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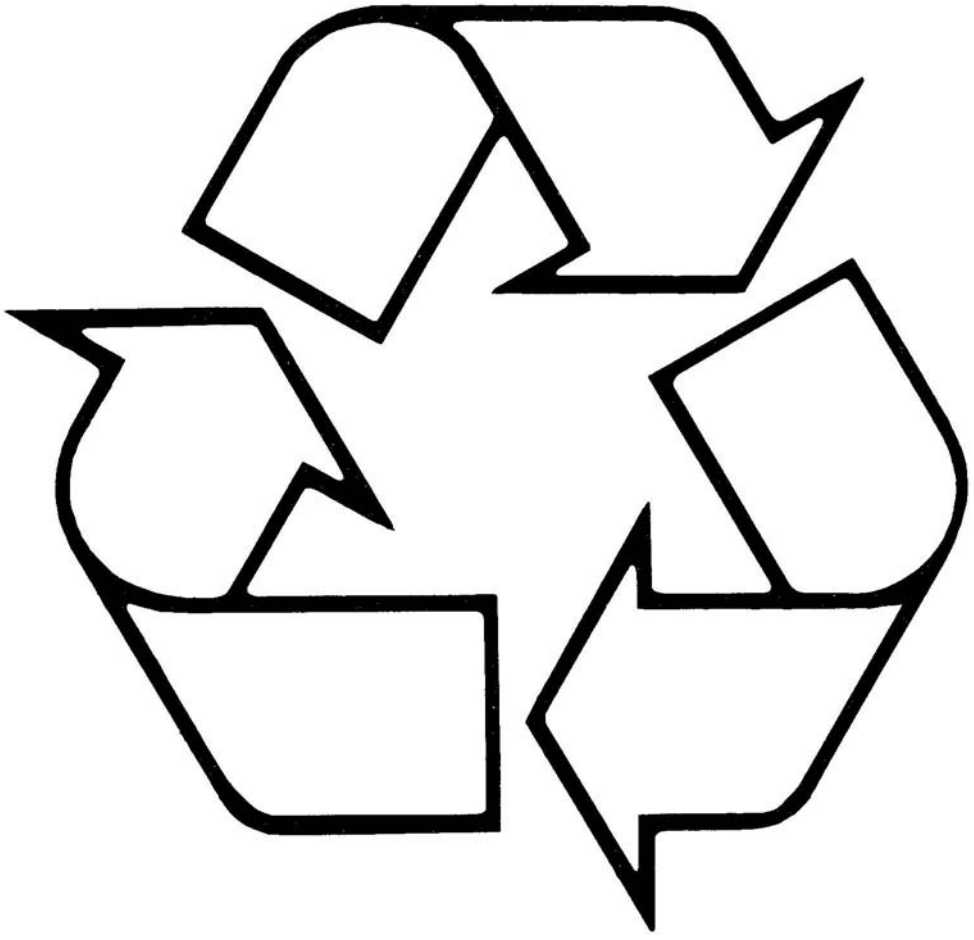
HOUSEHOLD SEPARATION OF WASTEPAPER:
FPL Employee Survey



ABSTRACT

A volunteer group of 129 separated total wastepaper normally discarded from the household for a 14–day period, Daily wastepaper discards averaged 0.53 pound per person, and consisted of 47 percent newspapers, 13 percent magazines, 12 percent strong papers, and 28 percent all other papers mixed. The volunteers had no difficulty in grading newspapers and magazines, but experienced some difficulty in separating items in strong paper and mixed paper grades and in distinguishing between paper and nonpaper items in the mixed grade. Nearly all volunteers were willing to participate in an identical 14–day household wastepaper separation in the future, but 14 percent were not willing to do so on a permanent basis and 13 percent would participate in a permanent separate collection only if the plan was modified.

HOUSEHOLD SEPARATION OF WASTEPAPER: FPL Employee Survey

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INTRODUCTION

Wood fiber products constitute a large proportion of the total weight of municipal refuse, ranging from 40 to 55 percent.[2,3] This represents a significant loss of our valuable wood resource, and when wastepaper is disposed of improperly, it contributes to pollution of our environment. If we continue to use and discard wood fiber products at am ever-increasing rate, demand is predicted to exceed pulpwood supplies by about 1980.[4] Research on the recovery and recycling of wood fiber can make contributions to waste reduction. holding the demand for wood to be used as wood fiber at reasonable levels, and decreasing pollution.

The United States consumes more than 58 million tons of paper and paperboard annually. Of this volume, only 19.1 percent is reused in the manufacture of new products. Most of the remaining 80.9 percentis quickly discarded in municipal refuse.

One estimate is that 66 percent of the millions of tons of paper and paperboard now going into municipal refuse is potentially reclaimable. Nevertheless, the recovery rate has been declining in the United States since 1944, when the rate was about 37 percent. As a comparison, certain Western European countries and Japan use approximately 50 percent secondary fiber, some of which is imported, in their production systems, Two important factors in the decline of the United States recycle rate are high transportation costs and high reclamation costs, both of which adversely affect the competitive position of wastepaper as a raw material.[5] The bulk of present U.S. paper recycling requires that used paper and paperboard products be obtained in separate grades at the source or be sorted into very specific grades. The costs of manual sorting to remove materials which can render the wastepaper difficult to process are increasing. In recent years, the number and diversity of materials other than wood fiber--resins. inks, clay, wax, gum, etc.--added in paper or paperboard production has increased drastically. Unfortunately, many existing secondary fiber mills have great difficulty removing these materials, and they do not have the capital to modify their equipment in order to remove them, Consequently, virgin fibers are being used in many products where secondary fibers would be entirety satisfactory.

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[1] Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

[2] President's Science Advisory Committee. Restoring the quality of our environment. Report of the Environmental Pollution Panel. The White House. 1965. p. 140.

[3] Darnay, A., and Franklin, W. E. The role of packaging in solid waste management 1966 to 1976. Public Health Serv. Pub. N 1855. U.S. Dept. Health, Education, and Welfare. 1969.

[4] Hair, Dwight. Use of regression equations for projecting trends in demand for paper and board. Forest Resource Rep. No. 18, Forest Serv., U.S. Dept. Agr. 1967.

[5] Mohrer, H. Z. Secondary fibre: Past, present, future. Pulp and Paper Magazine for Canada, Convention issue, p. 158. 1969.

Very often, when a discussion turns to the declining recycle rate and increasing solid waste problems, separation of wastepaper in the home is proposed as a solution, or a partial solution, to the problems. Household trash is not the largest component of municipal solid waste in many communities. For example, total solid waste in the City of Madison from all sources ranges from 350 to 750 tons per day. From 160 to 240 tons per day comes from residential trash collection. Nevertheless, a portion of the Laboratory's recycling research is directed toward separating and processing wood fiber from residential trash, since techniques that prove successful with this material may well be applicable to other types of municipal solid waste with high paper content.

The main goal of this study was to obtain Mormation on the quantity and grade of paper products being discarded from households. This information must be available when plans and decisions are made concerning the recycling and reclamation of paper products. Knowing how many pounds on a per capita per day basis of specific grades are being discarded, it would be possible to estimate the potential raw material supply available from a known population. More easily measured tonnages of solid waste produced by industrial firms, large stores, and office buildings could be added to develop figures for total solid waste in a given community. Secondary goals were to obtain some information on four questions: (1) How many individuals would volunteer to participate in a separate collection? (2) How well would the volunteers participate? (3) How well would volunteers separate paper and paperboard by grade? (4) Would there be any change in participation if another volunteer program was established?

PROCEDURE

On March 17, 1970, a letter was sent to all full-time Forest Products Laboratory personnel (359 individuals) asking them to volunteer for this study (see Appendix). A meeting was held 3 weeks later with 129 volunteers. Only three firm rules were given to the volunteers: (1) Collect all paper products, including newspapers, normally discarded from the household during 14 consecutive days. (2) Separate the items into four categories--newspapers, magazines, strong papers, and all other papers. The "strong papers" category included brown paper and bags, dark-colored bags, corrugated containers, and milk cartons. (3) Do not conduct special house cleaning or change the household routine in any way that would bias the survey.

A few examples were given of specific paper and board items, and into which grade they should be placed. No itemized list, specifying in which grade each item belonged, was handed to the participants. Volunteers were supplied with a bag and a tag for each grade. The name of the grade of paper and a number was placed on each tag. Two Laboratory entrances were designated a8 collection points for the filled bags (fig, 1).

The contents from all bags of material were weighed and retained for future studies. A 10 percent sample of total returns was selected for each grade, using a table of random numbers to select the participant, and the flip of a coin to select the grade. Each of the selected bags was opened, the total contents weighed, a moisture content sample removed to determine ovendry weight, and the contents checked to make certain that only the designated grade was included,

The five members of the group that initiated and conducted the study (the work unit group) participated exactly as did the other volunteers. Each bag turned in by these individuals was analyzed in the same manner as the random sample group bags, but results were tabulated separately since this subgroup had specialized knowledge of separation criteria.

Several weeks after the collection was completed, a questionnaire was sent to all participants to solicit additional information and their reactions to the program (see Appendix).

GROUP CHARACTERISTICS

Over 50 percent of the volunteers were individuals who plan, conduct, report and review the results of research as part of their daily routine. Very few volunteers had jobs only remotely connected to research activities.

Because the volunteers have a daily involvement with research and proprietary interest in the success of Forest Products Laboratory studies, they could be expected to produce factual results to a much greater degree than would a more general group. Material collected by the volunteer families could be expected to closely

Figure 1.--Laboratory technicians assisted volunteers in removing bags of separated material from cars at two collection points.

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represent discards by families of equal size and age composition, where a family member has full-time employment. An unemployed household head or poverty level income could influence results of any similar survey made with a general public group. The random sample group approximated the total volunteer group very closely, because of the manner in which members were selected.

QUANTITIES BY GRADE

Table 1 summarizes weight data by group and the percentage of total household wastepaper in each grade in this study. Used newspapers were 47.3 percent of total paper discards by all volunteem, magazines were 12.8 percent, strong papers 11.7 percent, and mixed gapers 28.1 percent.

Many volunteers indicated that they save magazines for long periods, and 18 percent said they did not discard any magazines during the 14-day separation period. If all volunteers followed directions not to change their discard habits for the study, the magazine percentage should be accurate, However, a longer collection period would be necessary to remove all uncertainty concerning the magazine percentage.

Correlation of grade weights on a per person per day basis between the total volunteer group, the random sample group, and the work unit group was poor enough to be questionable. The age distribution in families would account for this, since small children would not consume the same amounts of paper as adults. The data correlation among groups, and between groups, was satisfactory on a pounds per family per week basis, which has a balancing effect on the age distribution.

Separation errors in the strong and mixed paper grades had a small effect on the weight data in this study.

Table 1.--Average grade weights collected per person per day and per family per week, and as percent of total weight collected

Grade and group	Average dryness	Average ovendry net weight	Percentage of total material collected	Average ovendry weight			
				Per person per day		Per family per week	
		Gram		Gram	Lb.	Gram	Lb.
Newspapers			47.3				
Random sample group	93.0	68,257		138.2	0.30	2,625.3	5.8
Work unit group	92.0	24,497		95.1	.21	2,449.7	5.4
All volunteers[1]		[2]725,318		115.2	.25	2,878.2	6.3
Magazines			12.8				
Random sample group	95.3	18,267		38.4	.08	702.6	1.5
Work unit group	95.3	6,252		29.7	.07	625.2	1.4
All volunteers[1]		[2]196,773		31.3	.07	780.8	1.7
Strong papers			11.7				
Random sample group	93.6	18,826		30.7	.07	724.1	1.6
Work unit group	93.3	10,028		40.3	.09	1,002.8	2.2
All volunteers[1]		[2]179,546		28.5	.06	712.5	1.6
Mixed papers			28.1				
Random sample group	92.9	40,838		53.4	.12	1,570.6	3.5
Work unit group	92.4	18,678		66.6	.15	1,867.8	4.1
All volunteers[1]		[2]430,318		68.4	.15	1,707.6	3.8

[1]All volunteers include the random sample group and the work unit group.

[2]Values calculated from weight of all material as received.

SEPARATION ACCURACY

The number of grades that can be specified in a household wastepaper separation program depends on the ability of individuals to distinguish between different grades and to distinguish between paper and nonpaper products.

In this study, 46 percent of the volunteers indicated difficulty in deciding into which grade a paper product should be placed. Eight percent indicated some difficulty, and 45 percent indicated no difficulty. Separation analyses (Tables 2-5) showed no errors for newspapers and magazines, the easily identifiable Items. However, the random sample group included 21 percent by weight of mixed papers in the strong paper grade, and 0.5 percent strong papers in the mixed paper grade. Separation difficulty in the strong and mixed paper grades had been anticipated, because many items in these grades are lower grade fiber covered with a layer of high-grade fiber, a synthetic coating, or ink.

Of the total volunteer group, 81 percent said they had no difficulty distinguishing between paper and nonpaper items, 5 percent reported slight difficulty, and 15 percent said they had difficulty. The check of random sample group separation showed nonpaper items only in the mixed paper group, 1.3 percent of the total weight. All nonpaper items were plastics, usually meat and produce trays which resemble closely trays made of wood fiber.

The work unit group reported separation difficulty, but to a lesser extent than other volunteers. Some volunteers requested lists of items to place in particular grades. These requests were denied because a goal of the study was to determine how well individuals could separate the grades with a minimum of prior instruction.

PARTICIPATION LEVEL

About 35 percent of the individuals invited to participate in the household trash separation study volunteered. No information is available for a comparison of this percentage with volunteer data for other separation programs.

Several factors should have influenced potential volunteers to participate in this study. All were aware that the program was considered worthwhile by their organization. Some assistance was promised and provided; bags were supplied for storage of the separated material in the household, and help was given in transferring filled bags

Table 2.--Weight of newspaper collected by random sample group and work unit group

Number of persons in family	Gross weight	Weights of other grades included		Adjusted gross weight	Dryness	Ovendry net weight	Ovendry weight per person per day		Ovendry weight per family per week	
		Grade	Weight							
	Gram		Gram	Gram	Pct.	Gram	Gram	Lb.	Gram	Lb.
RANDOM SAMPLE GROUP										
3	5,002			5,002	92.4	4,622	110.1	0.24	2,310.9	5.1
4	4,055			4,055		3,771	67.3	.15	1,885.6	4.1
5	4,334			4,334	93.8	4,065	58.1	.13	2,032.7	4.5
1	4,141			4,141	93.0	3,851	275.1	.61	1,925.6	4.2
6	4,757			4,757	93.3	4,438	52.8	.12	2,219.2	4.9
4	5,524			5,524	92.9	5,132	91.6	.20	2,565.9	5.6
4	5,085			5,085	93.0	4,729	84.4	.19	2,364.6	5.2
2	5,761			5,761	93.7	5,398	192.8	.42	2,699.1	5.9
2	10,967			10,967	92.0	10,090	360.3	.79	5,044.8	11.1
5	2,238			2,238	92.4	2,068	29.5	.07	1,034.0	2.3
2	4,540			4,540	93.2	4,231	151.1	.33	2,115.7	4.7
4	9,844			9,844	93.0	9,155	163.5	.36	4,577.5	10.1
3	7,227			7,227	92.8	6,707	159.7	.35	3,353.4	7.4
Average 3.5	5,652			5,652	93.0	5,251	138.2	.30	2,625.3	5.8
WORK UNIT GROUP										
4	5,030			5,030	92.2	4,638	82.8	.18	2,318.9	5.1
2	4,281			4,281	93.2	3,990	142.5	.31	1,995.0	4.4
3	4,803			4,803	93.0	4,467	106.4	.23	2,233.4	4.9
3	4,419			4,419	91.1	4,026	95.9	.21	2,012.9	4.4
11	8,151			8,151	90.5	7,377	47.9	.11	3,688.4	8.1
Average 4.6	5,337			5,337	92.0	4,899	95.1	.21	2,449.7	5.4

Table 3.--Weight of magazines collected by random sample group and work unit group

Number of persons in family	Gross weight	Weights of other grades included		Adjusted gross weight	Dryness	Ovendry net weight	Ovendry weight per person per day		Ovendry weight per family per week	
		Grade	Weight							
	Gram		Gram	Gram	Pct.	Gram	Gram	Lb.	Gram	Lb.
RANDOM SAMPLE GROUP										
5	1,474			1,474	94.9	1,399	20.0	0.04	699.4	1.5
5	688			688	94.7	652	9.3	.02	325.8	.7
4	0			0		0	0	0	0	0
2	3,864			3,864	96.3	3,721	132.9	.29	1,860.5	4.1
3	0			0		0	0	0	0	0
2	1,328			1,328	94.8	1,259	45.0	.10	629.5	1.4
3	777			777	95.1	739	17.6	.04	369.5	.8
1	956			956	94.8	906	64.7	.14	453.2	1.0
5	390			390	94.9	370	5.3	.01	185.1	.4
5	3,522			3,522	95.4	3,360	48.0	.11	1,680.0	3.7
3	3,769			3,769	96.1	3,622	86.2	.19	1,811.0	4.0
2	1,846			1,846	95.9	1,770	63.2	.14	885.2	1.9
5	490			490	95.7	469	6.7	.01	234.5	.5
Average 3.5	1,470			1,470	95.3	1,405	38.4	.08	702.6	1.5
WORK UNIT GROUP										
4	2,018			2,018	97.6	1,970	35.2	.08	984.8	2.2
2	1,597			1,597	95.2	1,520	54.3	.12	760.2	1.7
3	2,476			2,476		2,360	56.2	.12	1,179.8	2.6
3	0			0		0	0	0	0	0
11	432			432	93.1	402	2.6	.01	201.1	.4
Average 4.6	1,305			1,305	95.3	1,250	29.7	.07	625.2	1.4

Table 4.--Weight of strong paper (includes dark-colored bags, corrugated containers, and milk cartons[1]) collected by random sample group and work unit group

Number of persons in family	Gross weight	Weights of other grades included: Grade	Weights of other grades included: Weight	Adjusted gross weight	Dryness	Ovendry net weight	Ovendry weight per person per day		Ovendry weight per family per week	
	Gram		Gram	Gram	Pct.	Gram	Gram	Lb.	Gram	Lb.
RANDOM SAMPLE GROUP										
5	1,448			1,448	93.9	1,360	19.4	0.04	679.9	1.5
3	1,413	Mixed:	495	918	93.9	862	20.5	.05	431.0	.9
5	1,026			1,026	93.9	963	13.8	.03	481.7	1.1
5	530			530	93.4	495	7.1	.02	247.5	.5
3	4,605	Mixed:	1,570	3,035	93.8	2,847	67.8	.15	1,423.4	3.1
4	3,598	Mixed:	1,061	2,537	95.1	2,413	43.1	.10	1,206.4	2.7
3	1,471			1,471	93.0	1,368	32.6	.07	684.0	1.5
6	1,808	Mixed:	427	1,381	94.5	1,305	15.5	.03	652.5	1.4
4	2,084			2,084	94.3	1,965	35.1	.08	982.6	2.2
2	1,341			1,341	92.5	1,240	44.3	.10	620.2	1.4
3	3,063			3,063	93.7	2,870	68.3	.15	1,435.0	3.2
5	1,488	Mixed:	1,005	483	93.0	449	6.4	.01	224.6	.5
2	1,517	Mixed:	765	752	91.6	689	24.6	.05	344.4	.8
Average 3.8	1,953		410	1,544	93.6	1,448	30.7	.07	724.1	1.6
WORK UNIT GROUP										
4	3,485	Mixed:	976	2,509	94.1	2,361	42.2	.09	1,180.5	2.6
2	1,806			1,806	93.6	1,690	60.4	.13	845.2	1.9
3	2,381			2,381	93.6	2,229	53.1	.12	1,114.3	2.5
3	1,293			1,293	94.7	1,225	29.2	.06	612.3	1.3
11	2,782			2,782	90.7	2,523	16.4	.04	1,261.7	2.8
Average 4.6	2,349		195	2,154	93.3	2,006	40.3	.09	1,002.8	2.2

[1] Milk cartons were included because they contain high-quality wood fiber comparable to fiber in other material in this category.

Table 5.--Weight of mixed papers collected by random sample group and work unit group

Number of persons in family	Gross weight	Weights of other grades included: Grade	Weights of other grades included: Weight	Adjusted gross weight	Dryness	Ovendry net weight	Ovendry weight per person per day		Ovendry weight per family per week	
	Gram		Gram	Gram	Pct.	Gram	Gram	Lb.	Gram	Lb.
RANDOM SAMPLE GROUP										
2	1,390			1,390	93.4	1,298	46.4	0.10	649.2	1.4
4	1,650			1,650	93.5	1,543	27.6	.06	771.4	1.7
4	3,982			3,982	89.1	3,548	63.4	.14	1,774.0	3.9
5	3,666			3,666	93.9	3,442	49.2	.11	1,721.2	3.8
5	5,327	Strong:	241	5,086	93.1	4,735	67.6	.15	2,367.6	5.2
4	772			772	93.2	720	12.8	.03	359.8	.8
4	4,095			4,095		3,804	67.9	.15	1,902.2	4.2
2	1,678			1,678	94.2	1,581	56.5	.12	790.4	1.7
2	1,402			1,402	92.8	1,301	46.5	.10	650.6	1.4
7	9,982			9,982	91.5	9,134	93.2	.21	4,566.8	10.0
3	2,651			2,651	93.2	2,471	58.8	.13	1,235.4	2.7
6	6,898			6,898	94.6	6,526	77.7	.17	3,262.8	7.2
2	793			793	92.8	736	26.3	.06	368.0	.8
Average 3.8	3,407		18.5	3,388	92.9	3,141	53.4	.12	1,570.6	3.5
WORK UNIT GROUP										
4	1,148			1,148	94.2	1,081	19.3	.04	540.7	1.2
2	1,951			1,951	93.9	1,832	65.4	.14	916.0	2.0
3	7,757			7,757	89.3	6,927	164.9	.36	3,463.5	7.6
3	1,622			1,622	92.6	1,502	35.8	.08	751.0	1.7
11	7,956			7,956	92.2	7,335	47.6	.10	3,667.7	8.1
Average 4.6	4,087			4,087	92.4	3,736	66.6	.15	1,867.8	4.1

from private vehicles to bins at the collection points. Considerable flexibility was permitted, since volunteers could select any 14–day period within 2 months to perform the separation, providing only that the 14 days were consecutive.

However, participation did involve personal inconvenience in transporting bags to the Laboratory and in adopting a drastic change in normal household routine, By design no pressure was put on individuals to participate, and no extensive education program was conducted to convince potential volunteers of the merits of participation.

It is not known what effect, if any, changes in the structure of the study would have on the level of participation in identical or similar household separation projects conducted with the general public.

QUALITY OF PARTICIPATION

How well did the volunteers participate? Of the 129 volunteers, only three did not complete a 14-day separation period. One Withdrew before the collection period began, one left the area during the collection period because of another commitment and could not participate, and one failed to participate and made no withdrawal notification. The completion percentage was very good, indicating a high level of dedication by the volunteers.

In any household separation program participants might continue to discard some paper and paper products with other waste, and there is no practical method of determining or preventing this. We depended on Me volunteers' questionnaire responses for this information. The majority (71 percent) indicated that they had included all paper materials in the four categories. Of the 29 percent who said they had not, all indicated that they had withheld less than 5 pounds of waste–paper during their 14-day separation period. Most of this material was said to be undesirable to handle because it was combined with food wastes, and it was discarded in the normal fashion with other household solid waste,

FUTURE PARTICIPATION

Nearly 100 percent of the volunteers said they would be willing to participate in another 14–day separation plan.

When all volunteers were asked if they would participate permanently, however, 76 percent said they would and 13 percent said they would not. The others said they would participate in a modified plan: 4 percent would separate wastepaper into two grades, 5 percent would separate into three grades, and 3 percent would separate paper from other household trash only. Many volunteers who were unwilling to participate in a permanent program, or wanted changes in the program, said that they have limited storage space and do not want to use the space to store the separate grades.

CONCLUSIONS

In this study, daily per person paper discards in household trash averaged 0.53 pound. Discards were 47 percent newspapers, 13 percent magazines, 12 percent strong papers, and 28 percent all other paper items mixed.

Much more knowledge is needed of the motivation of individuals to participate in household trash separation plans. Thirty–five percent of the employees asked did participate in this study. The effects on participation of education programs, pressures such m legislation, family makeup, income levels. and personal inconvenience should be studied by such specialists a8 sociologists and economists if household separations axe to be initiated on a sound basis. Additional problems to be considered are storage, collection and transportation of the separate grades.

The volunteer group in this study had no difficulty separating easily identified item such as newspapers and magazines. Difficulty was experienced in identifying items in the strong paper and mixed paper grades and in distinguishing between paper and nonpaper item in the mixed grade. It is probably impossible for most people to separate high- and low–quality wood fiber products in mixed grades or to distinguish between paper and nonpaper items in these grades without very detailed instructions or a test procedure.

Some paper items were discarded with other household trash, even though the separation period was short and volunteers were highly motivated.

Separate collection of used newspapers from households removes a large quantity of material from household trash, and should be encouraged

where markets for waste newspapers exist and families are receptive to the idea. Newspapers contain relatively low–grade wood fiber from a reclamation standpoint, and their removal from other solid waste at the source should improve the possibilities for recycling and reclaiming other wood fiber products from municipal solid waste,

Nearly all volunteers were willing to repeat the 14–day separation, but thepercentage dropped considerably when they were asked if they would separate paper items from other household trash permanently.

RECOMMENDATION

If future household separation programs attempt to reclaim the high–quality wood fiber from the strong paper grade defined in this study, these item should be labeled when manufactured as to disposal grade to eliminate uncertainty by indi–viduals doing the sorting.

ACKNOWLEDGMENTS

The author gratefully acknowledges the work of Erwin Elert and Charles Solbrig in assisting vol–unteers and providing technical assistance, and the cooperation of fellow employees at the Forest Products Laboratory who made it possible to con-duct this study.

APPENDIX I

Letter Requesting Volunteers

March 17, 1970

Fellow Employees of the Forest Products Laboratory:

This letter is printed an the second of a series of papers manufactured with significant quantities of wood fiber recovered from solid waste going into the Madison sanitary landfill operation. This paper is a printing grade containing 30 percent recovered fiber.

During the discussion following my March 4 Forum, some questions were raised regarding separate paper collection, particularly in relation to potential incentive or penalty legislation now in the news. Our staff working on the solid waste problem suggested that a test at the Forest Products Laboratory could provide valuable information concerning advantages and disadvantages of separate paper collection and other questions pertinent to our research program

Perhaps you would like to help. We are asking for volunteers from the FPL staff who would agree to save, separate, and bring to the Laboratory all paper items normally discarded for city collection. A number of two-week collection periods are necessary to get the desired statistical data.

Basically, volunteers will be asked to separate paper waste into four categories: (1) newspapers, (2) magazines, (3) brown or dark-coloredbags and containers, and (4) all other items (tissues, cereal boxes, frozen food containers, stationery, etc.), WFPR will provide bags which should hold a week's material for each of the four categories. Individuals participating would bring the bags to the FPL at the end of each week, and deposit them in bins provided near the various Lab entrances. Any help needed in removing bags from cars will be available through a phone call to WFPR (ext. 225).

To make the test data meaningful. we need at least 100 volunteers, who will bring only the amount of paper discarded by their families in the weeks to be specified, not accumulations from previous weeks or months.

How about it? If you want to participate in helping us develop needed information, leading to an effective solution of several problems, sign the attached form and return it to the Wood Fiber Products Research Division by March 31. You will then receive detailed information on the procedure, and answers to additional questions.

RICHARD J. AUCHTER, Chief
Wood Fiber Products Research

APPENDIX II

Volunteer Response Form

_____
(Date)

To : Wood Fiber Products Research

From: _____ (Signature)

_____
(Division) (FPL phone)

I volunteer to participate in tests involving the separation of paper items now discarded by my family. I understand that this will involve separating the items into four categories and bringing four bags of material to the Laboratory each week in a series of two-week tests.

During the orientation for volunteers, I would like to have the following questions answered regarding the test procedure.

APPENDIX III

Questions Sent to the Participants in the Study

1. How many persons generated the wastepaper which was separated for the study?

2. Did you separate the materials for a full 14 days? If leas, please state the number of days,

3. Did you have any grades for which no material was discarded during the separation period? If so, which grade(s)?

4. Did you discard any paper and board products with your other refuse? If so, what was it, and about how many pounds?

5. Did you experience any difficulties in deciding if an item was made from paper, or some other material?

6. Did you experience any difficulties in deciding into which grade a particular paper item should be placed?

7. Did any event occur in your home during the two–week period which would have generated an abnormal amount of wastepaper? (House-cleaning, party, major shopping, or some other event.)

8. Would you be willing to participate in another two–week trial period, at a later date? If not, would you give reasons.

9. Would you be willing to separate all paper products permanently, if the municipal government decided to legislate a separate collection refuse system? If not, would you give reasons.

10. Any comments or opinions you wish to express on separate collection, or how this study was conducted?

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