Update on Diapers

– Revised –

Eighteen Billion Disposable Diapers Thrown Away Every Year: A Summary of Recent Waste Reduction Activities by State and Localities

CENTER FOR POLICY ALTERNATIVES
2000 Florida Avenue, NW
Washington, DC 20009

September, 1990

Printed on Recycled Paper
The Center for Policy Alternatives is a nonprofit center on progressive policy for state and local government. Since 1975, the center has provided policy models, direct technical assistance and a broad range of publications for government officials and the public. Current programs focus on public capital, democratic participation, economic development, the environment, family and work, sustainable agriculture and women's economic justice.

The Center for Policy Alternatives is governed by a board of directors chaired by David Carley. Linda Tarr-Whelan is President and Executive Director.
# CONTENTS

**Diaper Legislation -- Summary**
- Maine, Virginia
- California, Connecticut
- Wisconsin, Iowa
- Illinois, New Jersey
- Vermont, Florida, Oregon (Multnomah County)
- New York

"Market Driven Environmentalism: Can We Have A Cleaner Environment and Pampers, Too?" — *Forbes*

**Public Education**
- New York State Consumer Protection Board
- Vermont
- Cornell Cooperative Extension
- San Francisco Recycling Program
- Public Service Company of Colorado

**Polls**
- Assemblyman William Bush (New York)
- Wall Street Journal

**Hospital Switch to Cloth**

**Disposable Diapers Recycling**

**Biodegradable Plastics/Diapers**

**Media Coverage**

**State Legislators' Letter Regarding Industry Study of Disposables vs. Cloth**

**Center for Policy Alternatives Review of Arthur D. Little Diaper Study**
FOREWORD

As the solid waste crisis worsens, efforts by policymakers and environmental advocates to achieve significant waste reduction have focused on the 18 billion disposable diapers entering U.S. landfills. This single-use product accounts for an estimated two to three percent of the total tonnage of municipal solid waste.

Sparked, in part, by our report on disposables, (Positive Steps Towards Waste Reduction: Focus on Disposable Diapers, July, 1989), there has been widespread media attention to this solid waste problem, making consumers aware of the environmental implications of their diapering decisions. A June, 1990 Gallup Organization survey (reported in the Wall Street Journal, September 5, 1990) found that 25 percent of current disposable diaper users are willing to switch to cloth diapers to help improve the environment. Recent polls also show strong public support for regulation of disposable diapers; a national Wall Street Journal/NBC News telephone poll of registered voters showed that respondents favor a ban on disposable diapers by a 3-to-1 margin. On a national average, cotton diaper service customers increased by almost 40% in the past twelve months. This awareness is also having an effect on institutions. A growing number of hospitals are switching to cotton diapers, realizing significant savings as well as positive community reaction.

During the 1990 legislation session, more than 20 states and numerous local governments introduced legislation and supported public education efforts to reduce the use of disposables and encourage the use of reusable cotton diapers whenever possible. The proposals, many of which are outlined in this report, include a variety of effective policy approaches to this problem.

The response of the disposable industry to protect their $3.5 billion market has included extensive lobbying efforts, including a recent American Paper Institute mailing to state legislators, and a nationwide publicity drive focused on an environmental impact study conducted by A.D. Little, a Cambridge, Massachusetts consulting firm, for Procter & Gamble. Our initial evaluation of the A.D. Little study and a response letter from environmental legislators who have sponsored diaper legislation is included in this report.

The diaper debate will certainly continue in upcoming legislative sessions. We intend this Update to provide you with current information on legislative proposals and other activities to reduce waste generation by decreasing the use of disposable diapers. If you have additional information regarding diapers or other waste reduction proposals to add to our legislative clearinghouse, we would appreciate hearing from you.

Section I -- Legislative Action

Four state legislatures enacted diaper legislation in the 1990 session. Maine revised its child care regulations to allow the use of cloth diapers laundered by an accredited diaper service. A similar bill which would prohibit child care centers from discriminating against the use of cotton diapers and give parents the right to choose the diapering method for their child was also passed by in California, but was vetoed by the outgoing Governor. Virginia's legislative resolution directs the state's Department of Waste Management to consider disposable diapers in its comprehensive waste management program, a move which has been replicated in other states' administrative solid waste planning. Reusable cotton diapers laundered by a diaper service were exempted from state sales tax by the Wisconsin legislature.
A surprising number of bans of disposable diapers were proposed by state legislators and municipal officials. One of the most highly publicized was a proposal by Vermont's Governor Madeline Kunin, which was not enacted. Still under consideration is a proposal in Portland, Oregon.

A March, 1990 Forbes magazine article, "Market Driven Environmentalism: Can We Have A Cleaner Environment and Pampers too?," presented an in-depth summary of the strategy to tax single-use diapers to pay their true costs of disposal. On the whole, however, tax related proposals were defeated in state legislative committees, many of them postponed pending a more comprehensive proposal for waste or disposal taxes on a wider variety of products.

Publicly funded education efforts on the impact of disposable diapers were the focus of many states' and cities' waste reduction efforts, a few examples of which are included in this report. Maine, New York and Vermont have published consumer pamphlets for statewide distribution. San Francisco has published a brochure on recycling, with extensive information on disposable diapers. Funding was provided by Albany County, New York State and federal grants for a pamphlet produced by the Cornell University Cooperative Extension.

Section II -- Private Actions

One of the remarkable developments over this past year has been the number of institutions, including hospitals and day care centers, switching to cotton diapers. 20 of the 23 hospitals in the Seattle metro area, for example, are now using cloth. The Public Service Company of Colorado is mailing a bill insert on disposable diapers, which offers a free week of diaper service to customers. Their lobby display of diapering alternatives, showing a mountain of 6,000 disposable diapers juxtaposed to 48 cotton diapers which would be used by one child, received significant media attention around Earth Day.

Section III -- Environmentalists Attack Biodegradable Diapers

In first considering the diaper issue, many policymakers were drawn to support "biodegradable" disposables as a solution to the waste problem. However, this approach has been strongly opposed by environmentalists concerned that, in fact, these diapers do not reduce the disposal capacity problem and interfere with efforts to recycle plastics. In December, 1989, a nationwide boycott of "degradable" plastics -- including disposable diapers -- was announced by major environmental organizations and Public Citizen, Ralph Nader's consumer organization.

Section IV -- Media Coverage

Media attention to the diaper issue has continued unabated. As disposable diapers are the single consumer product, with the exception of newspapers and food and beverage containers, which contributes the most to our solid waste problem, consumer, institutional and policymaker interest has remained very high. Support for waste reduction, however, is not universal, as evidenced by Robert J. Samuelson's Newsweek column, which is included with other sample press clips in this report.

Jeffrey Tryens
Associate Director
## STATE DIAPER LEGISLATION

---introduced, considered or pending in 1990---

<table>
<thead>
<tr>
<th>State</th>
<th>Bill No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>--Alaska</td>
<td>SB 441</td>
<td>Non-biodegradable ban</td>
</tr>
<tr>
<td>--Arizona</td>
<td>HB 2278</td>
<td>Ban if degradable cost within 5%</td>
</tr>
<tr>
<td>--California</td>
<td>AB 2582</td>
<td>Non-biodegradable ban</td>
</tr>
<tr>
<td></td>
<td>SB 2342</td>
<td>Cloth for child care*</td>
</tr>
<tr>
<td></td>
<td>SB 2837</td>
<td>Warning on disposables</td>
</tr>
<tr>
<td>--Colorado</td>
<td>HB 1157</td>
<td>1 cent/diaper tax</td>
</tr>
<tr>
<td>--Connecticut</td>
<td>HB 5496-8, 5500, 5654</td>
<td>Help for cloth</td>
</tr>
<tr>
<td></td>
<td>HB 5851</td>
<td>Cloth for child care</td>
</tr>
<tr>
<td>--Florida</td>
<td>SB 1244</td>
<td>Ban after 1993</td>
</tr>
<tr>
<td>--Hawaii</td>
<td>SB 2100</td>
<td>Non-biodegradable ban</td>
</tr>
<tr>
<td>--Iowa</td>
<td>HS 3831</td>
<td>1 percent sales tax</td>
</tr>
<tr>
<td>--Illinois</td>
<td>HB 3634</td>
<td>1 cent/diaper tax</td>
</tr>
<tr>
<td>--Maine</td>
<td>PL 723</td>
<td>Allow cloth for day care*</td>
</tr>
<tr>
<td>--Massachusetts</td>
<td>H 5338</td>
<td>Non-biodegradable ban</td>
</tr>
<tr>
<td>--New Hampshire</td>
<td>HB 1368</td>
<td>1 cent/diaper fee</td>
</tr>
<tr>
<td>--New Jersey</td>
<td>AB 1813</td>
<td>Labeling</td>
</tr>
<tr>
<td></td>
<td>AB 2227</td>
<td>Labeling, grants</td>
</tr>
<tr>
<td></td>
<td>AB 3412</td>
<td>1 cent/diaper tax</td>
</tr>
<tr>
<td>--New York</td>
<td>A 8004</td>
<td>Environmental warning</td>
</tr>
<tr>
<td></td>
<td>A 10587</td>
<td>Distribute brochure to mothers</td>
</tr>
<tr>
<td></td>
<td>A 2885</td>
<td>Non-biodegradable ban</td>
</tr>
<tr>
<td>--Ohio</td>
<td>HB 681</td>
<td>Labeling, non-biodegradable ban</td>
</tr>
<tr>
<td>--Pennsylvania</td>
<td>HB 1909</td>
<td>Ban</td>
</tr>
<tr>
<td></td>
<td>HB 5851</td>
<td>Cloth for day care</td>
</tr>
<tr>
<td>--Rhode Island</td>
<td>S 1855</td>
<td>Non-biodegradable ban</td>
</tr>
<tr>
<td>--South Dakota</td>
<td>HB 1302, 1338</td>
<td>3 cent/diaper fee</td>
</tr>
<tr>
<td>--Tennessee</td>
<td>HB 1632</td>
<td>Non-biodegradable ban</td>
</tr>
<tr>
<td>--Vermont</td>
<td>+</td>
<td>Ban, grants for cloth services</td>
</tr>
<tr>
<td></td>
<td>SB 324</td>
<td>Non-biodegradable ban</td>
</tr>
<tr>
<td></td>
<td>HB 886</td>
<td>Report to encourage cloth</td>
</tr>
<tr>
<td>--Wisconsin</td>
<td>SB 300</td>
<td>Sales tax exempt, loans for cloth services*; 1 cent/diaper tax</td>
</tr>
<tr>
<td>--Virginia</td>
<td>HJR 145</td>
<td>Environmental, consumer study*</td>
</tr>
</tbody>
</table>

*Legislation passed
+Proposal by governor

Sept., 1990
STATE OF MAINE

IN THE YEAR OF OUR LORD
NINETEEN HUNDRED AND NINETY

H.P. 1347 - L.D. 1864

An Act Allowing Day Care Centers to Use Cloth Diapers

Be it enacted by the People of the State of Maine as follows:

22 MRSA §8302, sub-§3 is enacted to read:

3. Approval of laundering services. The rules must allow the use of cloth diapers in a day care facility if the facility employs a diaper laundering service. The rules must require that the diaper laundering service be endorsed by a national accrediting organization and must specify the type of diaper covers that must be used.

GENERAL ASSEMBLY OF VIRGINIA--1990 SESSION

HOUSE JOINT RESOLUTION NO. 145

Requesting the Department of Waste Management in the development of its statewide comprehensive program for waste management to give appropriate consideration to the environmental, economic and consumer impact of disposable diapers.

Agreed to by the House of Delegates, March 9, 1990
Agreed to by the Senate, March 7, 1990

ROBERT T. ANDREWS

MEMBER
HOUSE OF DELEGATES
THIRTY-FOURTH DISTRICT

820 TURKEY RUN ROAD
MCLEAN, VIRGINIA 22101
PHONE (703) 442 8838 (O)
(703) 356 4797 (H)
RICHMOND (804) 786 8692

- 2 -
DIAPER DISCRIMINATION BILL TO GOVERNOR

SACRAMENTO -- Legislation by State Senator Lucy Killea (D-San Diego) to require day care centers to allow parents to diaper their babies in cloth or disposables passed a Senate concurrence vote today 28-7 and is before the Governor.

Killea's bill, SB 2342, would prohibit child day care centers from refusing to care for a child in reusable diapers. Violation of the law would carry a civil penalty of not more than $50 for each day the violation occurs. The bill also lets day care centers charge a fee, not to exceed actual costs, for handling diapers.

AN ACT CONCERNING THE PROHIBITION OF CLOTH DIAPERS AT DAY CARE CENTERS.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

(NEW) No child day care center, as defined in section 19a-77 of the general statutes, may prohibit the use of cloth diapers by any child in its care.
1989 Wisconsin Act

SECTION 42g. 77.52 (2) (a) 6 of the statutes is amended to read:

77.52 (2) (a) 6. Laundry, dry cleaning, pressing and dyeing services, except when performed on raw materials or goods in process destined for sale, except when performed on cloth diapers by a diaper service and except when the service is performed by the customer through the use of coin-operated, self-service machines.

Diapers services exempt from sales tax.

State tax planned on paper diapers

Dirty diapers are piling up in Iowa's landfills, and a House committee wants to do something about it by levying a tax on disposable diapers.

The Energy and Environmental Protection Committee is considering a proposal to charge Iowans a 1 percent tax on each package of disposable diapers they buy.

The "diaper tax" would encourage more Iowans to help recycling efforts by using cloth diapers, said committee chairman Ralph Rosenberg, an Ames Democrat.

Disposable diapers account for 1 percent to 2 percent of the waste in landfills.

"It's not a major problem. We have to do more things" to reduce landfill waste, Rosenberg said, but every cloth diaper helps.
HOUSE BILL 3634

86th GENERAL ASSEMBLY
State of Illinois
1989 and 1990

Introduced April 5, 1990, by Representatives Homer Currie Wennlund

SYNOPSIS
(Ch. 111 1/2, pars. 7052 and 7056)

Amends the Illinois Solid Waste Management Act. Provides that the Department of Energy and Natural Resources shall provide grants and low interest loans to assist local waste management efforts and to help implement waste management practices on the State level. Provides that funding for grants and loans for reusable diaper services shall come from a $.01 per single use diaper advance disposal fee. Also provides that funding for grants and loans to study other reusable products shall come from a $.01 per single use product advance disposal fee.

ASSEMBLY, No. 3412
STATE OF NEW JERSEY
INTRODUCED APRIL 26, 1990

By Assemblymen FRANKS and Assemblywoman OGDEN

AN ACT establishing a tax on disposable diapers, dedicating the revenue therefrom for solid waste recycling expenses and supplementing Title 54 of the Revised Statutes.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:
1. a. There is imposed upon each retail purchaser of disposable diapers a tax of $0.01 per disposable diaper purchased at retail in this State to be collected by the retail vendor.
DISPOSABLE DIAPER BAN SUMMARY

Disposable Diaper Ban

Governor Kunin proposes to ban the sale of disposable diapers in Vermont, starting July 1, 1993. Making the transition from the throw-away society to a conservation-minded society requires more than "business as usual".

Metro Council panel would ban disposable diapers from landfill

By JAMES MAYER
of The Oregonian staff

Disposable diapers are no longer wanted in the region's garbage, a Metro Council committee decided Monday night.

Over vigorous opposition by industry groups and some parents, the Solid Waste Committee adopted a resolution declaring disposable diapers "incompatible with the solid waste system."

In other business, the committee voted to increase rates at the St. Johns Landfill and other garbage facilities under Metro's control.

The resolution against disposable diapers, written by Councillor Gary Hansen, chairman of the committee, calls on the Metropolitan Service District to take steps to reduce the health hazard and the waste of landfill space posed by the diapers. The resolution now goes to the Metro Council for consideration.

Hansen, who represents North Portland on the council, is a candidate for the Multnomah County Board of Commissioners.

Disposable diapers account for about 1 percent of the region's trash, or about 11,600 tons a year, Hansen said.

Paul Cosgrove, representing the Diaper Manufacturers Group of the American Paper Institute, argued that disposable diapers did not pose a health hazard and might in fact be safer than cloth diapers.

Portland Oregonian,

March 13, 1990

Disposable diapers

McPherson wants them outlawed

State Sen. Tom McPherson wants disposable diapers banned in Florida as an environmental consideration, but the idea already is finding opposition among working mothers and day-care centers.

"We're running out of landfill space," said the Fort Lauderdale Democrat. "There are young mothers who are going to scream and holler."

Many day-care centers will not accept children who wear cloth diapers instead of disposables.

"You just cannot handle cloth diapers as sanitarily," says Sallye Blake, spokeswoman for KinderCare Learning Centers Inc., a national chain of 1,250 day-care centers.

Cloth diapers leak, and diaper pails provide a ready home for disease-causing germs, she said.

Yet McPherson, the diaper-service industry and cloth-diaper devotees reject all of the pro-disposables arguments.

"I'm sick and tired of people talking about their convenience," the senator said. "Yeah, times have changed: We're running out of landfill space, we're polluting our air, and we're befouling our water."

McPherson has filed a bill (SB 1244) to ban disposable diapers by October 1993.
Also, the bill requires that starting Jan. 1, 1991, hospitals must provide new mothers, at the time they are discharged, a copy of a diaper pamphlet produced by the New York State Consumer Protection Board. Failure to comply with this requirement could subject the hospital to a civil fine not to exceed $250.

§ 399-c. Disposable diaper labeling. 1. On each box of disposable diapers sold or delivered by a manufacturer within the state of New York after January first, nineteen hundred ninety-one, shall be printed thereon or attached thereto a notice to consumers regarding the environmental impacts of the product. Such notice shall be in letters not less than eight point type and in a color in contrast with the package containing the disposable diapers and shall contain the following statement:

"DISPOSABLE DIAPERS MAY TAKE OVER ONE HUNDRED YEARS TO DEGRADE IN A LANDFILL. THIS PRODUCT HAS SIGNIFICANT ENVIRONMENTAL IMPACTS AND MAY POSE PROBLEMS IN DISPOSAL. DISPOSABLE DIAPERS ARE USED ONCE AND DISCARDED. THIS PRODUCT WILL CREATE SIGNIFICANT DISPOSAL COSTS TO YOUR COMMUNITY IF USED REGULARLY. YOU MAY WISH TO CONSIDER ALTERNATIVE PRODUCTS THAT HAVE LESS IMPACT ON THE ENVIRONMENT."

2. If a manufacturer claims that the disposable diaper produced by him or her is made out of a material that degrades more quickly than similar materials used in the manufacture of such product, the manufacturer may be exempt from the notice required by subdivision one of this section.
Disposable diapers, one of America's favorite convenience items, are a huge contributor to our nation's burgeoning solid waste problem. Pampers, Luvs, Huggies et al. now account for 2% of the nation's municipal solid waste—in 1988, 18 billion paper and plastic diapers were landfilled in the U.S. That's 3.6 million tons of waste that, researchers believe, will take 500 years to decompose.

What's the solution to this mounting problem? A tax on single-use diapers that will pay the true costs of their disposal. Dumping costs are increasing dramatically, thanks to the fact that most old landfills are glutted and new ones are difficult to site. Tipping fees, costs levied on dumpers by landfill operators, now run an average of about $27 per ton. This means that, on average, parents who use disposable diapers are paying about $50 a year per child to have these diapers dumped, or some 10 cents on every diaper dollar spent. But since tipping fees are expected to cost $100 per ton in ten years, that will jack up the annual cost of disposal to $200 per child.

Cloth diapers are the obvious solution to the Pampers problem: They cost about half of what the single-use variety does and they decompose in six months. To encourage more parents to use cloth diapers, a tax should be slapped on disposables that is roughly equivalent to tipping fees of $100 a ton. The added cost, about 40 cents on every diaper dollar spent, might just convince some mothers to return to cloth. Those who want to continue to use Pampers can, but must pay the full price, including the environmental component.
New York State is in the midst of a solid waste crisis of immense proportions. We must all do our part to solve this problem by Reducing, Reusing, and Recycling commodities. We can purchase products that have a minimal impact on the environment.

Some consumers may find that disposable diapers are more convenient to use than cloth when they are traveling or away from home. It's your choice.
1. What are disposable and cloth diapers made of?

Most disposable diapers are made with an outer layer of plastic (polypropylene) with a liner of an absorbent material made of wood pulp fiber and absorbent chemical gels. Cloth diapers are made out of 100% cotton.

2. How do diapers impact the garbage problems we are having in New York State?

In 1988, New York adopted the Solid Waste Management Act of 1988 (Chapter 70 of the Laws of 1988), which was designed to address the growing solid waste crisis in New York State. Garbage reduction and recycling are at the top of the State's waste disposal priorities. Using cloth diapers instead of disposables is an effective way for consumers to reduce the amount of waste they generate.

3. What percentage of garbage in New York State is attributable to disposable diapers?

In New York State, disposable diapers comprise approximately 2% of all municipal solid wastes and 3.5% to 4.5% of household solid waste by weight. No other single consumer product—with the exception of newspapers and beverage and food containers—contributes so much to our solid waste. Although these figures may seem small when compared with all solid wastes, the current solid waste crisis is so severe that every effort to reduce wastes destined for landfills is very important.

4. Are disposable diapers a problem in our landfills?

Yes. Disposable diapers can take up to 500 years to decompose. The plastic outer layer makes natural decomposition particularly difficult, especially in landfills. In contrast, cloth diapers are reusable many times before being discarded or recycled into rags.

5. Can disposable diapers be burned?

While it is possible to burn disposable diapers, concerns remain about the potential for air pollution, and the hazardous characteristics of incinerator ash whenever incinerators are used.

6. How many diapers does an average child use in a week?

The average child uses 60 diapers per week. Newborns use approximately 80 diapers per week. By the time one baby is toilet trained, he or she has used approximately 8,000 to 10,000 diapers.

7. Which diapering alternative is the least expensive—cloth or disposables?

The answer to this question depends on your method. Clearly, the home washing of cloth diapers is the least expensive diapering alternative. In cost per diaper, cloth diaper service is usually less expensive than disposables. However, some parents choose to double, or even triple diaper their babies to get the needed absorbency which may increase the cost of cloth diapers.

8. Aren't cloth diapers messy, unsanitary and inconvenient?

No. Modern diaper services are more advanced and much more convenient than 20 years ago. You can drop a cloth diaper into a deodorized hamper, instead of dropping a disposable diaper in the garbage can. The diaper service picks up the contents of the hamper and leaves you with a new supply of cloth diapers.

In addition, various types of diaper covers with velcro fasteners can be used with cotton diapers to eliminate the need for pins.

9. Are cloth diapers or disposable diapers better at preventing diaper rash?

Parents may tend to leave a superabsorbent diaper on a baby for longer periods of time, which may increase a baby's skin temperature and increase the risk of skin infection.

Some experts maintain that clean, absorbent cotton is more comfortable for babies because it allows air to circulate inside a diaper. Since cotton diapers are changed more often than disposable diapers, this may help prevent diaper rash. On the other hand, the disposable diaper industry claims that numerous scientific publications have shown that disposable diapers are better than cloth diapers in preventing diaper rash.

10. Are cloth diapers better for the State's solid waste problem than disposable diapers?

Cloth diapers are reusable. Disposable diapers are used only once, discarded, and become part of our solid waste problem. Cloth diapers that are reused are essentially "recycled" by being used 50 to 200 times. By using cloth diapers, you can reduce solid wastes.

11. What about biodegradable disposable diapers? Are they better to use than regular disposables?

No. "Biodegradable" diapers use plastics that are mixed with corn starch which are supposed to break down when exposed to sunlight and oxygen. However, these elements are not present in landfills. In addition, the volume of waste when using biodegradable diapers remains the same as non-biodegradable disposables. Consumers are being told that biodegradable diapers are good for the environment, but they really don't help our solid waste problem.

REDUCE • REUSE • RECYCLE
BIODEGRADABLE DIAPERS:
Not the Solution

Biodegradable, disposable diapers have recently been advertised as promising environmental benefits. These claims are misleading. It has not been proven that these "biodegradable" plastics (which are mixed with corn starch) disintegrate when buried in a landfill where oxygen and sunlight, needed for degradation, are absent. If in fact the plastic in the diapers does break down, the term "biodegradability" is inappropriate: the plastic does not degrade, it breaks into smaller pieces. In either case, these diapers still contain untreated human waste which poses a direct threat to the environment.

BREAK THE CYCLE:
Reuse and Save

A single-use disposable diaper is used for only a few hours and then it's thrown away. One cloth diaper can be used an average of 90-150 times and then made into a rag.

You can help solve the solid waste problem by using cloth diapers. Your child and the environment will benefit, and you'll save money.

Sources


For more information, contact:
Recycling and Resource Conservation Section
Vermont Agency of Natural Resources
103 S. Main St.
Waterbury, VT 05676
or call: The Recycling Hotline:
1-800-932-7100 or 802-244-7831

This brochure is printed on recycled paper.
**Disposable Diapers and Solid Waste**

Each year U.S. citizens throw away 18 billion disposable diapers, creating 4 million tons of solid waste which costs us $300 million in disposal charges.

In Vermont, approximately 6,500 tons of disposable diapers are discarded in landfills and incinerators each year.

We are all aware of the rising cost of trash disposal and the shrinking amount of landfill space in our communities. Disposable diapers, used once and then thrown away, contribute to this problem. They make up approximately 2% of all mixed solid waste.

**We Can Each Do Our Part**

In 1987, the Vermont legislature passed the Vermont Solid Waste Law (Act 78) to address the growing environmental concerns associated with trash disposal. Act 78 requires that towns and solid waste districts give the highest priority to reduction, reuse and recycling for managing our solid waste.

If you are a parent with a child in diapers, using cloth diapers instead of single-use, disposable diapers is an effective way for you to reduce the volume of your trash.

---

**Save Money While You Save the Environment**

Reusable, cloth diapers offer a significant dollar savings over single-use, disposable diapers.

<table>
<thead>
<tr>
<th>CHOICES</th>
<th>COST (60 diapers a week)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WASHINGTON YOUR OWN</strong></td>
<td></td>
</tr>
<tr>
<td>$2.45 week</td>
<td>Includes laundering costs and initial cost of diapers.</td>
</tr>
<tr>
<td>Cost per diaper = 4 cents</td>
<td></td>
</tr>
<tr>
<td>Total diaper cost over diapering life of child = $318.00</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIAPER SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10.20 week</td>
</tr>
<tr>
<td>Cost per diaper = 17 cents</td>
</tr>
<tr>
<td>(Add cost of reusable diaper covers)</td>
</tr>
<tr>
<td>Total diaper cost over diapering life of child = $1,326.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISPOSABLE DIAPERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$13.20 week</td>
</tr>
<tr>
<td>Total diaper cost over diapering life of child = $1,716.00</td>
</tr>
</tbody>
</table>

---

**Cloth Diapers: Convenience and Comfort**

You can improve your baby's comfort and health by using cloth diapers. While disposable diapers are made of wood pulp and plastic, and in some cases, chemical gels, cloth diapers are made of 100% soft cotton. In addition, some studies show that babies develop fewer rashes when cloth diapers are used.

Cloth diapers are also becoming increasingly convenient: no more pins! Now you can buy diaper covers with velcro, which holds the diaper in place and prevents leaking.

---

**Cloth Diapers: A Vote for the Environment**

One of the most serious problems posed by disposable diapers is that they contain untreated human waste which, when placed in landfills, can seep into groundwater and contaminate our drinking water supplies. Human waste can contain infectious organisms, including the live polio virus from children's immunizations. However, human waste from cloth diapers is treated by sewage treatment facilities and septic systems which reduce disease carrying organisms.
THE STRAIGHT POOP ON DIAPERS

ADAM

Are disposables easier?
Not really! Cloth diapers now come with velcro closures and are prefolded for convenience. Cloth will have to be changed more often because they do get more saturated than paper, but that really shouldn’t be such a big inconvenience. Both have to be lugged. Disposables need to be carried from the supermarket and cloth to the door for the diaper service or the laundry room. It’s as easy to throw a diaper away in a diaper bucket as it is to toss one in the garbage. All in all, it’s a tie when it comes to convenience.

Which is cheaper?
Disposables cost an average of $800 per year. Cloth diapers cost close to half that. Even with a diaper service, you’ll still save 25-35%. Single use diapers cost about 22 cents per change. Cloth are 13 cents apiece when washed at home and about 15 cents per change when cleaned by a service. Considering the average baby goes through 10,000 - 12,000 diapers before they are toilet trained, this cost difference can add up to considerable savings. For the nearest diaper service, simply look in the yellow pages.

CONSUMER COSTS OVER THE DIAPERING LIFE OF A CHILD
Using cotton diapers can save parents as much as $546-$1417 for each child.

<table>
<thead>
<tr>
<th>($)</th>
<th>$1716</th>
<th>$1170</th>
<th>$299</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposables:</td>
<td>Cotton Diaper Delivery Service:</td>
<td>Cotton Diaper Home Wash:</td>
<td></td>
</tr>
<tr>
<td>60 diapers per week over 120 weeks</td>
<td>60 diapers per week over 120 weeks</td>
<td>7 dozen diapers</td>
<td></td>
</tr>
<tr>
<td>Average cost per diaper: $2.22</td>
<td>Average cost per week: $19.00</td>
<td>at 16.72 per dozen = $64.81</td>
<td></td>
</tr>
<tr>
<td>Total cost: $1716</td>
<td>Total cost: $1170</td>
<td>Home Laundering cost:</td>
<td></td>
</tr>
<tr>
<td>*Consumer Reports, August 1499</td>
<td>*National Association of Diaper Services</td>
<td>$0.03 per diaper use = $234</td>
<td></td>
</tr>
<tr>
<td>*Leibburger</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Are cotton diapers healthier for my baby?
Cotton is a natural product. This renewable resource can breathe and allow air to circulate to baby’s skin. Many experts feel that disposables are more likely to cause a rash because of their tight fit and synthetic components. How would you like sodium polyacrylate next to your skin?
18 BILLION SOILED DISPOSABLES ARE BURIED IN AMERICA'S LANDFILLS EACH YEAR!

Why shouldn't I use disposable diapers?
Disposable cause many environmental problems. Disposable diapers put an added strain on our overflowing landfills. Studies have found that they make up 2% of our solid waste. This is fairly high when you consider this is only one item. It costs us over $300 million a year for the convenience of throwing them away. This “hidden cost” is eventually paid by you anyway, in the form of higher disposal costs and property taxes. Their production uses up our limited natural resources. Over 1 billion trees are cut down annually to make diapers worldwide. 75,000 metric tons of plastic, which is made from oil and is a non-renewable resource, are used in the United States every year in the manufacturing process. The health and pollution hazards are just beginning to be studied and understood. 12,300 million tons of waste are dumped in our landfills every day! Untreated feces can carry over 100 viruses, including polio and hepatitis. This could leach into the groundwater and eventually end up in our drinking water, lakes, and rivers.

What about "biodegradable" disposable diapers?
The term "biodegradable" is largely a myth. It has been proven that the micro-organisms required to decompose the diapers are largely absent in a landfill. Even if they were present, they would simply rot the diapers into smaller pieces. This would in no way decrease the volume of waste being thrown away. Biodegradable diapers still use non-renewable resources, produce large amounts of toxic wastes in their manufacturing process, and encourage the continuation of the throwaway ethic.

Does that mean I should never use disposables?
Anyone with children knows that cloth diapers are not always practical. The overwhelming majority of day care centers only use disposable diapers, and disposables are also more practical for travelling. However, if you only use disposables now, try using cloth some of the time. You may soon find it's a habit worth getting into!

How long do diapers take to break down in the environment?

COTTON AIN'T ROTTEN!!

WHAT LEGACY DO YOU WANT TO LEAVE OUR CHILDREN?

For more information, please call or write to Cornell Cooperative Extension of Albany County, c/o David C. Diligent, PO Box 497, Martin Road, Voorheesville, NY 12186 (phone: 765-3500).
Sources: Adam creator Brian Bassett, Seventh Generation 800/456-1177, Diaper Hype by Francesca Lyman from Garbage Magazine, Jan/Feb 90 (800/274-9909), Art Ley (?), Environmental Action Foundation and Diapers in the Waste Stream by Carl Lehrburger.

This flyer is paid for by the City of Albany through funding provided by the New York State Department of Environmental Conservation.

- 14 -
Disposable diapers may be convenient to use, but few of us realize the magnitude of the waste problem they create. Here are some facts about disposable diapers:

- Americans throw away 18 billion dirty diapers a year, enough to stretch back and forth to the moon seven times!

- Disposable diapers can take 500 years to decompose in a landfill; cotton diapers, which can be reused 75-100 times, decompose in one to six months.

- Disposable diapers account for over 1 percent of the volume of waste in U.S. landfills.

- Each year 75,000 metric tons of plastic and 1,265,000 metric tons of wood pulp from trees are used to make disposable diapers in the U.S.

- Babies who wear cotton diapers get rashes five times less often than babies who wear disposables, according to a study by the National Association of Diaper Services.

- About 640 million diapers are used annually in the Bay Area.

- The proper way to dispose of a disposable diaper is to rinse the liner in the toilet prior to disposal. Improper disposal has led to polio and other intestinal viruses being found in landfills. As a result some areas are now considering a ban on disposable diapers.

- Disposable diapers are more expensive than diaper services. Comparative average weekly (90 diapers) costs:

<table>
<thead>
<tr>
<th></th>
<th>Newborns</th>
<th>Medium</th>
<th>Toddler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable diapers</td>
<td>$14.31</td>
<td>19.71</td>
<td>29.34</td>
</tr>
<tr>
<td>Diaper services</td>
<td>$ 9.00</td>
<td>9.80</td>
<td>11.50</td>
</tr>
</tbody>
</table>

Why not consider using a diaper service for your baby? Check your telephone directory (under “Diaper Service”) for the names of businesses serving San Francisco, or call 554-6193 for more information.
Are Tons of Dirty Disposable Diapers What You Want to Leave Your Children?

What costs 20¢ and can take more than a century to decompose?
A disposable diaper.
American babies go through 18 billion of these per year. That’s nearly 4 million tons of garbage and untreated sewage, most of which goes into already overburdened landfills. It’s been estimated that Americans now generate 80% more trash than we did in 1960, and some experts predict that half of our cities will exhaust their existing landfills by next year. Of course, diapers aren’t the only culprits in our dumps, but they are the only ones filled with excrement and covered in plastic.

Our solid waste problem isn’t going to disappear. It’s only going to get worse, but we, as individuals, can do something about it. We can recycle our newspapers, cans and bottles, and we can switch to cloth diapers.

Cloth diapers have some real advantages over paper—health, the environment, and cost. Some studies show that babies who wear cloth diapers get diaper rash five times less often than those who wear disposables. The solid waste in a cloth diaper is flushed into treatment plants, not buried in landfills. And using cloth diapers can save $5 or more per week as compared with using disposables.

But what about convenience and time? Surely your time is worth more than a mere $5 per week. Of course it is, and the answer to that is a diaper service.

A diaper service on average charges from about $9 per week to $11.45 per week, depending on how many diapers you order and the service involved. Disposable diapers, on the other hand, cost from more than $11 to slightly more than $13 per week to use. As you can see, a diaper service is very comparable in price to disposables and in most cases is even

(Continued on page 2)
THE DISPOSABLE DIAPER DILEMMA

Despite the growing evidence that disposable diapers are environmentally unsound and more costly to use than other diapering methods (services or home washing), reducing their widespread use by today’s “throw-away” society does not appear to have an easy solution.

In my recent survey of residents in the 119th Assembly District, 84 percent of those who responded believe that disposable diapers should be regulated and 68 percent believe that they create a health hazard.

According to a report called, “Diapers in the Waste Stream,” which was hailed by environmentalists, “no other consumer product, except newspapers and beverage and food containers, contribute so much to our solid waste.”

Disposable diapers are expensive for parents at a cost of between $500 and $1,500 per child more than cloth diapers. The expense is also widespread as the community must share in the cost of landfilling single-use diapers.

One of the leading manufacturers of disposable diapers has recently announced it will fund projects to recycle the plastic from disposable diapers. Some states, such as Nebraska, have banned the sale of non biodegradable diapers.

Other suggested solutions to the problem include a proposed tax on single-use diapers in an effort to encourage cotton diaper use. Also, governmental directives outlining the exclusive use of cotton diapers in government-operated hospitals and other institutions. Immediate education programs aimed at product manufacturers and consumers, have been recommended.

In order for all of us to be part of the solution instead of part of the problem, we must consider some of these ways to reduce the use of disposables. In the long run, we as consumers are absorbing the high collection, environmental and medical costs from the diapers in our dumps.

I will continue to press for a workable solution to this growing problem and I welcome any further suggestions you can add to those I’ve already received from my questionnaire.

1989 Questionnaire Results

- Disposable baby diapers now constitute 2% of the materials in our landfills (16 billion are used in the U.S. annually). Many of these diapers are disposed of without emptying the human waste.

A. Do you believe that disposable baby diapers should be regulated to reduce the amounts entering our landfills? ................................................................. 84% 9% 7%

B. Do you believe disposable diapers constitute a health hazard? ......................................................... 68% 16% 16%
Cloth diapers help hospital to soften the bottom line

By SUSAN BRINK

Emerson Hospital in Concord, citing issues of cost, environment and health, announced yesterday it will switch from disposable to cloth diapers in its nursery.

Hospital officials considered the life cycle of a disposable diaper — an hour or two on a baby’s bottom followed by years of decomposition in a landfill — and concluded the old ways were better, said pediatrician Dr. Nancy Hendrie.

“Our concern was we were sitting on a major environmental issue. We use 106,000 disposables a year,” said Hendrie.

Beverly Hospital was the first to make such a switch in April, and several Boston hospitals are considering switching.

Nationally, 16 billion disposables each year are used, accounting for about 85 percent of all diaper changes. They add up to 12,300 tons of waste feeding into local dumps each day.

The cost of disposing these diapers is $300 million per year — not to mention the 800 million trees felled for the cause.

But it is not simply the environmental impact that concerned pediatricians, said Hendrie. Disposable diapers have become so high-tech, so super-absorbent, that some parents go without changing their children for far too long, she said.

“It just can’t be good for your skin to be closed in for so long,” she said. “Now, with these huggy legs, these kids are essentially left in wet plastic bags. Doesn’t it make sense that a chemically impregnated paper cannot be good for your kid’s bottom?”

Emerson Hospital will use Dye-Dee Diaper Service, which supplies a cotton diaper that is inserted in a diaper wrap. No plastic pant is necessary, said Steve Kantauros, vice president of the service, and the wraps seals with Velcro, not pins.

Brigham and Women’s Hospital, birthplace to 10,130 babies last year — more than any hospital in New England — is committed to making the change to cloth within a year, said spokeswoman Louise Homer. The hospital used 501,960 disposable diapers last year, she said.

Beth Israel Hospital, with 5,995 births last year and a disposable diaper usage of nearly 300,000 a year, is responding to employee suggestions to switch to cloth diapers by investigating cost, impact on laundry use, and diaper service options.
Dr. Stanley Hellerstein's garbage doubled last spring after his infant granddaughter was brought to visit him, along with her disposable diapers.

"That experience made me think about all the disposables we use at the hospital," said Dr. Hellerstein, chief of pediatric nephrology at Children's Mercy Hospital. "We've gotten into the habit of disposing of everything without thinking about our resources and the waste it produces."

Dr. Hellerstein led a campaign at the hospital to reduce solid waste, and in September, cloth, rather than disposable diapers, came into use. Several hospitals on the West Coast have also begun to use cloth diapers and the trend is expected to increase, said Jeanne Wirka, a policy analyst with the Environmental Action Foundation in Washington, D.C.

Hoping to Be a Community Model

"This is a trend where institutions have relied on disposables to cut back," she said. "Institutions like hospital and day care centers can do a lot to make a difference."

"We decided to use the reusable diapers because we wanted to diminish the waste," Dr. Hallerstein said. "We also had hoped that we could be a model in the community." A local diaper service arrives each day with the diapers, most of which are about 5 inches by 12 inches, for the 2- to 3-pound babies of the intensive care nursery.

The hospital also uses nylon diaper wraps that attach with Velcro so pins and plastic pants are not necessary.

"There are some people who like the idea and some people who think we're a little bizarre," said Dr. Fred K. Hall, director of the intensive care nursery.

---

**Highland's nursery goes to cloth diapers**

**By MARY ELLIN ARCH**

Highland Hospital will become the first Rochester hospital to switch from disposable to cloth diapers in its newborn nursery, and several others may not be far behind.

The switch will take place Monday and save the hospital $3,000 to $4,000 a year, hospital spokesman Michael Sullivan said today.

The hospital spent $11,000 to $12,000 last year for diapers made of paper and plastic and has signed an $8,000 contract with Dy-Dee Cotton Diaper Service, a Syracuse company that is Rochester's sole supplier of cloth diapers.

But cost was a small part of the decision to convert to cloth. "As a community hospital, we're concerned about the environment and about space in landfills," Sullivan said. Highland threw away 130,000 diapers last year.

Health concerns were the biggest impetus behind the change, however, "We're quite concerned about some of the effects of the disposables on the baby's skin," said Kae Robertson, vice president for nursing. She noted that disposables trap moisture next to the baby's skin that can lead to diaper rash.

But others have argued that disposable diapers protect babies' skin by keeping them drier.

Highland is arranging to have its diapers imprinted with its logo, and will give one cloth diaper to each new mother upon discharge. "We certainly want to leave all the options open to them," Robertson said. "We want them to understand the ramifications of their choice (of diapers)."

She added, "Our nurses are really excited about this. It's really the wave of the future."

Bernie Skopinsky, Dy-Dee's regional general manager, said Highland will receive 1,400 diapers a week, making it the company's biggest Rochester client. The firm also services six area day-care centers and is negotiating with Rochester General and Genesee hospitals, which Skopinsky described as "very interested" in switching to cloth.
Procter & Gamble to Recycle Diapers

Procter & Gamble's disposable diapers may soon see new life as plastic benches, paper fibers and compost material. The company announced June 20 that it plans to launch two pilot projects to recycle and compost diapers.

P&G, which manufactures Luvs and Pampers, is also funding a study to dispute the claims of supposed "biodegradable" diaper manufacturers by tracking the progress of those diapers in the landfill.

To study diaper recycling feasibility, P&G will fund a pilot diaper collection program in Seattle, in conjunction with the Seattle Solid Waste Utility and Rabanco, a local company that handles one half of the city's recyclables. About 1,000 households are expected to participate.

The project, which will last at least three months, will not get underway immediately. Seattle Solid Waste Utility officials said. The utility is still deciding which homes will participate, and an ordinance may be required by the city.

P&G's purpose is to test the economics of diaper recycling, a spokesperson said. "We don't know what the total costs will be," explained Nancy Eddy, section head of P&G's paper products division. "At this point, I can't tell you whether it will be economically feasible."

Diapers will be collected at curbside in bags made from P&G's plastic waste from its diaper plants. They will be delivered to a diaper reclamation center. Using P&G's technology, the bags will be split and the diapers dropped into a repulper. Nearly 90% of the diaper is paper padding material. Less than 10% is a low density polyethylene plastic backing.

In the repulper, cold water and constant agitation will first separate the plastic from the paper portion of the diaper. Plastic will float to the top, paper material will be returned to pulp form, and fecal matter will be pumped out the bottom into a sewer system. "That way, the material can be sanitized and the two pieces of the diaper can be separated," Eddy said.

After the plastic is removed, the pulp will go through a screw press, which will remove the water and absorbent gel from those fibers. The pulp will then be baled and sold as a secondary fiber.

Recycle America, a subsidiary of Waste Management Inc., proposed charging $99.23 a ton to collect and recycle the material. That is about $25 a ton more than it costs the city to dispose of such waste in a landfill.

Haulers charge Seattle $51 a ton for curbside recycling.

The City Council's Utilities Committee will be asked next month to formally reject Recycle America's bid. After that, Seyrh says the city has several options.

One of them is to rebid the apartment recycling project, hoping the market will have changed by then and a hauler could make money charging only $75 a ton. Another option would be for the city to run the program itself...

..."The disposable diaper demonstration program is being sponsored by Procter & Gamble. The company chose Seattle because of the city's commitment to recycling. That commitment, however, apparently doesn't extend to dirty diapers. Maxwell Brown, who runs the program for the city, has so far signed up only 108 of the 1,000 families needed to meet a Friday deadline.

The Seattle Times, March 21, 1990
For Immediate Release, December 12, 1989

ENVIRONMENTALISTS ASK CONSUMERS TO BOYCOTT 'DEGRADABLE' PLASTICS

WASHINGTON – Environmental groups, saying "Don't get GLAD, get mad," Tuesday called for a nationwide boycott against so-called degradable plastic products like garbage bags and disposable diapers.

"These products create more problems for the environment than they purport to solve," the boycott organizers, the Environmental Defense Fund and the Environmental Action Foundation, said.

"Degradable plastics are a consumer rip-off," said Jeanne Wirka, a solid-waste reduction expert with EAF. "These plastics are being sold as a way to reduce waste, and that is a hoax," she said.

"Manufacturers are preying on the environmental concerns of American consumers," said Dr. Richard Denison, a senior scientist with EDF. "Degradable plastics may be good for profits, but they are bad for the environment," he said.

The groups are asking consumers not to buy degradable plastic products. On the target list are "degradable" Hefty and GLAD trash bags and Nappies and Tender Care disposable diapers. Among the large corporations jumping on the "degradable" plastics bandwagon are Mobil Chemical and Archer Daniels Midland.

Denison and Wirka are co-authors of a new report that details problems with "degradable" plastics. The report states that so-called degradables:

* Will not extend the life of landfills;
* Can release toxics into the environment;
* Are interfering with efforts to reduce and reuse plastics;
* Pose a serious threat to wildlife;
* Will do little or nothing to solve the litter problem; and
* Don't decrease – and may increase – use of plastics and the pollution created by the production of plastics.

"Because manufacturers are trying to use the public's growing environmental concerns to sell these bogus products, the public's best defense is to vote 'no' at the checkout counter," Wirka and Denison said. "So-called degradable plastics are a feel-good smokescreen that obscures the real goals of source reduction and recycling," they said.
Denison and Wirka's report points out that "degradable" plastics will not break down in landfills – a fact admitted even by industry drumbeaters for "degradable" plastics. Left unburied and exposed to the elements, which is the case with litter, such items could expose the public to chemical dangers not posed by regular plastics.

"Plastics are manufactured using toxic heavy metals like lead and cadmium," Denison said. "In ordinary plastic, these chemicals are trapped. In contrast, as degradable plastic begins to break down, those toxics will be released to the environment," he said.

Perhaps the greatest danger of so-called degradable plastics is that they are sidetracking the nation's use of source reduction and recycling to combat its mounting solid waste crisis. Some purportedly degradable plastics contain substances like cornstarch, which complicates the recycling process and harms the quality of products made from recycled plastic.

In a letter to The Wall Street Journal, Mobil Chemical President Philip Matos said "biodegradability is becoming a buzzword that makes some people feel good." Yet Mobil is marketing its Hefty brand of "degradable" trash bags, claiming right on the box, that "these bags will continue to break down into harmless particles even after they are buried in a landfill." The box also describes the bags as "a step in our [Mobil's] commitment to a better environment."

When asked about the disparity between the promise and performance of the Hefty bags, Mobil lobbyist Michael Levy said, "We're in the business to sell bags."

Consumers can receive a copy of the "Degradable" Plastics Report and boycott information by calling 1-900-535-8585. A $3 charge covers the cost of the call and postage and handling for the report.

###

For more information, contact:

Environmental Defense Fund
Richard Denison
Jim Middaugh
(202) 387-3500

Environmental Action
Jeanne Wirka
David Goeller
(202) 745-4870
BIODEGRADABLE DIAPERS:
A PSEUDO SOLUTION

Ann E. Beaudry

Paying on the growing public concern about the critical solid waste problems created by single-use “disposable” diapers, marketers have recently begun to promote single-use “biodegradable” diapers. Their ecomarketing strategies, including introduction of the product in natural food stores and environmental catalogs, are targeting environmentally conscious parents. Contrary to the ads’ assertions, however, these cornstarch, plastic, and paper concoctions do little, if anything, to solve the landfill crisis or to mitigate potential public health concerns caused by human waste entering landfills.

Let’s look at the facts not mentioned in the ads. The outer layer of “biodegradable” diapers is composed of a mixture of cornstarch-based resin and plastic. Theoretically, the cornstarch component is to be broken down by the bacteria and fungi in landfills, leaving a residue of polyethylene particles. But environmentalists say the promoters’ claims about the speed of this organic breakdown are highly debatable, due to the compaction of garbage, the lack of air and sunlight, and the variability in landfill temperatures and composition. Indeed, Dr. William Rathje, an anthropologist at the University of Arizona, has found 10-year-old newspapers still intact in Tucson landfills. In spite of the time-factor controversy, one thing is certain: even the eventual breakdown into small pieces of plastic offers no solution to the landfill capacity crisis, because “the breakdown products of every throwaway diaper, disposable or biodegradable, take up just as much room in the landfill as the original.”

Far from being environmentally neutral, biodegradable plastics may pose a serious threat to the environment. In her recent book Wrapped in Plastics, Jeanne Wirka writes, “Little is known about what happens during and after the degradation process to chemical additives, toxic heavy metals and other plastics ingredients.” Other environmentalists, such as Dr. David Wiles, director of the National Research Council of Canada’s Division of Chemistry, suspect that plastic breakdown will worsen the “already serious problem of gas and leachate production, possibly adding [to the environment] toxic chemicals [that are] much more damaging...than the plastic wastes themselves.”

In addition to the environmental costs, the new “biodegradable” diapers continue the cycle of public costs associated with the pervasive use of throwaway items. The truth is that no single-use diaper offers any respite from the escalating disposal fees faced by most communities. Even if all 18 billion of the single-use diapers disposed of annually in the United States were biodegradable, the public would still be spending $300 million each year for their disposal.
Environmentalists are concerned that the current marketing hype about "biodegradable" single-use diapers will divert attention from the real problem by promoting what a New York Times headline calls "Diaper Disposal with a Conscience." Will it divert well-intentioned parents from a viable solution to the solid waste crisis? Will it impede the environmentally sound 3Rs—reduce/reuse/recycle—approach to waste management?

The stakes are high. Each family that chooses natural, recyclable cotton diapers for their child prevents 1 ton of waste from entering the solid waste stream each year? Hopefully, this reality is more compelling than the ads promoting the disposal of a "biodegradable" ton.

Notes
1. Carl Lehrburger, in conversation with Dr. William Rathje of the University of Arizona.
2. Colin Isaacs, Probe Post (Fall 1988): 42.
4. See Note 2.
7. See Note 5.

For More Information

Environmental Action
1525 New Hampshire Avenue, NW
Washington, DC 20036

National Association of Diaper Services
2017 Walnut Street
Philadelphia, PA 19103

Ann E. Beaudry (42) lives in Washington, DC, with her daughter Kate (3). Her firm, Beaudry Communications, specializes in public policy issues.
Environmental concern impacts diaper choices

By Tommye Morrison
STAFF WRITER

Parents' concerns about the environment may change the kind of diapers their offspring wear.

Since the mid-1970s, convenience has been a priority issue for new mothers, and they rallied behind the assortment of disposable diapers offered them. But overburdened landfills and health concerns are forcing new parents to take another look at Junior's bottom.

Marshall Morgan, vice president of the Greensboro-based Baby Diaper Service, claims his business is booming.

"We're up about 40 percent in the last year," Morgan said. "Most of our customers are starting diaper service because they are concerned about the landfill situation."

Information provided by the cloth diaper industry has increased the consumer's level of awareness, Morgan said. For instance, Americans throw out about 18 billion dirty diapers each year, and most of these are buried in landfills.

The cost factor is a major consideration for parents. Each baby goes through between 6,000 and 10,000 diapers during his early childhood.

Disposable diaper advocates say their diaper of choice is no more costly than the reusable cloth diapers, while cloth diaper supporters say disposables cost between $4 and $6 more each week.

However, it is the environmental issue that is causing the most uproar among cloth diaper users.

"This using-once-and-throwing-away is the type of mentality we don't want to pass along to our children," Morgan said. "People are thinking twice about what they are putting in the trash," he said. "If most parents think about it, they shouldn't put human excrement into the trash. (A study shows) 95 percent of parents don't rinse (disposable) diapers out before they put them in the trash."

Randy Brodd, father of 18-month-old Allison, said he wanted to switch from disposable diapers to cloth diapers because of his concern with the environment.

"When you consider the sheer volume of diapers that get thrown away, I was concerned about the landfill problem," Brodd said.

He admitted he had to push his wife, Betsy, into using cloth diapers since she was concerned about the convenience factor and had used disposables exclusively with their older daughter.

"She found it was no more work for her," Brodd said. "We still use disposables when we go out of town. I strongly recommend (the use of cloth diapers) to other people, too."

Lorri Wagoner said she decided to use cloth diapers on her infant because her husband, Lane, had read an article about cloth diapers being better for a baby. However, the day care center she uses doesn't permit the use of cloth diapers, so 5-month-old Brittany is clad in disposable diapers during the day, but cloth diapers at night and on weekends.

"You can tell she's more comfortable in the cloth diapers," Wagoner said.

A spokeswoman with Triad Child Development Center said her center does allow parents to bring cloth diapers, but only about five parents out of 34 who have children in diapers elect to use cloth nappies.

The same holds true at Wesleyan Education Center.

"The parents supply their own diapers," said Day Care Director Maxine Hinkle. "We don't mandate what kind of diapers are used. The health department does not want (cloth) diapers washed out, and sending dirty diapers home is not as desirable. Most of our parents use disposable diapers."

Mary Lockhart, who works with day care licensing in the Guilford County Health Department, said there are restrictions as to how cloth diapers must be handled in a center. "Sometimes centers do not choose to use cloth diapers, because they do become cumbersome" because of health department rules designed to reduce the chance of disease transmission, she said. "It's much easier for centers to use disposables."

(See ENVIRONMENTAL on 6B)
Johnny wears disposable diapers, and that's not an environmental disaster. By Johnny, I mean John Samuelson, who joined his sister Ruth (3) and brother Michael (3) eight weeks ago. I also mean most of the other 9 million American babies under 30 months who wear disposable diapers. I do not feel guilty that my wife and I use them, and the idea that we are destroying the planet for our children is mostly nonsense. Disposable diapers are an instructive metaphor for the exaggerations of modern environmentalism. We all should want to be good environmentalists, but just what that means in practice isn’t always easy to say. The tendency these days is to call many different problems "environmental," as if the label—all by itself—implies an impending catastrophe whose solution is a moral imperative. "Environmentalism" thus becomes a loose collection of diverse concerns, with few distinctions made about whether some problems are more serious than others.

To call disposable diapers an environmental problem is to slide into this ambiguous and random alarmism. Disposable diapers are about garbage; that’s ordinary garbage, not hazardous waste. Getting rid of our garbage is a problem and, in some places, a serious one. Mainly, it involves handling the trash at an acceptable cost. But this is not a crisis that threatens the earth’s future, and even if it were, disposable diapers wouldn’t matter much. The 15.8 billion used annually constitute less than 2 percent of all garbage.

These complexities are being lost in rising rhetoric. Disposable diapers have come to symbolize growing wastefulness, because most people still remember the era of reusable, cloth diapers. Although Procter & Gamble first test-marketed Pampers in 1961, the product didn’t go national until 1970. (P&G says that disposables now account for 90 percent of diapers, up from 65 percent in 1980 and 25 percent in 1970.) Vermont Gov. Madeleine Kunin has proposed banning disposables, though her legislature probably won’t go along. And Forbes magazine recently lambasted them on its cover: "Can We Have a Cleaner Environment and Pampers Too?"

In fact, the symbolism is misleading. Our garbage problem is not primarily the result of our becoming an increasingly throwaway society. The Environmental Protection Agency estimates that the average American generates (after recycling) 3.3 pounds of garbage a day, only slightly higher than in 1970. The truth is that almost everything you probably believe about garbage is wrong, as archeologist William Rathje, head of The Garbage Project at the University of Arizona, argues in December’s The Atlantic. You think plastics are the problem? Guess again. They account for about 8 percent of the garbage. Metals? They’re about 9 percent. By contrast, paper represents 37 percent and yard waste 20 percent of garbage. Nor is today’s problem especially bad historically. "Our society is filled with...reminders of waste," Rathje writes. "What we forget is everything that is no longer there to see...the hundreds of thousands of dead horses that once had to be disposed of by American cities every year."

The problem today stems from shifting societal standards. Landfills now absorb more than three quarters of all garbage, and in a country as vast as ours, there’s plenty of room for new ones. The trouble is that fewer communities want them, and tighter regulations are raising their costs. Between 1985 and 1988, average tipping fees—the cost of dumping a ton of garbage in a landfill—jumped from $12 to $27, reports the National Solid Wastes Management Association. Our task is to make landfills acceptable or find alternatives, from garbage prevention to recycling to incineration.

I have no quarrel with parents who prefer cloth diapers, as a rising minority apparently do. The National Association of Diaper Services reports its members’ business is up about 40 percent in the past year. "I’ve never seen such a dramatic turnaround," says Jack Mogavero, president of General Health Care Corporation, the largest diaper service. (Environmentalism isn’t the only reason. New diaper covers with Velcro closures make cloth diapers easier to use.) But parents are deluding themselves if they think using cloth diapers is somehow saving the environment.

**Messy choices:** Suppose everyone switched to cloth diapers tomorrow. All those diapers (43 million a day, at current rates) have to be washed in hot water, which requires energy and generates pollution. For families using diaper services, the diapers have to be picked up and delivered by trucks that burn fuel, create fumes and worsen traffic congestion. By contrast, most disposables are purchased in shopping trips that would be made anyway. The extra effects of higher energy consumption would be modest, but so is the impact of disposables on garbage.

The point is not to show that one diaper is environmentally superior to the other. It is simply to emphasize that comparisons are iffy. Each diaper does some damage, but how are we to judge relative dangers? Are air pollution and the threat to global warming more serious problems than garbage disposal? Environmental debates tend to slide by these messy choices.

My own hunch is that garbage is a lesser ill. To some extent, the problem—higher costs—is also the solution. As disposal costs rise, recycling becomes more attractive and economically viable. Carefully crafted, recycling laws aid the process by lowering collection costs. In 1988, about 31 percent of all paper was collected and reused. By 1995, the paper industry estimates, that could rise to 40 percent. There will be more efforts to cope with yard waste through mass composting rather than using landfills.

Personally, I’m doing my part within the bounds of common sense. Just last week I brought a coffee mug into the office. This will cut my use of polystyrene cups by somewhere between 300 to 600 a year. I want the best possible world for my new son, who has a beguiling smile and a calming stare. Relax, Dad, he says. Being a worrier, I can’t. I already have lots of concerns for his future. But the way we diaper is not among them.
March 26, 1990

Response by Jeff Tryens to Samuelson Article: "The Way We Diaper," (Newsweek, March 19).

Robert Samuelson's spirited defense of his personal diapering practices was long on rhetoric, but lacking in substance. Calling disposable diapers "an instructive metaphor in the exaggerations of modern environmentalism," he makes light of the public concern about the environmental impacts of disposable diapers because they are but a small component of household garbage which is "not a crisis that threatens the earth's future."

Mr. Samuelson attacks the "exaggerations of modern environmentalism" by attempting to tear down a series of widely held beliefs. Disputing the notion that we are increasingly a throwaway society, he cites EPA statistics which show that, after recycling, Americans generate 3.3 pounds of trash per day; an amount only "slightly higher" than Americans generated in 1970. In fact, EPA figures show that Americans generated three pounds of trash in 1970, after recycling. This may not seem like much, but that "slightly higher" third of a pound per day will yield enough additional garbage in 1990 to fill over one million garbage trucks!

Mr. Samuelson says public concern about plastics is misguided because plastics constitute only 8% of the waste stream. The truth is plastics are by far the fastest growing component of the waste stream and when measured by volume (after all, it's landfill volume which is vanishing), the figure is 18%, second only to paper.

"Nor is today's problem especially bad historically," says Samuelson. In 1970 we were generating 120 million tons of waste and had virtually unlimited landfill capacity. Today we generate well in excess of 160 million tons per year with over half of the nation's municipal solid waste landfills at or near capacity. By the end of next year, 40% of all the currently operating municipal landfills will be closed.

Yes, diapers may be but a small percent of all garbage, as Mr. Samuelson contends, but two percent of a huge amount is still pretty big. In fact, diapers are the third largest single item in today's garbage, and represent a significant portion of the 20 percent goal for waste reduction set by many states.
Mr. Samuelson's central conclusion, that using cotton diapers is no more beneficial to the environment than using disposables, is based on a superficial analysis of the facts. He theorizes that the pollution generated by heating wash water and the extra pollution caused by diaper service pick ups and deliveries outweigh the environmental damage caused by disposable diapers.

While a good life cycle analysis of cloth versus disposables has yet to be done, Mr. Samuelson ignores a whole array of environmental problems associated with disposables that go far beyond their simply taking up landfill space. These problems include destructive timbering practices in harvesting pulp wood, water use and water pollution in paper manufacture, hazardous waste by-products of plastic production, fecal material in landfills, and growing concerns about possible dioxin exposure to infants. Surely, these factors must also be considered.

Mr. Samuelson has a very simple solution - "our task is to make landfills acceptable or to find alternatives...." Easier said than done. Government and private industry are spending billions to locate and build new landfills and garbage burners, yet citizen opposition continues to mount - and with good reason. Besides the enormous cost of these new facilities, landfills will eventually leak and incinerators will merely reduce garbage or change its form. According to Greenpeace, an average 1600 ton-per-day incinerator emits 5000 pounds of lead per day, 2244 pounds of chromium, 361 pounds of cadmium and .06 pounds of dioxin. Disposing of incinerator ash, often a toxic material, is environmentally hazardous, as well.

The solid waste problem will be solved in a thousand different ways by states and localities and by educated consumers discovering those alternatives to waste creation. It will happen by requiring newspapers to contain recycled paper, like the measures currently under consideration in Maryland and the District of Columbia; by restricting wasteful or environmentally harmful packaging, by banning toxic materials, like batteries and used oil, from municipal garbage; by labelling products as environmentally beneficial or harmful; by composting leaves and other yard waste; and by encouraging consumers to choose reusable products whenever possible, including diapers.

Mr. Samuelson is correct when he says disposables diapers are "not a big environmental catastrophe." That's reserved for the Chernobyls of the world. But they do pose a problem and drastically reducing their use is one of many solutions needed to get our waste problem under control.

Unfortunately, Mr. Samuelson seems to have missed the forest for the trees. There is no magic bullet to solve the waste crisis. His approach is that any amount of trash can be discarded, if the price is right. But the public concern over diapers and other wasteful practices is an expression of a different set of values - one which incorporates intergenerational equity and environmental security as part of our economic equation.

No, diapering your son with Pampers won't "destroy the world" Mr. Samuelson, but the ton of smelly diapers you will generate over the next 36 months certainly won't do anything to help it.
The Disposable Diaper Dilemma

BY ANNE S. MAZAR

One of the most fulfilling and memorable times in many people's lives is the addition of a new baby to the family. But with this precious gift comes dirty diapers. As most parents will resoundingly agree, changing diapers is a smelly, messy and unrewarding task. Disposable diapers were developed in the early 1960s to make this job easier, and currently 90 percent of all diapers used in the United States are disposables. Unfortunately, tossing a dirty disposable in the garbage may seem to make it disappear, but disposables leave serious environmental problems, dollars wasted in clean-up, and potential health hazards. Fortunately the alternatives are not as bleak as many people think, especially since they help to make the world a cleaner and healthier place to live.

The Environmental Hazards of Disposables

First the bad news. Americans contribute much more than their share of the world's solid waste problem. The U.S. comprises less than six percent of the world's population, yet it contributes 33 percent of the world's trash! In addition to the volume of garbage produced, our landfills lack the ingredients needed for materials to decompose: oxygen, light and water flow.

According to Carl Lehrburger's 1987-88 study, "Diapers in the Waste Stream," 18 billion disposable diapers were discarded in 1988 and most of them ended up in landfills. By weight, this is 414 tons of dirty disposable diapers discarded every hour. No other single consumer product, except for newspapers and beverage and food containers, contributes more to the solid waste problem. Disposable diapers currently represent two percent of total landfill space, a percentage that is increasing due to the recycling of many other materials no longer making it to landfills.

The 1.3 million tons of wood pulp required to manufacture disposable diapers is a tragic waste of trees. And the recycling of this paper is not cost-effective or practical at this point because of the plastic and the human waste on the diapers, though about sixty percent of the diaper is made from wood pulp.

Besides the paper, the plastic outer cover on each disposable diaper can take up to 500 years to decompose in a landfill. The plastic is also made from a non-renewable petroleum, and the manufacturing process produces solid waste. This is a terrible legacy to leave our children who currently wear these diapers.

With public pressure mounting to improve the solid waste problem, Proctor and Gamble, the maker of Pampers and Luvs disposables, is responding with a project to find out if it is feasible to recycle them. A pilot project is being tried with 1,000 families living in Washington, Minnesota and Wisconsin. The families are saving their dirty disposables in plastic garbage bags and putting them out to the curb for pick-up each week. The diapers are then transported to a station where they are separated into different parts, sanitized and recycled into items such as cardboard boxes and flower pots.

The Health Risks of Disposables

There are also potential health risks to children who wear disposables. One concern is the bleached paper used. When bleach is combined with wood pulp an array of chemicals are produced, including dioxin, which the Environmental Protection Agency considers the most toxic of all the cancer-linked chemicals. Some studies have found trace levels of dioxin in disposable diapers. In Europe, almost all disposable diapers sold are virtually unbleached because of public concerns. The major U.S. diaper manufacturers supply a good portion of the unbleached disposables to the European market, but sell bleached versions of the same diapers in the U.S.

Another concern involves the chemicals, such as the polyacrylates, that make the disposable diapers super-absorbent. Little is known concerning the transfer of these chemicals to a baby's skin, especially when there is diaper rash present. Disposable diapers are not regulated by the Food and Drug Administration and there have been no long-term studies done on the migration of these chemicals to the sensitive reproductive organs of babies who wear these diapers 24 hours a day for two to three years.
Disposable diapers also pose a public health threat. The fecal matter can carry more than 100 different viruses, including polio and hepatitis from vaccine residues, threatening both sanitation workers and society at large. Fecal matter in the disposable diapers should be properly disposed of in a toilet first, but as many disposable users will admit, this is rarely done.

The Alternatives?
Then there are the so-called biodegradable diapers. The plastic on these has between six and 15 percent of a cornstarch derivative added, which—ideally—will be attacked by microorganisms in landfills to break the plastic apart. Strong controversy remains as to whether or not these plastics really degrade or whether they just break down into smaller pieces of pollution. Furthermore, biodegradables use the same amount of unrecyclable wood pulp and plastic as nondegradables, and neither will decompose in a sealed landfill. It’s fair to say that biodegradable manufacturers may be fooling environmentally-concerned parents into believing that they are helping the environment. Worse, they reinforce the use-and-throw-away mentality which is ultimately what we need to move away from.

The Environmentally-Sound Alternative
Now for the good news. At this point, cloth diapers are the best solution, with no landfill waste and no waste of timber resources. There is minimal plastic production (only for the reusable pants put around them), and minor sanitation and health risks. Cloth diapers can be used 100-200 times and then retired into lint-free rags. And, luckily, cloth diapers today don’t have to mean leaky plastic pants and sharp diaper pins—there are helpful new options including nylon covers, velcro fasteners, all-in-one diaper/cover combinations, and diapers that fit snugly around the legs to hinder leaking. Diaper services can make this choice even more attractive.

Cloth diapers not only lessen impact on the environment, they also save money. Assuming a child wears eight diapers per day for two and a half years, the savings would be $1249 per child, according to a 1989 report entitled “Diaper Wars,” that appeared in Environmental Action Magazine. This includes the cost of 84 diapers, electricity, detergent, water and depreciation on the washer and dryer. According to the same report, using a diaper service would save about $558 per child per year.

Furthermore, the hidden expense of what the U.S. spends to discard disposable diapers—about $300 million per year—could be eliminated by using cloth diapers. That’s eight cents for every disposable diaper. Disposables are expensive, both personally and environmentally.

One concern about diaper services is that the chemicals used to clean the diapers thoroughly—given the volume of diapers and the mixing of diapers from different households—may remain on them. Though, according to Dr. Joseph Sherrill, a laundry chemical consultant in Chicago, any chemical residues are only detected in parts per billion, a level which is harmless. Another concern is the rinse water effluent discharged from the diaper services. Bleaches used, however, effectively kill any live viruses present.

Decisions, Decisions
At present, cloth diapers are the most cost-effective and environmentally-sound alternative to disposables. However, there are some hurdles aside from laundering. Cloth diapers may not be accepted in day care situations. They can also be difficult when travelling. Additionally, the major disposable diaper companies are working fast on public relations campaigns to justify the use of disposable diapers to consumers, playing down their negative impacts and overstating the prospects of recycling them.

An option many conscientious consumers choose is to use cloth diapers at home, and biodegradables when travelling or for supplying to day care staff. In doing so, concerned individuals can launch their own personal campaigns to promote the benefits of cloth. By setting examples, encouraging day care centers to subscribe to diaper services, and sharing information on the downside of disposables, we can make a significant personal impact on the legacy we leave our children.

Helpful Resources:
- Nylon diaper covers:
  Biobottoms, P.O. Box 6009, Petaluma, CA 94953
  After the Stork, 3902 Monte Vista, N.E., Albuquerque, NM 87106
  Natural Baby Company, 358-12 Gemini, Somerville, NJ 08876
  R. Duck Company, 650 Ward Drive, Santa Barbara, CA 93111
- Cotton diapers with Velcro fastening:
  Lovely Essentials Catalog, St. Francis, KY 40062
- All-in-one diapers with nylon covers:
  Bumpkins International, 291 North 7th, East, Payson, UT 84651
- To find a diaper service in your area, contact: National Diaper Service Association/(800)462-6237

ANNE S. MAZAR is a full-time mother of one and has a second child on the way. She is involved in writing, organic gardening, jogging and volunteering.
August 6, 1990

Dear Colleague:

Recently, you may have received a letter (enclosed) from the American Paper Institute about a study -- "Disposable Versus Reusable Diapers: Health, Environmental and Economic Comparisons" -- by the consulting firm Arthur D. Little, Inc., purporting to show that disposable diapers are as environmentally attractive as reusable, cloth diapers. Not surprisingly, this study which was financed by Procter & Gamble has caused concern among legislators, particularly among those in the 20 states that have considered legislation to reduce waste by discouraging disposables and encouraging cloth. As sponsors of such legislation, we find the information presented in the letter misleading.

The prevention of solid waste is the principal reason to use cloth diapers instead of disposables. Currently 18 billion disposables are sold every year in this country. This is fully two percent of all solid waste generated and a significant contributor to our solid waste crisis (laid end-to-end they would stretch to the moon and back 7-1/2 times). On the other hand, cloth diapers generate 90 times less solid waste than disposables. As discussed in the attached report by the Center for Policy Alternatives, the ADL study is heavily biased against cloth and, in some cases, factually incorrect.

The disposable diaper industry realizes it is in danger of losing market share for this very profitable single-use product. Faced with overwhelmingly negative public opinion polls, they have launched a pro-disposable campaign among state lawmakers and commissioned the ADL study expressly to discredit cloth diapers.

As legislators we must weigh the many aspects of any issue before making a decision. We are particularly troubled that at the very time industry is asking legislators across the country to trust a new commitment to environmental protection, the American Paper Institute is attempting to "muddy the waters" on such a symbolically important issue as choosing cloth or disposable diapers.

We ask you to join us in promoting waste reduction and the use of cloth diapers by supporting appropriate proposals in your state legislatures.

Sincerely,

Joe Strohl  Lucy Killea  Ralph Rosenberg  Ralph Rosenberg Wisconsin  California  Iowa

Mary Mushinsky  Nettie Mayersohn  Mary Cathcart
Connecticut  New York  Maine
Dear Legislator:

As cities across our nation strive to find new ways of disposing of municipal solid waste, the contribution of single-use diapers to the waste stream, and their consumer value, have often been topics of discussion. Unfortunately, many comments on this issue have been based on inaccurate or misleading information.

The members of the American Paper Institute (API) hope that the attached brochure will provide helpful background for any discussion of diapers. Should you desire additional information, API is available as a resource.

Most environmental issues can be complex and, perhaps, diapers are no different. You may find it interesting that:

1) a recent report from the A.D. Little research firm concludes that neither cloth nor single-use diapers are clearly superior in all resource and environmental impact areas;

2) single-use diapers offer "distinguishable" health and economic advantages over their reusable counterparts;

3) single-use diapers offer better protection against diaper rash and decrease the potential spread of infection in the day care setting.

When all factors are considered, it's apparent why nearly 90 percent of parents, 95 percent of hospitals, and a majority of nursing homes and day care centers choose single-use diapers.

Our industry is committing major resources to advance new initiatives that will address the broader issue of waste management, not just the 1-2 percent that diapers contribute to the average landfill. We agree with the EPA and leading environmental groups that claims of landfill biodegradability are a disservice to consumers and distract from real solutions, such as recycling and municipal composting.

Please call on us if we can be of assistance in your state.

Sincerely,

[Signature]

Red Cavaney
Review of Arthur D. Little, Inc.’s "Disposable Versus Reusable Diapers"

by Jeffrey Tryens
Associate Director
August 6, 1990

Disposable diaper manufacturers, troubled by the positive image cloth diapers have developed and the plethora of diaper bills considered in state legislatures (see page 1) are defending their market with a public relations and political campaign. The counterattack features a letter to legislators from the American Paper Institute and a study by Arthur D. Little, Inc. for Procter & Gamble.

In this preliminary response to the ADL study we discuss the various aspects of the comparative life-cycle costs of cloth vs. disposable diapers. However, it must not be overlooked that by far the major environmental problem produced by disposables is solid waste—single-use, disposable diapers generate 90 times the solid waste that reusable (i.e. cloth) diapers do.

Data Selection

ADL often does not use independent data, but relies on information gathered by its client (Procter and Gamble) and others with financial or other interest in promoting disposables. In addition, the data is selected to reflect unfavorably on cloth and positively on disposables. Specifically, ADL overestimates the number of cotton diapers per change, the number of cotton diapers used per week and the percent of at-home vs. diaper service use. This leads to overestimations in energy costs, water usage, atmospheric emissions and water pollution from cotton diapers. In addition, ADL miscalculates the expenses of the laundering equipment in developing the life-cycle cost of cotton diapers. It allocates all capital and maintenance costs to cotton diapers, apparently ignoring the fact the home equipment is mostly used for general laundry, not diaper cleaning.
The following factors are important in calculating the costs of cloth versus disposable diapers.

Diapers per Change

- The ADL study relies heavily on an overstatement of how many cotton diapers are used per average diaper change. In the 1990 study the estimate is 1.9 cotton diapers per change; in a 1977 study, also by ADL for the American Paper Institute ("Comparative Analysis of Selected Characteristics of Disposables and Reusable Diapers"), a figure of 1.4 cotton diapers per change was used. Also, while double diapering at night is a relatively common practice among cotton diaper users, the 1.9 figure appears large even for estimates based on common sense.

Average Number of Cotton Diapers Used Per Week

- A bias is encountered in calculating the number of diapers used by clients of professional diaper services. The ADL study uses an estimate of 85 diapers per week. However, a survey of its members by the National Association of Diaper Services, yields a weekly average is 70.

Percent of Cotton-At-Home Vs. Diaper Service

- ADL ignores the recent significant growth of diaper services resulting from a growing consumer shift to reusable cotton diapers. Their study is based on 10% diaper service, 90% at home use for cotton diapers. According to recent market research studies conducted by Dundee Mills, Inc., a U.S. diaper manufacturer, it was determined that approximately 25% of cloth diaper changes were made with cloth diapers from a diaper service. Because of the relative energy and water savings possible with professional equipment, this understatement has a significant impact on the conclusions.

- Because diaper service use is growing at a faster rate than at home use, it can be expected that these percentages will increase in favor of diaper service use.

Cost

- There is a peculiar misstatement of costs for disposable diapers in the ADL report. The stated costs per disposable diaper is $.23 each and 44.8 diaper changes per week are assumed. This works out to an average weekly cost of $10.30 for the requisite number of disposable diapers, rather than $9.45 stated in the cost summary table at the beginning of the report.
Waste collection and disposable costs, which are rising all across the country, are underestimated in the ADL study. The numbers in the ADL study should be upgraded by a factor of 10.24 percent to account for annual escalation.

Water/Energy

For some parts of the country which are water-scarce or in a drought such as California, water conservation is critical. While the ADL study makes a major point that cloth diapers use six times as much water as disposables, there are apparent biases and inconsistencies in the water calculations. For instance, the ADL calculation uses a figure of one quart of water to presoak every cloth diaper. While this and other water-use figures vary greatly from household to household, a more reasonable figure is half of this, or a pint. However, a more glaring inconsistency in ADL’s water use calculation is the omission of water use for rinsing and flushing of fecal material from disposables, as recommended by manufacturers, while rinse and flush water consumption is included for cloth diapers. Since rinsing and flushing constitute nearly half of cloth diaper water consumption, upon recalculation, the cloth-to-disposable water consumption ratio drops from 6:1 down to 2:1.

In addition to primary water usage, the ADL study seems to assume no reuse of waste water. If there is significant recovery and reuse, the impact of higher water usage connected to cloth is minimized. Moreover, disposables are largely paper, a water-intensive and polluting product whose impacts are magnified if the paper mill is in a water deficient areas.

For manufacturing of disposables, the ADL energy calculations include only the purchased energy from outside the paper plant, leaving out the energy recovered from wood waste. Nor is any transportation energy included. In addition, cloth is favored in states with levels of renewables in their energy mix, such as California with its significant use of solar hot water.

As the table below shows, when these factors are recalculated, cloth diapers are cheaper than disposables, except the $6/hour domestic labor option:
Cost Summary: Arthur D. Little vs. Lehrburger*

<table>
<thead>
<tr>
<th>Disposables</th>
<th>Domestic Labor @3.35/hr</th>
<th>Domestic Labor @$6/hr</th>
<th>Domestic Labor no value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADL (note a)</td>
<td>$10.31</td>
<td>$12.75</td>
<td>$16.93</td>
</tr>
<tr>
<td>Reconstructed Costs (note b)</td>
<td>$11.25</td>
<td>$8.75</td>
<td>$11.82</td>
</tr>
</tbody>
</table>

Note a: Table 1-2, Arthur D. Little: Diapering Life Cycle Costs Analysis--Average Cost Per Child Per Week

Note b: Reconstructed A.D. Little Costs: By Carl Lehrburger and Economic Data Resources, Boulder Colorado.

*Per Carl Lehrburger author of "Diapers in the Waste Stream"

Table includes the following adjustments:
1. 1.9 diapers/change replaced with 1.4 diapers/change.
2. $9.45/week for the purchase of disposables to $10.30.
3. Waste collection and disposable costs upgraded by 10.25 percent.

Conclusion

Because of the continuing disagreement on various aspects of the comparative life-cycle costs of cloth vs. disposable diapers, further analysis is needed on all these questions. However, this must not detract from focusing on the principal environmental problem with disposables--the very large amount of solid waste they generate.

* * * * *

The Center for Policy Alternatives is a nonprofit center specializing in developing and disseminating innovative policy ideas for state and local government.
Recent Publications

Energywise Options for State and Local Governments
A Policy Compendium

by Michael Totten
Washington, D.C., September, 1990
$15, including postage; 96 pages

The Harvest
State Strategies for Sustainable Agriculture

by Anne Hoskins & Jeffrey Tryens
Washington, D.C., August, 1990
$15, including postage; 51 pages