

## Animal fodder from wood waste

Forestry researchers in British Columbia are investigating the possible use of logging waste products to help alleviate the world food shortage.

Dr. R.W. Kennedy, director of the Western Forest Products Laboratory of the Canadian Forestry Service, said in a recent interview that researchers were checking a process which could turn foliage from logging, now wasted, into cattle fodder — or muka — which could release huge quantities of grain for human consumption.

“Obviously if any part of the food chain normally fed to cattle, pigs or poultry can be replaced with foliage,” said Kennedy, “land could be released to grow food for human beings.”

He said muka, which yields one-half the protein of hay, could be used as a supplement to other animal fodder.

There have been estimates that the world's reserve supply of food was only 35 days in 1976, he said, compared with an estimate of 89 days seven years ago. He said only a bad weather year could place the world in a deficit food position.

### Billion-dollar industry

Kennedy said the foliage program, including use of essential oil byproducts in pharmaceuticals and cosmetics, could eventually provide 50 million tons of animal feed supplement a year and represent a billion-dollar industry for Canada.

Almost all logs now are stripped in the woods with the needles, foliage and limbs left as waste or slash-burned. Unfortunately, there is not yet enough incentive for logging companies to transport the whole tree to the mill site, where the foliage could be converted for byproduct use.

### Advantageous position

Ultimately, Kennedy and his colleagues foresee a combination of dividends from not only the diversion of grains for human use, but increased yield from Canadian forests, a reduction of the forest fires from jettisoned-wood wastes and a reduction of pollution from slash-burning.

Kennedy said Canada was in a particularly advantageous position since it not only had a plentiful supply of forest foliage, but a growing need for animal fodder.

He said that in the Peace River area,

“where there can be a crop failure one year in four”, good use could be made of the plentiful aspen to produce fodder for Alberta's cattle industry.

### Two-pronged effort

Meanwhile, although the animal feed potential of wood waste seems to be a long-range project, the forestry laboratory research group is optimistic that a more immediate use can be made of foliage as a filler and extender for adhesives for plywoods, particleboards and veneers.

The increasing cost of oil may spur this development, since the foliage-based additive could be produced at one-third the cost of oil-based resins.

Although many types of tree are useful for foliage utilization, the emphasis so far has been on white spruce and lodgepole pine. These or similar species are common throughout Canada and have an advantage in economy of recovery.

The foliage program was initiated in 1974 by the late Dr. John Keays, who was inspired by the Soviet Union's pioneering work in this field.

The U.S.S.R., which started the first production in 1955, currently processes 100,000 tons of coniferous foliage a year and uses it as a supplementary, vitamin-rich additive in the feed of chickens, cattle and other livestock. It also extracts

oils for perfumes, flavouring agents and medicinal preparations.

(Excerpts from an article in *The Forest Scene*, Vol. 8, No. 3, September 1977.)

## Education statistics

Enrolment in universities and colleges will rise nearly 4 per cent this fall, while the decline in elementary-secondary schools will continue, according to estimates for the 1977-78 academic year, says Statistics Canada.

About 637,000 full-time post-secondary students will enroll — 390,000 in universities and 247,000 in colleges. Mainly because of the growing size of the 18-24 age group, post-secondary enrolment will rise for the next few years.

At the elementary-secondary level, 5,355,200 students were expected in September, 141,382 fewer than last year. Enrolment at this level is projected to decrease by about 120,000 in each of the two subsequent years because of the low birth rate of the last decade.

The size of the full-time teaching staff will reflect enrolment — 265,042 elementary-secondary teachers, a drop of 5,579; but 51,950 at the post-secondary level, 1,947 more than in 1976-77.



Ottawa was not alone in its celebration of Canada Day this summer. The Canadian Consulate in Sydney, Australia organized a two-week display of Canadian culture, wildlife and manufactured goods by arranging outdoor concerts, radio broadcasts and an exhibit of maps, slides and photos for Australians and expatriate Canadians.