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Abstract

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Gary L. Vacin

Where farmers get information has become a favorite communication research topic. Most of the hundreds of studies have shown that farm magazines are one of the most important information sources for farmers, ranking ahead of Extension specialists, agricultural experiment station scientists and county agents.

However, most studies have failed to differentiate between information *source* and information *channel* (Thomas and Evans, 1963)—perhaps because the relationship between source and channel is not clear. Most studies considered farm magazines an information source because most researchers listed sources and channels together and identified them as sources. Thus, when farmers indicated

This report is based on data collected during the author's assignment with the Science and Education Administration, U. S. Department of Agriculture in Washington, D.C. Copies of the report, "How Land Grant Universities Wholesale Information To Farm Magazines," are available from the author for \$1.

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they received information from magazines, newspapers, radio or television, they reported the channel through which they received the message but often not the source of the message. Consequently, the indirect contribution of organizations like Cooperative Extension Services, agricultural experiment stations, and the U. S. Department of Agriculture, which generate information for transmission through various channels, largely goes unnoticed. So the relative importance of these organizations as information sources for farmers is not recognized.

Little research into how much farm magazine content originates from land-grant universities could be found in the literature. A *Prairie Farmer* editorial (Sept. 21, 1963) observed that 70 percent of the better farming methods set forth in its issues have their origin in agricultural experiment stations and Extension services.

Of 5,000 livestock stories printed in *Farm Journal* in more than a decade, 52 percent were from farmer/rancher experience, 36 percent from public research originating at the land-grant universities, and 12 percent from industry (Dieken, 1966).

Toon found that about 70 percent of all news content in selected issues of a state, a regional, and a national farm magazine published during 1977 were devoted to articles that carried information attributed to Extension and USDA sources (Weckman, 1979). However, he did not differentiate between articles entirely attributed to Extension and USDA sources and articles that may have included very limited information from these sources.

Land-grant universities are both "wholesalers" and "retailers" of information. Universities disseminate information to farm magazines and other mass media, commercial dealers, bankers, private and public agency consultants, and other "middlemen" who in turn deliver it to clientele. Thus, land-grant universities are like a "wholesale" house that sells merchandise to stores that "retail" it to consumers.

Universities also "retail" information at field days, public meetings, demonstrations, and personal visits, and by mailing newsletters, publications, and other printed material directly to farmers and other clientele, but at a much higher cost due to manpower investment, printing, postage, paper, and other preparation outlays.

For example, Kansas State University gets about four full pages of information in each issue of *Kansas Farmer* for

about \$344 a year in variable wholesaling costs (Vacin, 1980). Cost of retailing the same information directly to *Kansas Farmer* readers in a four-page newsletter for one year would be \$141,207, or 411 times more than the wholesaling costs.

Most efforts to evaluate land-grant university programs have centered much more on the retailing function than on the wholesaling function. Most farmers are unaware that land-grant universities, functioning as wholesalers, contribute heavily to their knowledge and are the source of a large volume of information transmitted through various channels.

This article is based on research believed to be the first major study of its kind. Its purpose was to determine to what extent land-grant universities "wholesale" information to farm magazines. More specifically, its objectives were to determine how much content farm magazines attribute to land-grant university sources, what kind of information provided by land-grant universities is carried in farm magazines and the readership of articles based on information from land-grant universities.

Methodology

Data for the study were gathered by screening all content in selected issues of state, regional, and national farm magazines published during 1978, and in articles for which readership scores were available. Two groups of magazines were selected for the content analysis. One consisted of the most widely circulated farm magazine in each of the 48 contiguous states; the other consisted of widely circulated national magazines.

Every item in every issue was screened for content to identify information attributed by the magazine to land-grant university sources. Two coding units were used: items containing information attributed to land-grant university sources, and column inches of copy attributed to land-grant university sources.

Contents were categorized by source according to credit provided in the magazine for each source: Cooperative Extension Service, agricultural experiment station, or other land-grant university sources. No attempt was made to differentiate between content provided directly by subject matter specialists and scientists, and that prepared by university information specialists.

Contents also were categorized by subject matter: agriculture, home economics, 4-H and youth, and other. Five sub-

categories adapted from categories used by Brown and Collins (1978) were devised for agricultural items.

Production technology—the application of improved methods and products in farm production.

Marketing—deciding when, where, and how to sell farm products.

Farm business management—planning for enterprise adjustments, firm growth, financing, estate planning, and income tax management.

Farm and public policy—programs involving allotments, quotas, price supports, conservation regulations, disaster payments, and public issues and regulations that affect farming.

Other subjects—those not included in the above categories; for example, farm safety, weather, landscaping and gardening, wildlife management, appointments of new faculty, student activities, etc.

Readership results were obtained from 14 magazines. Every article for which readership scores were obtained was screened. Readership scores for items based on land-grant university information were totaled and divided by the number of scored items to determine the average number of readers who reported they had read each item partially or thoroughly.

Results

More than one fifth of all column inches of news copy appearing in the sample of farm magazines was attributed to land-grant university sources (Table 1). Information attributed to land-grant university sources appeared in almost one third of all news items analyzed. National magazines devoted a greater proportion of their news space to land-grant university information than state and regional magazines. However, state and regional magazines used more land-grant university information per issue (314.3 column inches and 23.2 items) than national magazines (288.8 column inches, 17.1 items). The state and regional magazines included in the sample contained more pages than national magazines.

Magazines in the sample averaged 308 column inches of land-grant university information (the equivalent of six full pages of copy). Extension sources provided about two thirds of the copy, followed by agricultural experiment station sources and other sources.

Amounts of information attributed to land-grant university

Table 1. Farm Magazine Content Attributed to Land-Grant University Sources, 1978

Type of magazine	Land-Grant University Source										Total items all sources	% with LGU ² info.	Total C.I. all sources	% atb. to LGU
	Extension Service		Experiment Station		Other		Total		C.I. Items	C.I. sources				
	Items	C.I. ¹	Items	C.I.	Items	C.I.	Items	C.I.						
State, Regional	1,675	24,512	828	8,937	165	2,695	2,668	36,144	8,473	31.5	177,091	20.4		
National	333	5,288	191	3,635	22	317	546	9,240	1,331	41.0	36,495	25.3		
Total	2,008	29,800	1,019	12,572	187	3,012	3,214	45,384	9,804	32.8	213,586	21.2		

¹C.I. Column inches ²L.G.U. Land-grant university

sources in state and regional magazines varied noticeably by regions in the U. S. (Table 2). Magazines in the western and northcentral regions devoted the highest percentage of news space to land-grant university information; those in the southern and northeastern regions, the lowest percentage. Northcentral region magazines carried land-grant university information in the highest percentage of items, followed in order by southern, western, and northeastern region magazines.

The large number of column inches and items containing land-grant university information in northcentral region magazines likely stems from that region having the largest Extension and agricultural experiment station staffs. Use of lengthy items by-lined by Extension specialists in the Northwest Farm Unit magazines (*Washington Farmer-Stockman*, *Oregon Farmer-Stockman*, *Idaho Farmer-Stockman*, *Montana Farmer-Stockman*, and *Utah Farmer-Stockman*) accounts for the high percentage of space devoted to land-grant university information in western region magazines. The various state editions of *Progressive Farmer* tend to run numerous short items containing information from land-grant universities.

Table 3 shows that agricultural information accounted for the vast majority of items and column inches of copy attributed to Extension sources, followed in order by information on 4-H and home economics. National magazines carried no information on home economics or 4-H.

Information on production technology accounted for more than half of the information attributed to land-grant university sources, followed in order by information on farm management, marketing, policy, and "other" topics (Table 4). The high percentage of information on "other" topics attributed to other land-grant university sources stems largely from information on student activities. The data suggest that experiment stations are oriented to production technology, while Extension services emphasize more varied programs.

Sources from 42 different land-grant universities contributed information to 28 issues of 11 national magazines, three randomly drawn issues of *Progressive Farmer* and two randomly drawn issues of *American Agriculturist*. New England edition included in the sample. Table 5 shows that land-grant universities in the northcentral region provided more than half of all the copy, followed in order by land-grant universities in the southern, northeastern, and western re-

Table 2: Regional Comparison of Farm Magazine Content Attributed to Land-Grant University Sources

Region	Land-Grant University Sources							Total items all sources	% with LGU ² info	
	Extension Service		Experiment Station		Other		Total			
	Items	C.I. ¹	Items	C.I.	Items	C.I.	Items			C.I.
Northeast	111	1,668	34	497	8	111	153	2,276	654	23.4
South	725	8,762	447	3,574	49	981	1,221	13,317	3,869	31.5
Northcentral	570	9,270	176	2,406	42	554	788	12,230	2,152	36.6
West	269	4,812	171	2,460	66	1,049	506	8,321	1,798	28.1
Total	1,675	24,512	828	8,937	165	2,695	2,668	36,144	8,473	31.5

¹C.I. Column inches ²L.G.U. Land-grant university

Table 3. Farm Magazine Content Attributed to Cooperative Extension Service Sources, 1978

Type of magazine	Type of Information										Total of all copy %
	Agriculture		Home Economics		4-H		Total		Avg. per issue		
	Items	C.I. ¹	Items	C.I.	Items	C.I.	Items	C.I.	Items	C.I.	
State, Regional	1,546	22,766	50	648	79	1,098	1,675	24,512	14.5	213.1	13.8
National	333	5,268	--	--	--	--	333	5,268	10.4	165.3	14.5
Total	1,879	28,054	50	648	79	1,098	2,008	29,800	13.7	202.7	13.9

¹C.I. Column inches

Table 4: Column Inches of Agricultural Content Attributed to Land-Grant University Sources Classified by Subject Matter, 1978

Source	Subject Matter										
	Marketing		Production Technology		Farm Management		Farm Policy		Other		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Extension Service Experiment Station	3,449	12.3	17,104	61.0	5,009	17.9	744	2.7	1,740	6.2	28,045
Other	47	1.6	1,078	36.1	47	1.6	191	6.4	630	5.0	12,572
Total	3,850	8.8	29,343	67.3	5,483	12.6	935	2.1	3,997	9.2	43,608

Table 5: Comparison of Column Inches of Farm Magazine Content Attributed to Sources From Various Land-Grant Universities in Indicated Regions.

Total Column Inches	Northcentral Region States	Northeastern Region States	Western Region States	Southern Region States	Total
More than 500	5	0	0	1	6
400-499	2	0	0	2	4
300-399	1	0	0	1	2
200-299	2	1	0	1	4
100-199	1	1	2	4	8
1 to 99	1	5	8	4	18
0	0	5	1	0	6
Avg. per state	433.0	51.5	36.3	214.2	214.3

gions. Except for *Farm Journal*, all national magazines included in the sample are published in northcentral regional states. They quite naturally would draw heavily on sources from nearby land-grant universities.

Readership Results

One advantage of using farm magazines to disseminate land-grant university information is that they are read thoroughly by their subscribers—state magazines generally more thoroughly than national magazines. For example, nearly 70 percent of the farmers from eight northcentral states responding to a farm media study in 1977 indicated that they usually read their state farm magazines thoroughly (*Farm Media Study, 1977*). That compared with nearly 60 percent for *Farm Journal*, 57 percent for *Successful Farming*, and 65 percent for *Hoard's Dairyman*, the most widely read national magazines.

Even more meaningful are figures indicating how thoroughly individual articles are read. Readership scores

Table 6: Readership Scores for Farm Magazine Articles Based Largely or Entirely on Land-Grant University Information.

Magazine	Read thoroughly*		Read partially*	
	Number Articles	Average	Number Articles	Average
Nebraska Farmer, October 7, 1978	4	37.9	4	29.4
The Farmer, August 28, 1977	2	35.5	2	45.4
Michigan Farmer, April 2, 1977	2	26.0	2	43.5
Missouri Ruralist, February 11, 1978	2	69.1	2	21.8
Kansas Farmer, February 18, 1978	5	32.6	5	26.3
Dakota Farmer, March, 1978	2	77.5	-	-
American Agric., March 1978	1	81.0	-	-
Wisconsin Agric., March 25, 1972	18	40.5	18	53.1
Prairie Farmer, August 5, 1978	25	32.8	25	43.1
Indiana Prairie Farmer, August 5, 1978	16	36.5	16	45.9
Montana Farmer-Stockman, April 6, 1978	6	58.7	-	-
Successful Farming (4 issues)	8	52.8	8	68.4
California Farmer, March 16, 1978	4	38.5	4	57.3
Wallaces Farmer, September 9, 1978	16	31.9	16	44.9
Total	111	39.5	101	45.2

*How to read: Four land-grant university articles in the October 7, 1978 issue of *Nebraska Farmer* were read thoroughly by an average of 37.09 percent, and the same four were read partially by an average of 29.4 percent of those responding to the survey. *Successful Farming's* method of tabulation caused some overlapping. Therefore, the scores are cumulative and total more than 100 percent.

were obtained from information provided by land-grant university sources. Items containing information attributed to these sources were read thoroughly by an average of 40 percent and partially by an average of 45 percent of the readers surveyed (Table 6). Those figures are almost identical to readership scores for all items in the magazine. Items based on information attributed to Extension sources received higher readership scores than items based on information attributed to agricultural experiment station sources. The difference possibly stems from experiment station scientists' writing being more technical (harder to read) than that provided by Extension specialists.

Three items based on information attributed to land-grant university sources received the highest readership scores in their respective issues:

"Cash renting has advantages," *Kansas Farmer*, February 18, 1978, by George Brandsberg, Kansas State University Extension information specialist, was read thoroughly by nearly half of the readers.

Fifty-eight percent said they read most of "Perspectives in Agriculture Research," a series of items based on information provided by land-grant universities, carried in the August 5, 1978 issue of *Indiana Prairie Farmer*.

Three-fourths said they read most of "Agri-vision," consisting of answers to farm management questions provided by four panelists, including a University of Wisconsin Extension economist, carried in the March 25, 1978 issue of *Wisconsin Agriculturist*.

Conclusions and recommendations

Contents of 147 issues of 38 different farm magazines published during 1978 were analyzed in this study to determine the extent that land-grant universities wholesale information to farm magazines. The data suggest that research on information sources for farmers has understated the importance of land-grant universities and other sources that generate information for dissemination through various channels.

Most studies show that farm magazines are an important information source for farmers, but few have differentiated between information source and information channel. When farm magazines are considered a channel for delivering information generated by various sources, then land-grant universities become much more important as information

sources for farmers. Analysts of farm magazine content use land-grant university information extensively, and in many cases, are highly dependent upon that information to provide material for their issues.

Most efforts to evaluate Extension programs have centered on the retailing function of providing information directly to farmers and other client groups. Little has been done to determine how effectively Extension wholesales information to agri-business, private and public agency consultants, bankers, and other middlemen who, in turn, retail it to client groups. This study looked at one aspect of wholesaling—disseminating information to farm magazines. Additional research is needed to determine how effectively Extension wholesales information to other middlemen.

This study was limited to use of land-grant university material in farm magazines. Tabloid-size farm newspapers, another important information source for farmers, use large quantities of land-grant university information. Additional research is needed to determine how effectively land-grant universities wholesale information to farm newspapers and to such other mass media as nonfarm newspapers, radio, and television.

The data suggest that magazine editors think information on production technology from land-grant universities is more timely and interesting to their readers, followed in order by information on farm management, other topics not fitting the categories used in this study, marketing and farm policy.

The emphasis on production technology likely results from most land-grant universities having more Extension specialists and agricultural experiment station scientists in production technology. For example, Kansas State University has 34 state Extension specialists in production technology, 6 in farm management, 4 in agricultural marketing, 1 in agricultural policy, and 17 in other areas.

The same rank order—production technology, farm management, other topics, marketing, and farm policy—probably also reflects the quantity of land-grant university information on agriculture submitted to farm magazines. A content analysis of material submitted to magazines would be needed to confirm or reject that conjecture.

Brown and Collins found that large commercial farmers rank information on marketing most important and that farmers strongly prefer to obtain marketing information by consulting with experts and reading magazines and newspa-

pers. Only about 9 percent of the column inches of farm magazine content provided by land-grant universities was devoted to marketing. More marketing information from land-grant universities and other sources likely would be readily accepted by farm magazine editors and appreciated by their readers.

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