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Tiptoe Through the Toxic Tulips

THERE IS A GREATER NEED for organic food now than ever before. Here is why. We seem to be losing the battle against pollution. True, there are now pollution-control devices on automobiles, and factories are filtering some wastes from their smokestacks, but in a total way we are confronting more and more poisons. The whole range of industry, commerce and conventional agriculture operates in a medium of synthetic chemicals and other polluting substances which continue to plant the seeds of disease in our bodies. We need desperately to counteract this slide into disastrous pollution by being sure that our food is as pure and wholesome as possible. That means organic food is becoming a far more important tool for health building with each passing year.

Some of the poisons that are causing these problems have been known for years, and have been investigated and to some extent controlled. Insecticides offer an example. The use of DDT has been cut back, and others are getting the same treatment. But we would be deluding ourselves to think even for a moment that the age of poisonous pesticides is drawing to a close. That isn't so. The spraying and dusting with a wide variety of materials goes on, and is even increasing in some areas.

Fertilizers are also capable of causing many health problems. Nitrates seeping into water and food from overuse of synthetic nitrogen fertilizers are an increasing hazard. Nitrates can convert into nitrosamines, which are now known to cause cancer. There is also a new theory that some of the nitrates from fertilizers are converted by soil bacteria into a catalyst that goes into the atmosphere and helps to destroy the protective ozone layer. That could allow more ultraviolet light to reach the earth, harming crops and wildlife and causing increases in skin cancer.

And there are plenty of other sources of pollutants. We now know that

polyvinyl chloride, a softener of plastics, causes liver cancer. Workers in factories making that chemical are being protected in various ways. But polyvinyl chloride is also used in the plastic that wraps the meat you buy in supermarkets, and can migrate into your steaks, chops and chicken. There is talk about eliminating it and going back to paper and cardboard meat wraps, but little action.

Most frightening of all is the recent surge of discoveries of new hazards. Substances that have been widely used for years and thought to be completely safe are now seen as potent pollutants, with an extremely long life in the earth's life zones. PCBs are an example. Their complete name is polychlorinated biphenols. They are used to provide extreme stability to certain petroleum compounds, such as the fluids that insulate transformers. Several facts about PCBs have been learned in recent years. First, they are extremely toxic. Second, they have escaped into our waterways and are now almost everywhere. Third, they last just about forever. Many fish now caught in the Great Lakes and other waters should not be eaten because of PCB contamination. Even if PCBs were eliminated from all industrial uses, they would be around causing problems for decades—maybe even centuries.

As these new hazards are being discovered, we are coming face to face with the reality of their effect. The cancer mortality rate is going up dramatically. For years, the number of cancer deaths rose at the rate of about 1 percent a year. In the first 7 months of 1975, though, cancer mortality leaped over 5 percent. There has never before been a jump like that, and the experts are worried. They don't know exactly what is causing the problem. The most popular theory is that the long-term harmful effect of the cigarette habit is now catching up with smokers – with a vengeance.

I have another theory, though, and I'm convinced that there is a lot of truth to it. We are now seeing the effect of the whole mixture of harmful chemicals in the environment, acting together. There is a name for that—potentiation. Stated simply, potentiation means poisons are more harmful in mixtures than if encountered one at a time. There is even the possibility that two different chemicals may not be harmful at all if you are exposed to them separately. But when mixed together in your air, water or food they could, over a long time, have a cancer-causing effect. Scientists know that some harmful substances potentiate and become more toxic, but they have barely begun to look into the problem. The amount of testing that would have to be done to prove how much harm is being caused would be enormous.

Yet now we are aware of the harm, and should take action to protect ourselves. The recent rise in the general cancer mortality rate is only one index of trouble. Potentiation is probably helping to cause the cancer incidence rate in New Orleans to be exceptionally high. The Mississippi River is literally a soup "flavored" with hundreds of chemicals, many known to be cancer-causing. Water treatment and filtration can't remove them all. While no one knows exactly what is causing the higher cancer rate in New Orleans, it is a good assumption that the mixture of chemicals in the river is at fault. People in other cities that use river water for drinking have the same problem.

Thresholds of safety do exist for individual substances, but in many cases we are approaching too close to the upper limit of safety for comfort. Lead offers an interesting example, with important implications for

Because pollution of the environment is now widespread and deep-seated, organic food is becoming more important for health maintenance each year.

gardeners and home canners. Last October, the Food and Drug Administration reported in its 1974 Heavy Metals in Food survey that the average adult diet contains about 60 percent of the amount of lead from all sources which the World Health Organization and the Food and Agriculture Organization say is safe. That doesn't leave much margin for expansion of lead pollution, especially when you read further in the report and see that FDA says that there are "many more high intakes" of lead than would be expected on the basis of a normal statistical pattern. That means a goodly number of people have very high lead intakes, taking them well over the threshold and into the danger area.

Severe cases of lead poisoning can cause death. But that's not what we're talking about. Children and adults exposed to slightly more than the safe level of lead can suffer a variety of effects, from mental retardation and nervousness to multiple sclerosis and perhaps cancer. These people go to doctors complaining of a variety of symptoms, and usually the doctors don't think of lead poisoning as the cause. Drugs are often prescribed for lead-caused problems—drugs which not only don't correct the problem but which create side effects of their own. Many hyperactive children are given tranquilizers so they can sit still in school, when actually they are suffering from lead poisoning.

Where does lead in food come from? The Food and Drug Administration says that canned tomatoes are an important source. Lead enters the food from the solder joint on tin cans. Tomatoes, being acid, dissolve some of the metal from that joint. Canned pork and beans also contain a

fair amount of lead, and so do canned peas and peaches.

Babies absorb lead from food more easily than do adults, so there has been a special campaign to reduce the lead content of canned fruit juices for babies. But FDA is concerned because babies are sometimes fed regular canned tomatoes and other foods normally packed for adults. And let's not forget that our aim should be to reduce lead intake to the bare minimum. That should mean using more of our own garden tomatoes, and being sure to can enough in glass jars to meet the whole year's need.

But there is more to the lead story. In its recent report, FDA said that "levels of lead in apple-containing baby food *in jars*" increased from 1973 to 1974. Glass packing eliminates lead from solder joints, so the contamination must be coming from another source. FDA suspects that source is lead arsenate insecticides.

Frankly, I had thought that lead-arsenic types of insecticides were prohibited years ago, but that isn't the case. They are still being used at the rate of millions of pounds a year—possibly as many as 7 million pounds. A large amount of these lead-containing insecticides is used on apple trees. FDA admits in its current report that it hasn't taken a close look at where lead occurs in apples in 40 years, but cites a recent English report which confirms that almost all of the metal is in the peels, stem and calyx—the little leafy part at the bottom. So unless apples are organic, peel them for added safety.

Cadmium is also a toxic heavy metal that can cause health problems. Recent medical reports indicate that cadmium in the diet can cause high blood pressure, emphysema, chronic lung disorders, kidney disorders and liver damage over a long period of time. According to FDA, the U.S. public is now getting 100 percent of the World Health Organization's provisional limit for cadium from general background sources. The cadmium is everywhere, and is difficult to escape. FDA said spinach is the food with the highest cadmium content—an indication that it's coming into food also by way of polluted air as well as soil. Refining of food increases its cadmium content. The white inner portion of wheat for example, contains more cadmium than the bran. So when wheat is refined into white flour, its cadmium content rises.

The cadmium problem would be more frightening than it is were it not for the fact that zinc is a natural antagonist of cadmium. If you increase your zinc intake, your body will not absorb as much cadmium. Natural zinc food supplements are inexpensive and widely used. Zinc supplementation is important because few foods are especially rich in zinc.

The Organic Solution

Perhaps by the time you read this, Congress will have enacted a Toxic Substances Control Act, which will at least begin to stem the flow of new harmful chemicals into the environment, and will provide the mechanism to test the safety of chemicals that have been in use for years. If the Act is not yet passed, you should pressure your representative and senator to vote for it.

However, much damage has already been done, and even a stringent new law will be only a partial solution. There is now little hope that anyone can avoid all contact with pollutants and live a totally natural life. Even if we don't use harmful chemicals ourselves, we are still going to get some of the toxic overspill of industry and conventional farming.

There is no reason to panic, at least not yet. We should instead intensify our efforts to garden and farm organically. Each piece of land which is preserved from chemical treatment is both the symbol and substance of the purity needed to reverse the trend toward environmental degradation. Organic material in the soil is a purifying agent. Many harmful chemicals break down rapidly in soil treated with liberal amounts of fresh or decaying organic matter. Humus itself is not only a filter, but it provides the medium for rapid growth of soil organisms which also have the ability to neutralize toxic substances.

Plan to store and preserve more food from your garden, too. Tomatoes canned in glass jars are free of lead problems, especially when you know they haven't been sprayed with lead arsenate. All your home-grown and home-preserved food is likely to be more free of toxic substances. Protect yourself and your family by eating more food that you produce yourself – organically.

There are several other positive steps that you can take. First, learn more about using better nutrition to protect yourself against toxic hazards. Eat fewer processed foods–those likely to contain additives or residues. Also look at the evidence now accumulating rapidly showing that certain vitamins and minerals have the ability to counter the effect of toxic substances. As I pointed out before, zinc helps to counteract cadmium absorption, and cadmium generally is now at 100 percent of the safe level.

Vitamins A, C and E are also known to offer certain protective effects. Experimental animals given vitamin A, for example, resist cancer. Numerous studies also indicate that vitamins C and E in amounts larger than normally available in food counter the effect of some harmful chemicals. Unfortunately, there is widespread deficiency in the average American diet of just the vitamins likely to offer the needed protection. Vitamins A and C in particular are lacking, and so is calcium. No wonder we are beginning to reap the harvest of the chemical whirlwind. I take 20,000 units of vitamin A a day, at least a gram of vitamin C, 600 units of E, plus bone meal for calcium and also three 10-milligram zinc tablets. I think of them largely as protection against environmental insults which are difficult to avoid, even though much of my diet is organic. Why not use protection which is logical and probably effective?

You might also consider having a sample of your hair tested by atomic absorption analysis for trace elements. That can show whether you are one of those unfortunate people with high lead intakes that the FDA is worried about, and can also reveal other exposures to toxic substances. Hair testing is growing in popularity because it's easy, relatively inexpensive, and does ferret out those people with above-normal exposure to heavy metals.

Some doctors offer a hair-testing service. So does the Soil and Health Foundation, Emmaus, Pa., a non-profit research foundation supported by contributions from readers of ORGANIC GARDENING AND FARMING and PREVENTION magazines. You can take the sample yourself, and the testing is done by the laboratories of Case-Western Reserve Medical School.

As I said at the beginning, the problems of pollution not only remain with us – its effects are growing. We need to try to reduce the sources of the harmful substances that are engulfing the environment, and we also must be doing the necessary things to protect ourselves.