

# GREEN LIVING

- By Cile Downs

## What's Biodegradable?

Biodegradable things are generally things that Nature made. Biodegradation is the process in which natural products break down or rot away, usually ending up as soil, just as weeds and food scraps do in your compost heap. Wood biodegrades; paper, being made of wood, biodegrades even though it has been contaminated with chemicals during the manufacturing process. Tiny organisms found in the soil, and in fact all over the place, go to work on biodegradable things and eat them up, literally. Bacteria, fungi, lichen, algae, insects, moss, worms – all help the process of decomposition.



Now we come to man-made things, such as plastics. Organisms that evolved to eat up wood, grass, fruit and leaves (and, believe it or not, even petroleum) are at a loss when confronted with plastics. Conventional plastics are made from fossil fuels: petroleum, natural gas or coal. Their molecules are of extreme length and durability. Therefore, the plastics we have today are unfortunately likely to be around thousands of years from now. They are not, in any true sense, biodegradable.

“Biodegradable” plastics can be made by adding starch to the mix. The starch decays and the plastic garbage bag, for instance, falls apart into small pieces. Regular plastic bags and sheets also fall apart eventually. In either case, it appears the best you can hope for is that the substance would simply fall apart into ever-smaller pieces of indestructible plastic.

What they might do to ecosystems when they become microscopic fragments is not known. Expect the worst. Sizable plastic objects, e.g., balloons, choke marine animals when mistaken for food (what is not degradable is not digestible either). Microscopic pieces of plastic could do similar harm to the tiny necessary organisms that take up the bulk of the soil of this earth. By the time we find out, will it be too late?

I am still removing pieces of black plastic mulch I foolishly put on my garden in the early 70's. Soon the pieces (now the size of a quarter) will have to be removed with tweezers. Later on, I won't be able to see them. But what is still there (I hope very little) will be an irrecoverable and indissoluble pollutant in the dirt of my garden.

This we do know: in all sizes and at all stages of breakdown, plastics give off toxic chemicals into the environment, especially contaminating waterways.

Some plastics have been developed totally without fossil fuels. They are made from “biopolymers” that are created from cornstarch or other starches, and plant-based cellulose. Another promising biopolymer is derived from the fermentation of different



types of bacteria. These can be called “green” plastics because the end products are entirely biodegradable. Unfortunately, these products are expensive. Possibly, as petroleum becomes scarcer and less affordable, the market might swing in favor of earth-friendly plastics.

This transition is critical because plastics are being used for everything you can imagine. That includes the bumpers of cars and even some parts in car motors. An excellent car mechanic once told me these parts are exposed to very high temperatures and may not hold up well.

There's no escaping it: at the moment the best we can do is to avoid using plastics whenever we can. Why not take a string or canvas bag with you to the market, or even bring back the plastic bag they gave you the last time? Some markets give you a few cents off if you bring your own – and others smile encouragingly.