"Current Comments"

Journal Citation Studies. 20. Agriculture Journals and the Agricultural Literature†

May 19, 1975 Number 20

In the past, I have frequently stressed the distinction between the literature *of a specialty* and the literature *of interest to research workers in the specialty.* This paper reports a citation analysis of agricultural journals. The most telling example of the distinction I have tried to stress may be that reported here on *the literature of agriculture* and *the literature of interest to agricultural scientists.*

As a starting point in the citation analysis, we arbitrarily defined as an 'agricultural journal core' journals in "obvious" agricultural categories in the journal lists of the *Science Citation Index® (SCI®).*[1] The categories include *agriculture, food technology, botany, entomology, ecology, fisheries, forestry, horticulture, parasitology, soil science,* etc. Also arbitrarily, we added a few journals that we thought appropriate, for example, *Pesticides Biochemistry* and *Journal of the Association of Official* (formerly *Agricultural*) *Chemists.* We deliberately omitted from the study genetics and microbiology journals. In addition, we did not want the obvious dependence of genetics on basic research to skew the results that intuition suggested should be expected in analyzing citation patterns of more 'applied' agriculture journals. Nor did we include major multidisciplinary journals, in which we know agricultural scientists publish as frequently as they can. We fully expected, on the basis of previous studies of this type, that these journals would account for themselves.

This "core journal" base comprised 347 journals. As in some previously reported studies,[2,3] we treated them *as a unit* to discover what journals they as a unit cite, and what journals cite them as a unit. The data base used in the analysis was composed of citation data from the last quarter 1969 *SCI.* The methodology has been explained in detail elsewhere.[4]

The results of our analysis are shown in Figures 1 and 2. The figures give only the top 75 journals in each case. These are, however, quite sufficient for the purpose of this report.

Figure 1 shows the 75 journals most frequently cit*ed by* our agricultural core. Actually the core cited some 1650 items, plus innumerable theses, but most of the 1650 items were journals. The core journals referenced the 1650 items with a total of 39,956 citations. The 75 journals on the list in Figure 1 account for 56.8% of those nearly 40,000 citations. The top 50 on the list account for 48%. This concentration exceeds that previously reported for science as a whole, where 50 journals account for about 33% of all citations, and 75 journals for about 40%.[4]

Figure 2 shows the 75 journals that cited (made reference *to*) our agricultural core most frequently. Actually, the core journals were cited by some 395 journals, as compared to the 1650 items that they cited. The core referenced these 395 journals with 13,031 citations. Again, the top 75 journals on the list account for most of them, 88.3%. The first 50 account for 77%.

Before touching on details of the lists, I think we can say something important about the 'agricultural literature', though it may be obvious by now. The agricultural core journals cite other journals much more widely than they are cited by other journals. That fact, in my opinion, overrides anything else that may be said about what constitutes the 'agricultural literature.' It poses the question that is at the base of the distinction I have previously mentioned: what is the literature that agricultural scientists use? From these results, it is apparent that it is definitely not congruent with the 'literature' that agricultural scientists *produce.* One must wonder, then, just what is meant by an 'agricultural library', or an 'agricultural information service'. An examination of the

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Figure 1. Journals Most Frequently Cited by 'Agriculture Core' Journals. An asterisk indicates that the journal also appears on the list in Figure 2. **A** = total citations by all journals. **B** = total citations by 'agriculture core' journals. **C** = self-citations. **D** = **B/A** ('agriculture' citations in terms of total citations). **E** = **C/A** (self-citations in terms of total citations, self-cited rate). **F** = **C/B** (self-citations in terms of 'agriculture' citations). **G** = Impact factor (see reference 4). **H** = *Current Contents* coverage (A for *CC/AB&ES*, L for *CC/LS*).

	Journal	A	B	C	D	E	F	G	H
1.	Phytopathology*	1713	1460	822	85.2	48.0	56.3	1.078	A
2.	Nature*	15310	1128	—	7.4	—	—	2.244	A L
3.	Plant Physiol.*	1639	1107	200	67.5	12.2	18.1	1.683	A L
4.	J. Biol. Chem.	17103	791	—	4.6	—	—	6.371	L
5.	J. Econ. Entomol.*	900	778	508	86.4	56.4	65.3	0.782	A
6.	Amer. J. Bot.*	1171	696	73	59.4	6.2	10.5	0.956	A L
7.	Science*	9739	638	—	6.6	—	—	2.894	A L
8.	J. Dairy Sci.*	902	619	382	68.6	42.4	61.9	0.507	A
9.	Agron. J.*	727	529	163	72.8	22.4	30.8	0.947	A
10.	Biochem. J.	7625	528	—	6.9	—	—	3.193	L
11.	J. Animal Sci.*	734	482	247	65.7	33.7	51.0	0.405	A L
12.	Poultry Sci.*	697	456	351	65.4	50.4	77.0	0.488	A L
13.	Soil Sci.*	629	443	61	70.4	9.7	13.8	0.923	A
14.	Biochim. Biophys. Acta*	9500	438	—	4.6	—	—	3.287	L
15.	Soil Sci. Soc.*	553	400	112	72.3	20.3	28.0	0.867	A
16.	Planta*	707	391	123	55.3	17.4	31.5	2.944	A L
17.	J. Parasitology	708	368	80	52.0	11.3	21.7	1.351	L
18.	Canad. J. Bot.*	548	357	62	65.2	11.3	17.4	1.217	A
19.	J. Agr. Food Chem.*	509	324	98	63.7	19.3	30.3	1.665	A L
20.	J. Bacteriol.	4138	319	—	7.7	—	—	3.594	L
21.	J. Amer. Soc. Hort. Sci.*	357	301	182	84.3	60.0	60.5	0.392	A
22.	Physiol. Plant.*	482	283	52	58.7	10.8	18.4	1.796	A L
23.	J. Ass. Off. An. Chem.*	478	277	181	57.9	37.9	65.3	—	A L
24.	Weed Sci.*	311	275	171	88.4	55.0	62.2	1.568	A
25.	Phytochemistry*	588	273	153	46.4	26.0	56.0	1.907	A L
26.	J. Agr. Sci.*	420	269	106	64.1	25.2	39.4	0.912	A
27.	Comptes Rendus D*	5642	256	—	4.5	—	—	0.780	A L
28.	Ann. Bot.	424	255	30	60.1	7.1	7.1	1.443	A L
29.	Crop Sci.	353	255	104	72.2	29.5	40.8	0.712	A
30.	Analyt. Chem.	4219	251	—	6.0	—	—	1.661	L
31.	Ecology*	577	251	118	43.5	20.5	74.9	1.256	A L
32.	Arch. Biochem. Biophys.	3647	247	—	6.8	—	—	3.519	L
33.	Food Technol.	346	242	62	70.0	17.9	25.6	0.787	A
34.	Exp. Parasitol.*	428	240	161	56.1	37.6	67.1	3.000	L
35.	Plant Dis. Rep.	286	236	—	82.5	—	—	0.268	A
36.	J. Cell Biol.	4769	234	—	4.9	—	—	3.484	L
37.	J. Amer. Chem. Soc.	26307	218	—	0.8	—	—	5.859	L
38.	Austr. J. Agr. Res.*	308	212	89	68.8	28.9	42.0	1.051	A
39.	Ann. Entom. Soc. Am.*	329	211	64	64.1	19.5	30.3	0.537	A
40.	Bot. Gazette	312	210	9	67.3	2.9	4.3	0.658	A L
41.	Ann. Appl. Biol.	453	209	—	46.1	—	—	1.386	A
42.	J. Exp. Bot.	337	205	63	60.8	18.7	30.7	2.400	A L
43.	J. Sci. Food Agr.*	367	202	87	55.0	23.7	43.1	0.881	A
44.	J. Nutrition	1209	201	—	16.6	—	—	2.087	A L
45.	J. Food Sci.	383	197	41	51.4	10.7	20.8	0.871	A
46.	P. Nat. Acad. Sci. USA	8206	196	—	2.4	—	—	8.828	L
47.	J. Protozool.	446	191	104	42.8	54.5	23.3	0.884	A L
48.	Zbl. Bakt. Parasitenk.	407	186	166	45.7	40.8	89.3	0.703	L
49.	Mycologia*	302	185	51	61.3	16.9	27.6	0.901	A L
50.	Austr. J. Biol. Sci.*	583	184	—	31.6	—	—	1.957	A L
51.	Canad. Entomol.	225	182	55	80.9	24.4	30.2	0.445	A
52.	Cereal Chem.*	286	182	71	63.6	24.8	39.0	1.210	A
53.	J. Insect Physiol.*	487	180	139	37.0	28.5	77.2	1.932	L
54.	T. Brit. Mycol. Soc.*	263	173	73	65.8	27.8	42.2	0.830	A L
55.	Agr. Biol. Chem.*	356	172	143	48.3	40.2	83.1	0.939	A L
56.	New Phytologist*	295	172	54	58.3	18.3	31.4	1.362	A L
57.	Virology	2373	171	—	7.2	—	—	4.720	L
58.	Annu. Rev. Plant Phys.	290	170	—	58.6	—	—	7.047	A L
59.	P. Soc. Exp. Biol. Med.	5011	168	—	3.4	—	—	1.964	L
60.	J. Agr. Res.	267	167	—	62.6	—	—	—	
61.	J. Fish. Res. Bd. Can.*	336	164	122	48.8	36.3	74.4	—	A
62.	Parasitology*	297	161	44	54.2	14.8	27.3	0.866	L
63.	Amer. J. Trop. Med. Hyg.	854	153	—	17.9	—	—	2.078	L
64.	J. Gen. Microbiol.	1438	145	—	10.1	—	—	2.337	L
65.	J. Chem. Soc.	13978	142	—	1.0	—	—	3.123	L
66.	J. Wildl. Managem.	180	128	112	71.1	62.2	87.5	0.501	A
67.	J. Range Managem.*	126	120	60	95.2	47.6	50.0	0.551	A
68.	Plant Soil*	202	116	52	57.4	25.7	44.8	0.988	A
69.	J. Animal Ecol.*	239	115	50	48.1	20.9	43.5	0.795	A
70.	Plant Cell Physiol.*	203	114	75	56.2	37.0	65.8	1.785	A L
71.	Ann. Trop. Med. Paras.	381	113	32	29.7	8.4	28.3	1.398	L
72.	T. Roy. Soc. Trop. Med.	553	110	—	19.9	—	—	—	L
73.	Ann. New York Acad. Sci.*	3756	107	—	2.9	—	—	1.815	L
74.	Appl. Microbiol.*	583	107	—	18.4	—	—	1.278	A L
75.	Canad. J. Plant Sci.	138	106	32	76.8	23.2	30.2	0.615	A

Figure 2. Journals that Most Frequently Cited 'Agriculture Core' Journals. An asterisk indicates that the journal also appears on the list in Figure 1. **A** = total citations of all journals. **B** = total citations of 'agriculture core' journals. **C** = self-citations. **D** = **B**/**A** ('agriculture core' citations in terms of total ciations). **E** = **C**/**A** (self-citations in terms of total citations, self-cit*ing* rate). **F** = **C**/**B** (self-citations in terms of 'agriculture core' citations). **G** = Impact factor (see reference 4). **H** = *Current Contents* coverage (A for *CC/A&ES*, L for *CC/LS*).

	Journal	A	B	C	D	E	F	G	H
1.	Phytopathology*	2830	1039	822	36.7	31.2	79.1	1.078	A
2.	J. Econ. Entomol.*	1446	660	508	45.6	35.1	77.0	0.782	A
3.	J. Dairy Sci.*	1350	466	382	34.5	28.3	82.0	0.507	A
4.	Annu. Rev. Phytopath.	2181	453	—	20.8	—	—	4.914	A L
5.	Poultry Sci.*	1291	414	351	32.0	27.2	84.8	0.480	A L
6.	Agron. J.*	1008	355	163	35.2	16.2	45.9	0.947	A
7.	J. Animal Sci.*	964	349	247	36.2	25.6	70.8	0.405	A L
8.	Plant Physiol.*	960	300	200	31.3	20.8	66.7	1.683	A L
9.	Exp. Parasitol.*	2219	260	161	11.7	7.3	61.9	3.000	L
10.	Weed Sci.*	564	251	171	44.5	30.3	68.1	1.568	A
11.	J. Ass. Off. An. Ch.*	878	242	181	27.6	20.6	74.8	—	A L
12.	J. Agr. Food Chem.*	903	238	98	26.4	10.9	41.2	1.665	A L
13.	J. Am. S. Hort. Sci.*	755	235	182	31.1	24.1	77.4	0.392	A
14.	Planta*	1085	213	123	19.6	11.3	57.8	2.944	A L
15.	Phytochemistry*	1473	207	153	14.1	10.4	74.0	1.907	A L
16.	Botan. Rev.	772	205	6	26.6	0.8	2.9	3.818	A
17.	J. Agr. Sci.*	653	194	106	29.7	16.2	54.6	0.912	A
18.	Canad. J. Bot.*	768	194	62	25.3	8.1	31.9	1.217	A
19.	Ecology*	991	194	118	19.6	11.9	60.8	1.256	A L
20.	Plant Soil*	820	193	52	23.5	6.3	26.9	0.988	A
21.	Agr. Biol. Chem.*	1108	184	143	16.6	12.9	77.7	0.939	A L
22.	Mycop. Mycol. Appl.	2831	177	80	6.3	2.8	45.2	0.346	A L
23.	Soil Sci. Soc.*	608	175	112	28.8	18.4	64.0	0.867	A
24.	J. Insect Physiol.*	1129	174	139	15.4	12.3	80.0	1.932	L
25.	T. Brit. Mycol. S.*	549	171	73	31.2	13.3	42.7	0.830	A L
26.	J. Fish. Res. Bd.*	1174	166	122	14.4	10.4	73.5	—	A
27.	Austr. J. Agr. Res.*	669	163	89	24.4	13.3	54.6	1.051	A
28.	Amer. J. Bot.*	590	162	73	27.5	12.4	45.1	0.956	A L
29.	Plant Cell Physiol.*	820	162	75	19.8	9.2	46.3	1.785	A L
30.	Soil Sci.*	405	146	61	36.1	15.1	41.8	0.923	A
31.	J. Sci. Food Agr.*	738	146	87	19.8	11.8	59.6	0.881	A
32.	Protoplasma	965	143	—	14.8	—	—	2.183	A L
33.	Ind. J. Agr. Sci.	959	135	52	14.1	5.4	38.5	0.334	A
34.	Weed Res.	467	132	28	28.3	6.0	21.2	—	A
35.	New Phytologist*	579	123	54	21.2	9.3	43.9	1.382	A L
36.	Mycologia*	444	120	51	27.0	11.5	42.5	0.901	A L
37.	Physiol. Plant.*	486	108	52	22.2	10.6	48.1	1.796	A L
38.	Comptes Rendus D*	3784	108	—	2.9	—	—	0.780	A L
39.	Canad. J. Zool.	1663	106	—	6.4	—	—	0.978	A L
40.	J. Austr. I. Agr.	580	102	19	17.6	3.3	18.6	—	A
41.	J. Brit. Grassl.	346	101	61	29.2	17.6	60.4	0.612	A
42.	Cereal Chem.*	301	99	71	32.9	23.6	71.7	1.210	A
43.	Ann. Ent. Soc. Am.*	673	95	64	14.1	9.5	67.4	0.537	A
44.	J. Soil Sci.	302	94	27	31.1	8.9	28.7	0.861	A
45.	J. Chromatogr.	2506	91	—	3.6	—	—	1.378	L
46.	Z. Pflanzenphys.	414	86	24	20.8	5.8	27.9	1.048	A L
47.	J. Range Managem.*	298	81	60	27.2	20.1	74.1	0.551	A
48.	Ann. NY Acad. Sci.*	10461	73	—	0.7	—	—	1.815	L
49.	Mosquito News	214	72	65	33.7	30.4	90.3	0.428	A
50.	Bioch. Bioph. Acta*	10269	71	—	0.7	—	—	3.287	L
51.	J. Repr. Fertil.	1203	69	—	5.7	—	—	2.014	L
52.	Arch. Mikrobiol.	1318	69	—	5.2	—	—	2.120	L
53.	Zschr. Parasitenk.	434	68	40	15.7	9.2	58.8	2.208	L
54.	B. Torrey Bot. Club	366	67	13	18.3	3.6	19.4	0.623	A
55.	Ber. Deut. Bot. Ges.	669	67	20	10.0	3.0	29.9	0.519	A
56.	J. Animal Ecol.*	389	66	50	17.0	12.9	75.8	0.795	A
57.	Austr. J. Biol. Sci.*	1245	66	—	5.3	—	—	1.957	A L
58.	Phyton	364	65	12	17.9	3.3	18.5	—	A
59.	Amer. Potato J.	182	64	29	35.2	28.6	81.3	0.342	A
60.	Forest Chron.	485	63	29	13.0	6.0	46.0	—	A
61.	Theor. Appl. Genet.	776	62	—	8.0	—	—	—	A L
62.	Parasitology*	441	61	44	13.8	10.0	72.1	0.866	L
63.	Oikos	739	60	—	8.1	—	—	1.019	A
64.	Science*	5699	59	—	1.0	—	—	2.894	A L
65.	Bull. Entomol. Res.	238	58	45	24.4	18.9	77.6	0.674	A
66.	J. Stored Prod. Res.	452	57	18	12.6	4.0	31.6	—	A
67.	Comp. Biochem.	1945	57	—	2.9	—	—	1.477	L
68.	Zucker	162	56	56	34.6	34.6	99.9	—	A
69.	P. NAS India A	658	56	—	8.5	—	—	—	
70.	J. Sci. Ind. R. B	976	55	—	5.6	—	—	—	
71.	Nature*	6777	55	—	0.8	—	—	2.244	A L
72.	T. Amer. Fish. Soc.	386	54	32	14.0	8.3	59.3	0.333	A
73.	Z. Pflanzenzucht.	418	54	21	12.9	5.0	38.9	—	A L
74.	Appl. Microbiol.*	1453	54	—	3.7	—	—	1.278	A L
75.	Phytomorphology	223	52	13	23.3	5.8	25.0	—	A

Figure 3. Journals Most Frequently Cited by 'Agriculture Core' Journals. For significance of column headings, see legend of Figure 1. In this list, the journals have been ranked by the percentage in column D ('agriculture' citations in terms of total citations).

	JOURNAL	A	B	C	D	E	F	G	H	
1.	J. Range Managem.*	126	120	60	95.2	47.6	50.0	0.551	A	
2.	Weed Sci.*	311	275	171	88.4	55.0	62.2	1.568	A	
3.	J. Econ. Entomol.*	900	778	508	86.4	56.4	65.3	0.782	A	
4.	Phytopathology*	1713	1460	822	85.2	48.0	56.3	1.078	A	
5.	J. Amer. Soc. Hort. Sci.*	357	301	182	84.3	60.0	60.5	0.392	A	
6.	Plant Dis. Rep.	286	236	—	82.5	—	—	0.268	A	
7.	Canad. Entomol.	225	182	55	80.9	24.4	30.2	0.445	A	
8.	Canad. J. Plant Sci.	138	106	32	76.8	23.2	30.2	0.615	A	
9.	Agron. J.*	727	529	163	72.8	22.4	30.8	0.947	A	
10.	Soil Sci. Soc.*	553	400	112	72.3	20.3	28.0	0.867	A	
11.	Crop Sci.	353	255	104	72.2	29.5	40.8	0.712	A	
12.	J. Wildl. Managem.	180	128	112	71.1	62.2	87.5	0.501	A	
13.	Soil Sci.*	629	443	61	70.4	9.7	13.8	0.923	A	
14.	Food Technol.	346	242	62	70.0	17.9	25.6	0.787	A	
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17.	Plant Physiol.*	1639	1107	200	67.5	12.2	18.1	1.683	A	L
18.	Bot. Gazette	312	210	9	67.3	2.9	4.3	0.658	A	L
19.	T. Brit. Mycol. Soc.*	263	173	73	65.8	27.8	42.2	0.830	A	L
20.	J. Animal Sci.*	734	482	247	65.7	33.7	51.0	0.405	A	L
21.	Poultry Sci.*	697	456	351	65.4	50.4	77.0	0.488	A	L
22.	Canad. J. Bot.*	548	357	62	65.2	11.3	17.4	1.217	A	
23.	Ann. Entom. Soc. Am.*	329	211	64	64.1	19.5	30.3	0.537	A	
24.	J. Agr. Sci.*	420	269	106	64.1	25.2	39.4	0.912	A	
25.	J. Agr. Food Chem.*	509	324	98	63.7	19.3	30.3	1.665	A	L
26.	Cereal Chem.*	286	182	71	63.6	24.8	39.0	1.210	A	
27.	J. Agr. Res.	267	167	—	62.6	—	—	—		
28.	Mycologia*	302	185	51	61.3	16.9	27.6	0.901	A	L
29.	J. Exp. Bot.	337	205	63	60.8	18.7	30.7	2.400	A	L
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36.	Plant Soil*	202	116	52	57.4	25.7	44.8	0.988	A	
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41.	Parasitology*	297	161	44	54.2	14.8	27.3	0.866		L
42.	J. Parasitology	708	368	80	52.0	11.3	21.7	1.351		L
43.	J. Food Sci.	383	197	41	51.4	10.7	20.8	0.871	A	
44.	J. Fish. Res. Bd. Can.*	336	164	122	48.8	36.3	74.4	—	A	
45.	Agr. Biol. Chem.*	356	172	143	48.3	40.2	83.1	0.939	A	L
46.	J. Animal Ecol.*	239	115	50	48.1	20.9	43.5	0.795	A	
47.	Phytochemistry*	588	273	153	46.4	26.0	56.0	1.907	A	L
48.	Ann. Appl. Biol.	453	209	—	46.1	—	—	1.386	A	
49.	Zbl. Bakt. Parasitenk.	407	186	166	45.7	40.8	89.3	0.703		L
50.	Ecology*	577	251	118	43.5	20.5	74.9	1.256	A	L
51.	J. Protozool.	446	191	104	42.8	54.5	23.3	0.884	A	L
52.	J. Insect Physiol.*	487	180	139	37.0	28.5	77.2	1.932		L
53.	Austr. J. Biol. Sci.*	583	184	—	31.6	—	—	1.957	A	L
54.	Ann. Trop. Med. Paras.	381	113	32	29.7	8.4	28.3	1.398		L
55.	T. Roy. Soc. Trop. Med.	553	110	—	19.9	—	—	—		L
56.	Appl. Microbiol.*	583	107	—	18.4	—	—	1.278	A	L
57.	Amer. J. Trop. Med. Hyg.	854	153	—	17.9	—	—	2.078		L
58.	J. Nutrition	1209	201	—	16.6	—	—	2.087	A	L
59.	J. Gen. Microbiol.	1438	145	—	10.1	—	—	2.337		L
60.	J. Bacteriol.	4138	319	—	7.7	—	—	3.594		L
61.	Nature*	15310	1128	—	7.4	—	—	2.244	A	L
62.	Virology	2373	171	—	7.2	—	—	4.720		L
63.	Biochem. J.	7625	528	—	6.9	—	—	3.193		L
64.	Arch. Biochem. Biophys.	3647	247	—	6.8	—	—	3.519		L
65.	Science*	9739	638	—	6.6	—	—	2.894	A	L
66.	Analyt. Chem.	4219	251	—	6.0	—	—	1.661		L
67.	J. Cell Biol.	4769	234	—	4.9	—	—	3.484		L
68.	Biochim. Biophys. Acta*	9500	438	—	4.6	—	—	3.287		L
69.	J. Biol. Chem.	17103	791	—	4.6	—	—	6.371		L
70.	Comptes Rendus D*	5642	256	—	4.5	—	—	0.780	A	L
71.	P. Soc. Exp. Biol. Med.	5011	168	—	3.4	—	—	1.964		L
72.	Ann. New York Acad. Sci.*	3756	107	—	2.9	—	—	1.815		L
73.	P. Nat. Acad. Sci. USA	8206	196	—	2.4	—	—	8.828		L
74.	J. Chem. Soc.	13978	142	—	1.0	—	—	3.123		L
75.	J. Amer. Chem. Soc.	26307	218	—	0.8	—	—	5.859		L

Figure 4. Journals that Most Frequently Cited 'Agriculture Core' Journals. For significance of column headings, see legend of Figure 2. In this list, the journals have been ranked by the percentage in column D ('agriculture' citations in terms of total citations).

	JOURNAL	A	B	C	D	E	F	G	H
1.	J. Econ. Entomol.*	1446	660	508	45.6	35.1	77.0	0.782	A
2.	Weed Sci.*	564	251	171	44.5	30.3	68.1	1.568	A
3.	Phytopathology*	2830	1039	822	36.7	31.2	79.1	1.078	A
4.	J. Animal Sci.*	964	349	247	36.2	25.6	70.8	0.405	A L
5.	Soil Sci.*	405	146	61	36.1	15.1	41.8	0.923	A
6.	Agron. J.*	1008	355	163	35.2	16.2	45.9	0.947	A
7.	Amer. Potato J.	182	64	29	35.2	28.6	81.3	0.342	A
8.	Zucker	162	56	56	34.6	34.6	99.9	—	A
9.	J. Dairy Sci.*	1350	466	382	34.5	28.3	82.0	0.507	A
10.	Mosquito News	214	72	65	33.7	30.4	90.3	0.428	A
11.	Cereal Chem.*	301	99	71	32.9	23.6	71.7	1.210	A
12.	Poultry Sci.*	1291	414	351	32.0	27.2	84.8	0.488	A L
13.	T. Brit. Mycol. S.*	549	171	73	31.2	13.3	42.7	0.830	A L
14.	J. Am. S. Hort. Sci.*	755	235	182	31.1	24.1	77.4	0.392	A
15.	J. Soil Sci.	302	94	27	31.1	8.9	28.7	0.861	A
16.	Plant Physiol.*	960	300	200	31.3	20.8	66.7	1.683	A L
17.	J. Agr. Sci.*	653	194	106	29.7	16.2	54.6	0.912	A
18.	J. Brit. Grassl.	346	101	61	29.2	17.6	60.4	0.612	A
19.	Soil Sci. Soc.*	608	175	112	28.8	18.4	64.0	0.867	A
20.	Weed Res.	467	132	28	28.3	6.0	21.2	—	A
21.	J. Ass. Off. An. Ch.*	878	242	181	27.6	20.6	74.8	—	A L
22.	Amer. J. Bot.*	590	162	73	27.5	12.4	45.1	0.956	A L
23.	J. Range Managem.*	298	81	60	27.2	20.1	74.1	0.551	A
24.	Mycologia*	444	120	51	27.0	11.5	42.5	0.901	A L
25.	Botan. Rev.	772	205	6	26.6	0.8	2.9	3.818	A
26.	J. Agr. Food Chem.*	903	238	98	26.4	10.9	41.2	1.665	A L
27.	Canad. J. Bot.*	768	194	62	25.3	8.1	31.9	1.217	A
28.	Austr. J. Agr. Res.*	669	163	89	24.4	13.3	54.6	1.051	A
29.	Bull. Entomol. Res.	238	58	45	24.4	18.9	77.6	0.674	A
30.	Plant Soil*	820	193	52	23.5	6.3	26.9	0.988	A
31.	Phytomorphology	223	52	13	23.3	5.8	25.0	—	A
32.	Physiol. Plant.*	486	108	52	22.2	10.6	48.1	1.796	A L
33.	New Phytologist*	579	123	54	21.2	9.3	43.9	1.382	A L
34.	Annu. Rev. Phytopath.	2181	453	—	20.8	—	—	4.914	A L
35.	Z. Pflanzenphys.	414	86	24	20.8	5.8	27.9	1.048	A L
36.	J. Sci. Food Agr.*	738	146	87	19.8	11.8	59.6	0.881	A
37.	Plant Cell Physiol.*	820	162	75	19.8	9.2	46.3	1.785	A L
38.	Ecology*	991	194	118	19.6	11.9	60.8	1.256	A L
39.	Planta*	1085	213	123	19.6	11.3	57.8	2.944	A L
40.	B. Torrey Bot. Club	366	67	13	18.3	3.6	19.4	0.623	A
41.	Phyton	364	65	12	17.9	3.3	18.5	—	A
42.	J. Austr. I. Agr.	580	102	19	17.6	3.3	18.6	—	A
43.	J. Animal Ecol.*	389	66	50	17.0	12.9	75.8	0.795	A
44.	Agr. Biol. Chem.*	1108	184	143	16.6	12.9	77.7	0.939	A L
45.	Zschr. Parasitenk.	434	68	40	15.7	9.2	58.8	2.208	L
46.	J. Insect Physiol.*	1129	174	139	15.4	12.3	80.0	1.932	L
47.	Protoplasma	965	143	—	14.8	—	—	2.183	A L
48.	J. Fish. Res. Bd.*	1174	166	122	14.4	10.4	73.5	—	A
49.	Ann. Ent. Soc. Am.*	673	95	64	14.1	9.5	67.4	0.537	A
50.	Ind. J. Agr. Sci.	959	135	52	14.1	5.4	38.5	0.334	A
51.	Phytochemistry*	1473	207	153	14.1	10.4	74.0	1.907	A L
52.	T. Amer. Fish. Soc.	386	54	32	14.0	8.3	59.3	0.333	A
53.	Parasitology*	441	61	44	13.8	10.0	72.1	0.866	L
54.	Forest Chron.	485	63	29	13.0	6.0	46.0	—	A
55.	Z. Pflanzenzucht.	418	54	21	12.9	5.0	38.9	—	A L
56.	J. Stored Prod. Res.	452	57	18	12.6	4.0	31.6	—	A
57.	Exp. Parasitol.*	2219	260	161	11.7	7.3	61.9	3.000	L
58.	Ber. Deut. Bot. Ges.	669	67	20	10.0	3.0	29.9	0.519	A
59.	P. NAS India A	658	56	—	8.5	—	—	—	
60.	Oikos	739	60	—	8.1	—	—	1.019	A
61.	Theor. Appl. Genet.	776	62	—	8.0	—	—	—	A L
62.	Canad. J. Zool.	1663	106	—	6.4	—	—	0.978	A L
63.	Mycop. Mycol. Appl.	2831	177	80	6.3	2.8	45.2	0.346	A L
64.	J. Repr. Fertil.	1203	69	—	5.7	—	—	2.014	L
65.	J. Sci. Ind. R. B	976	55	—	5.6	—	—	—	
66.	Austr. J. Biol. Sci.*	1245	66	—	5.3	—	—	1.957	A L
67.	Arch. Mikrobiol.	1318	69	—	5.2	—	—	2.120	L
68.	Appl. Microbiol.*	1453	54	—	3.7	—	—	1.278	A L
69.	J. Chromatogr.	2506	91	—	3.6	—	—	1.378	L
70.	Comp. Biochem.	1945	57	—	2.9	—	—	1.477	L
71.	Comptes Rendus D*	3784	108	—	2.9	—	—	0.780	A L
72.	Science*	5699	59	—	1.0	—	—	2.894	A L
73.	Nature*	6777	55	—	0.8	—	—	2.244	A L
74.	Ann. NY Acad. Sci.*	10461	73	—	0.7	—	—	1.815	L
75.	Bioch. Bioph. Acta*	10269	71	—	0.7	—	—	3.287	L

lists in Figures 1 and 2 makes it plain, I think, that neither can be satisfied by describing them as consisting mainly of 'agricultural journals'.

Figure 1 shows us that among the journals ranked in order of importance to agriculture (whether or not one can call them 'agricultural journals') are—with their ranks on the list—*Nature* (2), *Journal of Biological Chemistry* (4), *Science* (7), *Biochemical Journal* (10), *Biochimica Biophysica Acta* (14), *Journal of Bacteriology* (20), *Comptes Rendus etc.* (27), *Analytical Chemistry* (30), *Ecology* (31), *Archives of Biochemistry and Biophysics* (32), *Journal of Cell Biology* (36), *Journal of the American Chemical Society* (37), and so on. Undoubtedly there are journals on the list that are 'agricultural' by anyone's definition, but there are many more that very few people would characterize as 'agricultural'. The list tells us, however, that they make up *the literature of interest to agricultural research*, the literature agricultural scientists *use*. They are accordingly the journals that an 'agricultural library' and an 'agricultural information service' will need.

I regret that I can't make the complete list of cited items available for your inspection now. It would dispel the illusion that strict 'agricultural selectivity' after a point will take care of this obvious dispersion of material important to agriculture. The full list shows that that is definitely not the case. Before the illusory 'agricultural library' can 'select' the *American Potato Journal*, for example, it must pick up *Protoplasma*, which the core cited more frequently. Before it 'selects' the *Berichte der Deutschen Botanischen Gesellschaft* it must pick up *American Journal of Physiology*. Before it 'selects' *Journal of the American Society of Agronomists*, it must pick up *Journal of Laboratory and Clinical Medicine*, *Biochemistry*, and *Naturwissenschaften*. Before it 'selects' *Flora*, *Hilgardia*, *Acta Botanica Neerlandica*, it must pick up *Journal of Immunology*, *Journal of Molecular Biology*, *American Journal of Epidemiology*, *Zeitschrift fuer Naturforschung*. Before it 'selects' *Journal of Horticural Science* it must pick up *Lancet* and *Journal of Cell Science*, and *Journal of General Physiology*. In all these cases, if the illusory library 'selects' the *obvious 'agricultural' journal*, it will have selected journals that citations—that is, that agricultural research—have shown are of lesser importance in agricultural research than the non-agricultural journals I have named.

At this point, I can make a statement that, earlier in this presentation, might have seemed so obvious as to be meaningless. An agricultural library, or an agricultural information service, ought to be a *science* library or a *science* information service. It is the researchers, not we librarians and information workers who determine this. When their interests change, citation analysis can help us keep abreast of those changes.[5]

In Figure 2 are the agricultural journals that most heavily cited the agricultural core. For the most part, there will be little argument about their being 'agricultural' journals, but—I must repeat—they are not the journals that agricultural researchers use most. They are, rather, the written product of agricultural research. Even among these top 75, however, it is interesting to see that *Science* and *Nature* are better qualified as 'agricultural journals' than *Phytomorphology*, the last on the list, and more qualified than the 320 other journals on the complete list of 395 that most heavily cited the agriculture core.

There are 43 journals common to the two lists of 75, but their rankings on the two lists differ considerably. The shared journals are indicated by an asterisk after the journal title abbreviation.

I should like to take this opportunity to say something about the coverage of *Current Contents/Life Sciences® (CC/LS®)* and *Current Contents/Agriculture, Biology & Environmental Sciences® (CC/AB&ES®)*. In the figures, *CC* coverage is indicated by an A and/or L in the last column (for *CC/AB&ES* and *CC/LS* respectively). It's frequently suggested that a researcher should not have to subscribe to more than one edition of *CC*. Agricultural researchers frequently say they would prefer to have all of what they need in *CC/LS* or in *CC/AB&ES*. I wish that were possible, just as I wish it were possible in the case of clinical researchers who say the same thing in relation to *CC/LS* and *CC/Clinical Practice*, or in the case of certain chemists who say the same thing in relation to *CC/LS* and *CC/Physical & Chemical Sciences*. Although we have tried, and I think to a good extent succeeded, in making *CC/LS* serve the interests of as many different 'specialists' as possible, it's coverage cannot be skewed to emphasize some specialties' interests at the expense of others. Coverage of the various editions of *CC* is a difficult problem, and in many instances no doubt intution plays a role in journal selection.

Citation analysis, however, as I've indicated elsewhere,[4] has been of great help in supplying objective criteria. The positive results can be demonstrated with these two short lists of 75 journals.

Of the 75 journals on the list in Figure 1, 26 are covered by both *CC/LS* and *CC/AB&ES*; 26 are covered by *CC/AB&ES* alone; 22 are covered by *CC/LS* alone, and one (*Journal of Agricultural Research*) is no longer published.

If the journals in Figure 1 are rearranged in order of the percentage of 'agricultural citations' in terms of total citations (as in Figure 3), you will find that there is first a group covered exclusively by *CC/AB&ES*, then a group covered mainly by both *CC/LS* and *CC/AB&ES*, and finally a group covered exclusively by *CC/LS*. That is exactly as it should be, in my opinion. If the journals in Figure 2 are rearranged in the same manner, however (as in Figure 4), there is no such abrupt demarkation. The doubly-covered journals merely tend to be distributed throughout the second two-thirds of the rearranged list.

We are frequently asked why we at ISI do not produce 'specialty' citation indexes, of greater or lesser scope—a 'biochemical' citation index, or a 'life sciences' citation index. We could do so, but I have no doubt at all that users would soon find them unsatisfactory. Users of these hypothetical 'specialty' citation indexes would soon find they need broader coverage. The 'biochemical' citation index would have to be enlarged, and would turn out to be the 'life sciences' citation index. In time, that 'life sciences' citation index would have again to be enlarged, and we would end with what we have now—the *Science Citation Index*. The *SCI* reflects both the multidisciplinary character of research in the natural sciences, and it provides the multidisciplinary access to the literature of research, no matter what the specialty starting point of the researcher. Thus, we could produce an *Agricultural Citation Index*, or at least produce a series of volumes that would carry such a title. But if we were to restrict it to so-called agricultural journals, users would quickly demand an enlargement of coverage. That enlargement would result in the same *Life Sciences Citation Index* in turn demanded by biochemists. And the hypothetical *Life Sciences Citation Index* would in turn inevitably become the *Science Citation Index* that is already available. These facts are beyond dispute. They were among the early discoveries in my first studies of the potential of citation indexing for science. I tried to produce a *Genetics Citation Index*. Indeed, I still have a volume with that title,[7] but the attempt was a failure in that it fell short of the intended goal. In a real sense, the *Science Citation Index* exists because it was impossible, with anything but a *Science Citation Index* to fill the need for a *Genetics Citation Index*. The same, I believe, is true in the case of a hypothetical *Agricultural Citation Index*. The only satisfactory *Agricultural Citation Index* is a *Science Citation Index*. Fortunately, *the Science Citation Index* exists.

In short, agricultural scientists use and cite the same hard core of frequently cited basic research journals used by all other research workers in the life sciences. Their purpose, the slant of their interest, their *mission*, if you will, may differ, but the materials are the same. Indeed the appelation *agriculture* describes only the *mission*, rather than any approach to the problem with which agricultural scientists deal. Thus, an agricultural research library is by definition—as our study, I believe, has shown—a basic science research library.

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1. *Science Citation Index 1969 Guide & Journal Lists.* (Philadelphia: Insitute for Scientific Information, 1970), 106 p. — The subject category list of journal abbreviations appears on pages 6–10 of the *Guide*.

2. **Garfield E.** Journal citation studies. 9. Highly cited pediatric journals and articles. *Current Contents®/(CC®)* No. 29, 17 July 1974, p. 5-9.

3. ---. Journal citation studies. 15. Cancer journals and articles. *CC* No. 42, 16 October 1974, p. 5–12.

4. ---. Citation analysis as a tool in journal evaluation. *Science* **178**:471–79, 1972.

5. In the near future, we plan to update this agricultural analysis with a study of 1972 data. I feel confident that it will show some changes in agricultural research for that three-year period, and the same will be true for 1972–1975.

6. **Garfield E.** Citation frequency and citation impact, and the role they play in journal selection for *Current Contents* and other ISI services. *CC* No. 6, 7 February 1973, p. 5–6.

7. *Genetics Citation Index: Experimental Citation Indexes to Genetics with Special Emphasis on Human Genetics.* (Philadelphia: Institute for Scientific Information, 1963), 864 p.