new farm practice was essentially no different from the effect of farmer quotations on articles in which an older, generally approved farm practice was discussed.

While the difference in scores between the two versions was not statistically significant, scores of versions in which

farmer quotations were omitted tended to be consistently higher than versions in which farmers were quoted.

Conclusive interpretations regarding source preference cannot be formulated from the findings of this study. Perhaps the findings reflect changing attitudes among farmers toward scientific agriculture and the role of agricultural scientists as sources of scientific, production-related information.

Technological advancements in agriculture during recent years may at least partially account for the apparent slight preference for information obtained from university experts. To remain competitive, farmers have had to adopt technological advances as rapidly as possible. The role of an objective, knowledgeable source of scientific agricultural information among an increasingly scientifically-minded farm population becomes obvious.

Results of this study indicate that direct quotations from farmers are not requisites for maintaining readership of farm production-related articles in farm magazines read by Iowa farmers. However, the implication that direct quotations have no value in farm magazines cannot be made from this study. Rather, the findings suggest a priority of information sources and writing style to farm magazine editors and writers.

For farm production-related articles, it appears that information attributed to experts who are specialists in the subject matter area covered can be used with no fear of depressing readership. University specialists appear to be among the best