Sewage plus nuclear waste equals cattle feed?

Raw sewage solids and nuclear wastes may prove to be compatible, according to a report issued by USDA's Agricultural Research Service.

Irradiating the raw solids with nuclear wastes turns a potential pollutant into a useful supplementary livestock feed that may also solve a particular problem for range cattle in arid Southwest.

Irradiation kills any possible disease germs and viruses in the dry sewage, does not alter the makeup of the solids, and causes no radioactivity in the material. While the sewage contains much usable protein, of equal importance is that it also contains trace minerals, particularly copper, manganese, and zinc.

Those three minerals are either lacking or somehow become unavailable to cattle during the Southwest winter, when range grasses are dormant. Adequate amounts of the minerals through supplementary feeds, studies show, increase the number and weight of calves weaned and speed up the rebreeding of cows.

ARS range scientist Carlton H. Herbel and New Mexico State University animal nutritionist G. Stanley Smith have been studying mineral deficiency on ARS's 190,000-acre Jornada Experimental Range near Las Cruces.

The scientist divided a herd of 74 cattle into three groups. They fed one group of 25 a supplement of cottonseed meal, the other group of 25 the sewage solids in pelleted form, and the group of 24 no supplements. All of the cattle grazed the dormant range grasses as well.

The sewage supplement is 50 percent sewage solids, 23 percent cottonseed meal, 15 percent alfalfa hay, 10 percent molasses, sand about 2 percent apple flavoring. At the time of the study it cost about $80 a ton; cottonseed meal, a standard supplement, cost about $200 a ton.

During the period of the study, 3 months in 1978 and 2 months in 1979, cattle were fed about 4 pounds of supplement per head per week During that time, when the range grasses are at a nutritional low point, cows are in late stages of pregnancy or have calved and are producing milk.

Percentages of "calf crops" for the 2 years of study were 66 percent for the cows getting no supplement, 84 percent for the cows getting cottonseed meal, and 82 percent for the cows getting the sewage solids supplement.

Average weights of the calves at weaning for the 2 years were 274 pounds for the no-supplement group, 330 pounds for the cows fed cottonseed meal, and 308 pounds for those fed the sewage product.

After the calves were weaned, the cows were rebred. Only 61 percent of the group that had no supplements became pregnant, while 88 percent of the cows that had received supplements became pregnant.

All of the groups had nearly the same amounts of silver, cadmium, chromium, iron, mercury, nickel, and lead in blood, liver, and milk; moreover the sewage solids tended to improve low levels of copper, manganese, and zinc in blood and milk.

"Our results support and tend to confirm the view that products derived from raw sewage — primary sludge — could be recycled as supplemental feeds for ruminants subsisting on poor quality roughage feeds.

"Substantial nutritive benefits are provided by the sewage products without incurring undue risk from toxicity to animals or accumulation of toxicants such as heavy metals.

"Naturally, further research is necessary before feeding of sewage products could be recommended in practical livestock production," Herbel and Smith say.

Land going downstream?

LEESPORT — "Is your land going down stream?" asks Duane E. Pysher, district conservationist of the U.S. Soil Conservation Service in Berks County.

Sediment is the number one pollutant by volume of our streams, says Pysher. Accelerated erosion, or erosion other than that caused by natural process, is the cause of this sediment. Farming, construction sites, and any of man's other earth moving activities are all contributing sources of this pollutant, he explains.

"The damages that result from this pollutant are affecting all of us directly and indirectly," he adds. It causes streams and rivers to become clogged and cause more frequent flooding or creates swampland." Sedimemt fills lakes and municipal water supply reservoirs. It clogs roadside ditches, plugs culverts, decreases bridge capacities. To clean up and repair these damages costs the general public money in the form of tax dollars or adds to the cost of commodities we buy, Pysher stresses.

Through the installation of surface water control systems most of these damages can be eliminated. In the process of reducing runoff to a minimum, erosion is also reduced, he notes.

Specter requests more farm research funds

WASHINGTON, D.C. — U.S. Sen. Arlen Specter (R-Pa) has asked the Senate Appropriations Subcommittee on Agriculture, of which he is a member, to add funding to selected federal research programs designed to aid farmers.

In a letter to Senator Thad Cochran, subcommittee chairman, Specter stressed that without this important funding the nation's agricultural community will suffer.

Among the programs for which he requested adequate funding are research on the eastern russet potato, gypsy moth control, soil conservation, farm safety, brucellosis control and the Federal Grain Inspection Service.

Spector said that research efforts funded by the Department of Agriculture have "been successful in making the eastern russet potato comparable and competitive with the more expensive Idaho Potato." Continuation of this research, he said, is necessary to make the russet competitive with imports of potatoes from Canada which have been cutting deeply into the American market.

Some $2.5 million is necessary, said Specter, for research on ways of curbing the depredations of the Gypsy Moth, which last year defoliated 13 million acres of forestland.

Regarding soil conservation, he noted that Pennsylvania has ranked first in the nation in return on the dollar for this type of federal technical assistance.

"Continuation and full funding of this program is critical to conservation in my state," he told Cochran.