

Ohio Research Favorable, May Compete With Hay

Can Garbage Become Animal Feed?

One possible solution to the nation's mounting problems with garbage disposal, may be to process the garbage and feed it to cattle and sheep.

Processed garbage has proven both palatable and digestible in studies with beef steers and lambs at the Ohio Agricultural Research and Development Center, Wooster.

Kenneth E. McClure, assistant professor of animal science at OARDC, reporting preliminary

results of feeding processed garbage, said that an Ohio engineering firm has developed a method of removing metal, glass and plastic materials from household garbage.

The remaining garbage is then processed and marketed as a soil organic humus builder.

Since the product contains considerable amounts of cellulose, protein, and other components normally found in feeds, Ohio scientists felt it

might have some potential as a feed for ruminant animals.

In the Ohio study, preliminary trials showed that processed garbage was readily eaten by both cattle and sheep in meal form mixed with ground shelled corn. However, the palatability and digestibility trials were conducted using processed garbage in complete pelleted rations.

Both cattle and sheep ate the processed garbage in quantities similar to those expected with more conventional rations. The processed garbage rations were digested by the ruminant animals with no difficulty.

McClure stressed that the Ohio study is preliminary, indicating only that ruminant animals will eat and digest processed garbage. Feeding recommendations must await further testing and evaluation of feed efficiency.

At current market prices, processed garbage can be produced

and marketed in bulk at prices competitive with hay. McClure believes that the product may someday fit into livestock feeding programs in brood cow or ewe maintenance rations or

starter or grower rations for feeder cattle or lambs. The Ohio scientist also hopes to evaluate the potential of processed garbage in finishing rations for both cattle and lambs.

Ever Consider Feeding Over 80% Straw Ration?

Straw, although produced in large quantities in most areas of the world, is generally not well utilized as a feedstuff because of its low nutritive value.

European scientists started at the beginning of this century to develop chemical methods of treating straw in order to release its potential energy for animal feeding use.

In recent times there has been renewed interest in further developing such methods because of the need to find new and cheaper sources of animal feed.

A. H. Javed and E. Donefer, working at the Macdonald Campus of McGill University in Canada, have reported a method where a sodium hydroxide (lve) solution is used to treat straw in an ordinary horizontal feed mixer. The sodium hydroxide, a relatively inexpensive alkali, reacts with the encrusting and undigestible lignin contained in the straw, releasing the plant cellulose as an energy source for the microorganisms of the rumen.

After the initial reaction acid

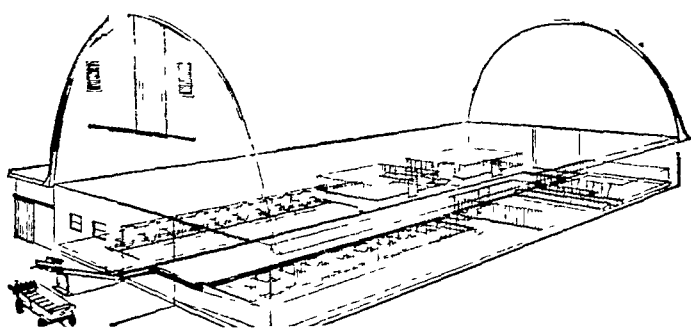
is added to neutralize the treated straw prior to animal feeding.

A ration containing over 80 per cent treated straw, the remainder consisting of molasses and protein supplements, was full-fed to early weaned lambs and weight gain compared to animals fed a ration based on dehydrated alfalfa. Lambs fed the alfalfa ration gained 0.4 pound per day which was according to National Research Council standards. The lambs fed the straw rations gained less, averaging 0.3 pound per day but still achieving what would be regarded as satisfactory performance considering the type of ration used.

There were only slight differences in feed consumption between the two groups, with an average daily consumption of 3.6 pounds of straw and 3.3 pounds of alfalfa ration.

The McGill workers conclude that continuing improvements in the straw treatment procedure should help in utilizing this largely untapped feed supply for production rations.

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80% Newsprint Feed, Anyone?

Ground newsprint and molasses as an inexpensive replacement for eight per cent of the ground timothy hay in a wintering ration for steers did not materially reduce weight gains in studies reported by a USDA animal nutritionist.

Dr. David A. Dinius of USDA's Agricultural Research Service said that replacing 16 and 24 per cent of the hay with newsprint and molasses, however, produced progressively smaller weight gains.

All diets contained protein and mineral supplements and were fed as complete feeds to groups of 12 steers each for 14 weeks at Beltsville, Md. The basic diet contained nine per cent molasses, and an additional five per cent molasses was added for each eight per cent newsprint.

Average daily gains were 1.92 pounds for the all-hay ration, 1.80 pounds with eight per cent newsprint, 1.19 pounds with 16 per cent newsprint, and 0.56 pound with 24 per cent newsprint, Dr. Dinius said.

He found that substituting ground newsprint for hay did not affect ruminal volatile fatty acid concentrations and did not alter the population of rumen protozoa, the most sensitive of the rumen microflora.

The studies are part of an ARS research effort to reduce

the cost of beef production well as to improve the environment through use of inexpensive feeds and feed substitutes as waste materials.

The Waste Reuse Issue

As the population grows and as people become more affluent, the question of what to do with increasingly huge amounts of waste becomes more acute.

This question of waste products is closely tied to the issue of pollution control. Actually, stopping pollution is largely a matter of controlling the wastes or effluents of human society.

The accompanying three articles from Penn State University summarize research underway on this question of waste control. The research findings were presented at the 62nd annual meeting of the American Association of Animal Science at University Park in early August.

All three research projects dealt with recycling or reuse of items now considered waste.

While reuse is not new — it has often happened in American industry — these articles make it readily apparent that the potential implications for farming of waste reuse are very great.

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