

Spraying our way to oblivion

What happens if the ozone turns to nozone

By LORNE WASSER

Man-made products are beginning to upset the balance of nature, said Dr. Sherry Rowland, professor of chemistry at the University of California, in a lecture entitled the Aerosol Spray — Threat to Stratospheric Ozone last Friday.

The natural equilibrium of atmospheric ozone has been broken, so that the decomposition rate now exceeds the formation rate. This imbalance is created because of the catalytic breakdown of ozone by freon, a man-made product used in many spray cans.

Skin cancer will increase if we allow the deterioration of the ozone layer, the part of the atmosphere that filters out the ultra-violet radiation which causes cancer of the dermis, said Rowland.

Even though the ozone layer is so infinitely small (one-millionth part of one per cent) of the atmosphere, the reduction in its size will definitely lead to a detrimental increase in skin cancer in man. At the present

rate, there will be a rise of 80,000 incident cases by 1990:

"There are three main types of skin cancer, two of which are simply unpleasant one of which is fatal. But the chance of contracting the lethal form is highly unlikely and unusual," said Dr. W.J. Megaw, another researcher on the effects of the changing quality of the environment, during an interview on Monday.

When someone uses an aerosol spray can, an odourless, colourless gas called freon is released into the atmosphere. This freon rises to the ozone layer and decomposes when exposed to certain wavelengths of light.

When this freon is decomposed, it becomes dangerous to ozone.

Molecules of chlorine form from the freon's break up and these molecules breakdown the ozone layer.

In this way, decomposition occurs throughout the life of the freon gas, which may last anywhere from two to ten years.

Rowland said, as a crude estimate, that eventually each chlorine atom released by the dissipating freon gas will decompose some 100,000 ozone molecules, or one ozone molecule every minute for five years.

The ozone level has been decreasing over the past twenty year, ever since the initial usage and release of freon into the atmosphere. Rowland said there are approximately ten million tons of freon in the atmosphere; roughly, the same amount man has ever made and released.

It was suggested that freon may decrease the ozone layer by ten or twenty per cent. This is quite significant, pointed out Megaw, considering that production of the super sonic jet (SST) transports have been halted for fear of a one per cent decrease in the ozone layer.

Freon is used for its chemically

stable properties, here on the surface of the earth. It is non-toxic and non-flammable, and therefore it is readily used in many aerosol cans, refrigerators, and air conditioners.

"I would be most willing to have aerosol spray cans banned," said Megaw, "not just because they contain freon but because they are wasteful of both natural resources and the consumer's money."

Megaw explained that the average deodorant spray can contains 90 to 92 per cent freon, 7 per cent alcohol, and only about 0.6 to 1 per cent deodorant — what the consumer is supposedly paying for.

"There are many types of freon, some of which do not break apart to attack the ozone layer," Rowland pointed out.

However, these non-destructive freon types have not generally been adopted into the aerosol can industry

because of their greater expense.

"If freon continues to be released into the atmosphere it will lead to a decrease in the ozone layer and thus an increase in skin cancer," Megaw concluded. "But what other ill effects will it have on man and his environment? We just don't know yet."

Megaw is the director of the Centre for Research on Environmental Quality (CREQ), an organization which acts as a base to set up and encourage environmental quality research here at York.

Any students wishing up-to-date information about the changing environment, man's effect on it, and relevant legislation can visit CREQ in the Steacie Science building.

"It is because of the impetus it gives to environmental quality research that the centre is important," stressed Megaw.



Harbinger's column

Return to roughage fertilizes feces

Many medical and nutrition experts now rank lack of fibre in our diet, along with obesity and cholesterol, as our top nutritional problems.

Recent discoveries link its lack in our diet with many diseases of the intestinal tract.

In North America, cancer of the colon and rectum are the second highest cancer killers, second only to lung cancer. However, Africa, where the diet is high in roughage content, had the lowest incidence of colon cancer in the world.

Until just recently, doctors would recommend a low roughage bland diet for gastro-intestinal patients. Now many are using high roughage diets for these patients in the belief that low fibre content in their diet may have encouraged their condition.

Fibre has been called "the forgotten ingredient" in our diet. Fibre comes chiefly from plant sources - from leafy vegetables, seeds and grains. Leafy vegetables include spinach, cabbage, lettuce and celery. Beans and peas are good

sources.

In the wheat kernel, the bran contains the fibre. We remove it and mill the rest when we make white flour. The use of white bread rather than whole wheat bread has seriously cut our fibre intake.

Another way our diet has been deprived of fibre is the increased use of juices. Instead of eating an orange or an apple, we remove the juice and throw away the fibre in the pulp and skin.

Plant fibre is not broken down by the body's digestive juices. It stays in the digestive tract after everything else we've eaten has been broken down and absorbed. The fibre stretches the walls, helping to cause regular movements. It also acts as a sponge which makes for moistness as well as bulk in feces.

Roughage helps to stimulate the colon to keep the body's waste products moving. It is believed by some that when feces move through the body too slowly, cancer-producing elements of the waste are kept in prolonged contact with the intestinal wall and this may encourage the development of cancer cells.

The following steps are important in increasing the fibre content of one's diet:

First, eat fruit, rather than having fruit or vegetable juices.

Second, assure yourself an adequate intake of fibrous products such as lettuce, cabbage, beans, peas, nuts, brown rice and figs.

Third, use cereal products that still contain bran. Try to eat whole wheat bread rather than white bread. And use whole wheat cereals such as Muffets, Weetabix, or Shredded Wheat daily, if possible.

This will be the first of several articles by Harbinger on nutrition and diet. Watch this column for more information on healthful eating habits.

Player's filter cigarettes. A taste you can call your own.



Warning: Health and Welfare Canada advises that danger to health increases with amount smoked — avoid inhaling.