

## **The Diaper Dilemma: The Environmental Cost of Diapers**

*Weighing the environmental costs of disposables versus cloth diapers.*

by Susan Crawford Beil

**So, cloth diapers are less expensive than disposables: but what about the *environmental* price of cloth versus disposable?**

There are two things to consider in discussing the impact of diapers on the environment: *manufacturing* them and *disposing/washing* them. Cloth and disposables each have an impact on our planet in the ways they are manufactured and the ways by which they are washed or disposed. But which one has the greater, more deleterious impact?

### **Part 1: Manufacturing Diapers**

#### **Making Cloth Diapers**

A baby needs a total of 3-6 dozen cloth diapers over the course of a 2 1/2 year diapering period. It takes approximately less than 30 lbs of cotton to manufacture a baby's cloth diapers – diapers which can often be used for more than one child.

While standard practices of growing and harvesting cotton can involve a large number of pesticides and chemicals that are harmful to the environment, organic, or “green” cotton is becoming more and more available. Bleaching cotton for diapers is also taxing on the environment, although unbleached diapers are widely available, often at the same price as the bleached variety. So, there are environmentally friendly ways of manufacturing cotton diapers. Even if you considered the production of non-organic, non-“green” cloth diapers a compromise to the environment, remember that one child only needs a few dozen of them, and these diapers can be used for more than one child.

Wraps and covers used with cloth diapers are manufactured from a variety of materials, both natural and man-made. Some covers are made from wool, some from cotton. Most are made from synthetic fibers, such as nylon, vinyl, fleece, polyester and polyurethane. Fleece is made from recycled soda bottles, which is an environmentally wise option. But some of the other synthetics are made using processes that produce chemical waste, some of which may be harmful to the environment. A baby will probably need about 25-30 wraps and covers over the course of their diapering period, many of which can be used on subsequent children. Again, there is a cost to the environment in producing these diaper covers, but one child needs only a few.

#### **Making Disposable Diapers**

One baby will need over 6,000 disposable diapers for a 2 1/2 year diapering period.

Disposable diapers are made of a waterproof polyethylene outer layer, with an inner layer of wood pulp and synthetic polyacrylate (a super-absorbent crystal), along with a water-repellant liner. Many brands also use fragrances and perfumes in their diapers.

To acquire the wood pulp for disposable diapers, one billion trees world-wide are cut down per year. Some people can stop there and decide the cost of disposables on the environment is too much. But what is done to that wood is even more detrimental to us and our world. Disposables are so beautifully white because the wood pulp is bleached with chlorine gas, producing toxic chemicals known as

organochlorines. The most notorious of organochlorines is dioxin, which is one of the most toxic substances ever made by humans. Dioxin is associated with birth defects, miscarriages, cancer, genetic damage – remember Agent Orange from the Vietnam War? One of the primary components of Agent Orange was dioxin. Organochlorines are found in large amounts in the waste water released from manufacturing plants into the environment. Employees in factories manufacturing super-absorbent diapers have reported fatigue, female-organ problems, slow-healing wounds and weight loss. There is even a trace amount of organochlorines in each disposable diaper. Many countries have banned the process of chlorine bleaching from the manufacture of disposable diapers, in favor of safer bleaching processes, such as hydrogen-peroxide bleaching.

## Part 2: Disposing of Diapers

### Cloth Diapers

Cloth diapers are re-used rather than disposed of during their use as a child's diaper (and they continue to have uses beyond diapering!). Therefore, in calculating the environmental impact of NOT disposing of cloth diapers, we must examine the 'cost' of washing them. In the re-use of cloth diapers, a good amount of water and energy are consumed. In the above calculations for the financial cost of diapers, we estimated a family would use about 20,000 gallons of water to launder diapers over the course of a 2 1/2 year period (10,000 for front-loading washers).

Ask nearly any disposable diaper advocate the environmental question and they will most likely say that while *they* are loading up the landfills in our world, *cloth diaper users* are wasting the planet's water. Certainly 20,000 gallons of water seems like a lot to wash some diapers. But let's put that into perspective.

If we spent 640 gallons on our diapers per month, that's .86 units of water (at 748 gallons/unit). In my household of 2 adults and 2 children, we use anywhere from 10-25 units a month, depending on the time of year. If we averaged 15 units of water a month, our .86 units of water would constitute about 6% of our typical monthly water usage. In the summer, we use more water to keep our lawn green than we do to wash our diapers.

That's just the numbers. I think it's interesting that disposable diaper lovers (including the companies that make them) can make quite a fuss about the water used to wash cloth diapers. Nobody seems to get up in arms about the amount of water used to wash and sanitize bottles if parents feed their babies formula – or pumped breastmilk for that matter. In the event that a baby's parents find the time for a 5 minute shower each day, they will each use over 27,000 gallons of water to keep themselves clean for that 2 1/2 year period of diapering their baby – that's almost 60,000 gallons for two adults. But 20,000 gallons to wash their baby's diapers is supposed to be an environmental problem?

If disposable diaper users *really* think it's a better choice to pollute landfills with long-lasting, bacteria-laden trash, rather than use water to wash and flush our children's waste, then shouldn't all of us adults quit taking showers, wear disposable diapers – and probably disposable clothing altogether – and quit flushing our waste down the toilet? That hardly makes sense. We have wise, environmentally safe and inexpensive ways to treat our sewage water (remember, it only costs about \$17.00 for the TOTAL water of laundering one child's diapers for 2 1/2 years!). Further, water is a naturally renewing resource – remember the "water cycle" diagrams we all came to know and love in our 5th grade science courses?

### Do cloth diapers even get thrown away?

Most cloth diapers are recycled many times over before being thrown away. Parents re-use them on more than one child, and will either give them away to another family or will use them as rags and household cloths for many years. (Hey, gals, those diaper doublers and contoured diapers make for great menstrual pads!)

As many families in Third World countries are too poor to diaper their babies with *anything*, a good choice for families wishing to be rid of their cloth diapers is to donate them to a local mission group going to one of these countries, or to an organization like *Compassion International*.

In the event that a cloth diaper is thrown in the trash and then into a landfill, it will decompose within 6 months.

### **Disposable Diapers**

For every baby diapered with single-use diapers for a 2 1/2 year period, over 2 tons of waste is generated. Disposable diapers make up the 3rd largest single consumer item in our waste system – following newspapers and beverage containers. They account for nearly 4% of the total amount of solid waste, and 30% of the non-biodegradable waste. It takes 500 years for one disposable diaper to decompose. Yes, while a cloth diaper, if it is ever thrown away, will become one with the earth within 6 months, a disposable diaper will just sit there and do what it was made to do: absorb. Ever seen a disposable diaper get wet? A child's disposable diapers sit in a landfill and continue to swell and absorb water, water her family could have used to launder her cloth diapers, if they would have chosen them!

Manufacturers of disposable diapers have done some research into recycling and composting, but they have made little headway, as it would be extremely expensive and not widely available. A few cities around the nation have incinerators that burn their garbage and turn it into energy. But with this option one must consider the air pollution from burning all those chemicals in the diapers – not to mention the poop and pee! Landfills are better constructed now, in the U.S. and other developed countries anyway. They leak less than they used to and are generally capped to cover their garbage. But pathogens such as the polio virus (from recently vaccinated children) have been found in landfill sites. Although they may only live for a couple of weeks, these pathogens could potentially be spread elsewhere by birds, rodents and insects. Pollutants from landfills can also seep out into nearby groundwaters.

Not only does disposing of diapers take up a lot of space on our planet, but it also consumes a great deal of money and resources. Many disposable diapering families pay for an extra garbage can at their curbside each week. The cost of disposing diapers is so great that some cities in our country and around the world actually subsidize the cost of cloth diapers or diaper services to encourage people not to buy disposables! For several years, Seattle Solid Waste has issued a grant to a diaper service to subsidize diapers for low-income families. It has been less expensive for them to pay a diaper service than to collect the extra garbage! In a program ran in Germany and Austria, several cities subsidized the cost of cloth diapers for families. They calculated that each child diapered in disposables cost the city \$400 in municipal waste costs. So they offered coupons of \$50-\$100 per family toward the purchase of cloth diapers. Cloth diaper usage went from nearly zero to more than 40%!

Both cloth and disposable diapers have an impact on our environment in the ways they are made, disposed of, and/or laundered. But cloth diapers pose a significantly less threat to the environment in the way they are made, the resources consumed, and most importantly, the small number needed to diaper a baby. Manufacturing 2000+ disposable diapers per child consumes a tremendous number of

natural resources, and leaves behind a heavy trail of toxins and non-biodegradable waste.

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