Hospital uses magnesium for heart attack victims

Heart attack victims at the Ottawa Civic Hospital will be treated with magnesum, a mineral which scientists now believe protects against heart disease and possibly even the mysterious crib death.

Dr. Brian Morton, a cardiac pathologist with the Civic, says patients suffering heart attacks will receive the mineral intravenously in hopes it will minimize damage to the heart muscle and possibly speed recovery.

He said up to 200 patients could be tested in a year-long research project, probably the first of its kind in Canada.

The experiment stems from growing evidence among scientists that an inadequate source of magnesium may contribute to heart disease – the leading cause of death in North America.

Magnesium is found in hard water. Whole grain and liver also provide good sources of the mineral although researchers think many diets may be deficient in essential minerals.

Scientists do think that hard water with its abundance of minerals is connected with a lower incidence of heart disease.

A report by the National Research Council on water hardness and human health research shows the heart disease rate in North America and Britain ranges from 15 to 76 percent higher in soft-water areas compared with hard-water areas.

Getting the picture straight

A Toronto inventor, who gave a world television audience its first clear, live pictures of men talking on the moon, has created another device that might help him to carve out a growing share of a specialized international electronic equipment market.

The device is called a time base corrector and it turns snowy, wobbly TV images instantly into pictures that are clear and steady.

John Lowry and a small group of helpers formed Digital Video Systems in 1976. His company's revenue of $2.8 million in 1978 leaped to $8 million in 1979 and is predicted to be $20 million this year. He has a staff of 90 which is still growing.

Lowry said his initial success followed the formation of his first company, Image Transform, in 1971. He developed electronic equipment for improving TV videotape pictures so much they could be transferred to film and look as good as conventional theatrical movies. This permitted movie makers to use TV cameras instead of film cameras, with a huge cost reduction.

In 1972, Lowry's equipment was used by the National Aeronautics and Space Administration in the United States to clear up fuzzy pictures coming back from the moon.

Lowry calls the model of his time base converter the DPS-1. It converts incoming TV signals to a digital form from the standard analog wave form. Digital transmission sends waves along a wire in a different shape from analog waves and can carry more detail and produce more clarity in picture and sound.

Profits from peat

Karl Burger and Bob Donovan believe they can dig a profitable business out of a 22.5-acre peat bog in Bancroft, Ontario, northwest of Ottawa.

They are planning to build a plant to make firelogs of compressed peat. Mr. Burger says the logs will be lighter to carry and will burn longer than the pressed-sawdust firelogs now being sold.

He already has built the prototype of a machine that can squeeze out the logs like one continuous sausage that then can be cut into log lengths or chunks.

He said sample pieces show that his four-inch-thick compressed peat logs, about 14 inches long, will burn from four-and-a-half to six hours.

Peat has long been used for fuel in Europe and Mr. Burger says even the Soviet Union is experimenting with it as a fuel for generating stations.

The key for using it as firelogs is compression, and the mechanics of that is a subject Mr. Burger knows well. The son of a German terrazzo-maker, he came to Canada in the 1950s and developed a process, which he patented in the United States, for compressing rock and marble dust.

He bought 35 acres of land in 1965, which he originally planned to subdivide into residential lots. But in 1977 while selling topsoil from the site, Mr. Burger discovered his scruffy land was a peat bog.

Mr. Burger estimates the 55,000 cubic yards of peat in the bog can be turned into more than seven million firelogs over four to eight years of production. He estimates that even selling the logs wholesale for 45 cents each, to a jobber or to a retail chain, should bring a $1.5-million profit.

Popular poplars

Canadian scientists who used to call the poplar a weed among trees now are experimenting with the common hardwood to make it grow even faster and on even poorer soil to produce a large-scale source of fuel, paper, chemicals and animal feed (and perhaps even protein for the human diet, as well).

Vigorous sprouting and efficient seed distribution make the poplars leap up in cut-over or burned-out areas, but they die quickly when other trees grow up and shade them. At best, the poplars (including aspens and cottonwoods) live a relatively short 100 to 150 years. Given these drawbacks, the poplars have only one big practical advantage: they can grow almost a metre a year even without scientific help.

Cloning

At the Ontario Forest Research Centre, operated by the provincial Natural Resources Ministry, north of Toronto, poplars do much better than that. By cloning (planting cuttings of carefully selected trees to provide hundreds of trees with identical genetic makeup), forest scientists have bred trees that grew 3.7 metres (12 feet) a season.

They were planted on plots as small as 0.3 metres by 0.9 metres (about one foot by three feet). Depending on the climate, fertilizer and soil, that kind of growth could provide up to 34,500 kilograms *per* hectare (16 tons *per* acre) of dried wood every year.

In such poplar farming, the fastest growing clones are raised from one to three years, densely planted on good soil close to a market such as a pulp mill, according to Harvey Anderson, a scientist at the centre.

Apart from the lumber, there is the protein in the leaves. Dr. Anderson, along with C.P. Chen and D.N. Roy of the University of Toronto, found that 55 to 70 per cent of crude protein could be extracted from green poplar leaves.