

Nicotine streamlines pigs

No, the pigs at CDA's Nappan, N. S. research branch haven't taken to smoking, but they are getting a little nicotine in their feed. It's to make them leaner and to save on the cost of feed.

Dr. Huzh M. Cunningham of Nappan began seven years ago to study ways of making pigs leaner. Now he has found that nicotine, by stimulating the release of a hormone from the animal's adrenal glands, helps to decrease their fat and increase the growth of lean tissue.

The researcher gives the results of tests to show that 5 p.p.m. (parts per million) of nicotine sulfate mixed in feed for pigs led to the following increases:

- 2 to 3 per cent in feed efficiency.
- 5 to 17 per cent in the ratio of protein to fat in carcass.
- 10 to 20 per cent in number of Grade A carcasses.

Receiving the same feed but without nicotine.

Dr. Cunningham began his studies with the knowledge that the hormone, adrenalin, moves body fat into the blood stream to be used for energy.

Energy equals protein which in pigs, is the desirable lean flesh.

COREN OIL HELPED

But adrenalin injected into pigs was only active for a few minutes. By mixing it with corn oil and injecting the mixture under the skin of pigs he found he could prolong the effects of the hormone for several hours. Daily injections over a period of six to nine weeks not only greatly reduced the fat content of the body but, for the first time with any animal, encouraged the formation of protein.

Since farmers could not be expected to inject pigs every day, a search was made for a compound that could be added to the feed to bring about the release of the adrenalin within the body. Nicotine has been found to do this job.

Dr. Cunningham has completed four experiments with chickens and six with swine. Although the differences between the livestock tested and those used as controls in the tests were not always large, the chemical had a beneficial effect in all cases.

Forty pigs were individually fed at different levels of nicotine from weaning up to market weight. The group receiving 8 p.p.m. netted \$7.05 more per ton of feed than the controls. This resulted from a combination of 10 per cent increase in Grade A carcasses and a 5 per cent increase in feed ef-

iciency. In addition to the federal \$3 premium paid on each Grade A carcass, Nova Scotia receives an extra dollar from the provincial government.

MORE GRADE A'S

In another more recent experiment, 20 pigs were individually self-fed a control ration while their litter mates were self-fed the same ration containing 8 p.p.m. nicotine. Eighteen of the latter graded A compared with only 14 of the controls. When the premiums were added to a 2-per-cent sav-

ing in feed efficiency, the net profit and savings of the nicotine fed group amounted to \$5.71 per ton of feed. Since it costs only about 3 cents per ton of feed to add nicotine sulfate (which may be supplied by its source of "Blackleaf 40" per ton, the cost of the supplement scarcely has to be considered.

"So what can you lose?" is Dr. Cunningham's comment. The researcher insists to add however, that the use of nicotine as a feed additive must first be cleared with the Food and Drug Division of the Department of Health and Welfare. Nicotine is rapidly eliminated from the body and, since very

tiny amounts are used, there should be little difficulty in obtaining permission for its use in feeds.

Dr. Cunningham said he would like to see nicotine tested in other laboratories for a more comprehensive appraisal of its value.

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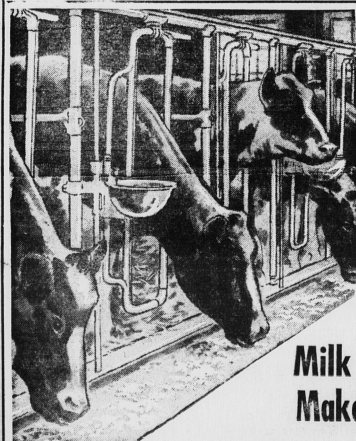
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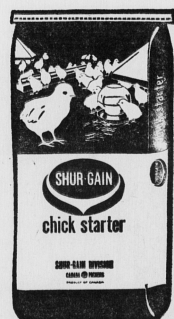
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