

How best to control water pollution from small feedlots

COSHOCTON, Ohio — Many cattle on small farms in the eastern United States are being fed on small paved lots, and runoff from these lots often carries pollutants into nearby streams.

Although we do not know exactly how serious the problem is, federal tax funds and farmers' dollars are being spent to reduce runoff from these small feeding operations, reports Agricultural Research Service.

William M. Edwards, soil scientist at the North Appalachian, Experimental Watershed, designed a 3-year study to evaluate the runoff quality from a typical small paved feedlot and from an unpaved feedlot. He also developed and tested facilities to control pollutants in the runoff.

Each October for 3 years a 2,600-square-foot feedlot was stocked with 56 steers that were fed corn silage until March. Then the ration was gradually shifted to shelled corn for the last 3 months of growth. The animals were removed in small groups as they reached market weight.

A 400-square-foot settling basin caught all runoff from the paved lot. Overflow from the basin then moved in sequence through two filter strips of fescue sod, each 100 feet long by 15 feet wide.

Runoff material was evaluated at four points as it came off the

feedlot, as it overflowed the settling basin, and as it left each of the filter strips.

Edwards, working with another ARS soil scientist, Lloyd B. Owens, and agricultural engineer Richard K. White of Ohio State University, analyzed the water for chemical oxygen demand, biological oxygen demand, total solids, total and soluble nitrogen, phosphorus, and potassium.

The settling basin was very effective in reducing solids and nonsoluble materials in the runoff," Edwards said. The filter strips were more effective in removing the soluble ammonium nitrogen, phosphorus, and potassium. Reduction of these chemicals was as effective in the second filter strip as in the first, indicating the value of the additional filtering area under these test conditions.

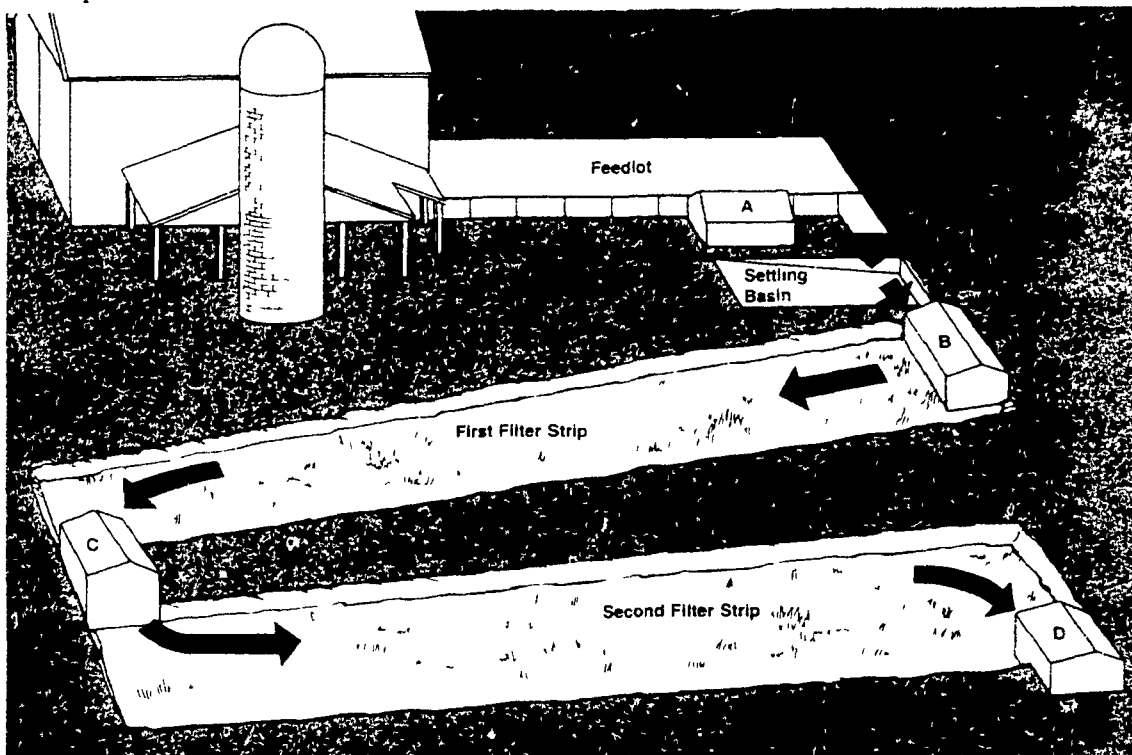
Concentrations of all materials being measured were higher in the latter part of the feeding cycle when the ration was higher in shelled corn than in corn silage. Animals fed corn silage produce a coarser textured manure, which is more easily retained in the settling basin after each runoff event.

Runoff from the paved lot equalled about two-thirds of total precipitation while runoff from the unpaved lot equalled about one-

third. "In many cases money is spent to improve feedlot runoff quality with inadequate knowledge of how bad the problem is and how much

good the proposed treatment will do. Applying the results of this study will improve the efficiency of money invested in control of feedlot runoff," Edwards said.

In continuing research, Edwards is testing reed canarygrass in the filter strips and is also evaluating the effects of tile drainage systems beneath them.



In a study of feedlot runoff, Agricultural Research Service scientists evaluated the quality of water exiting a typical small paved and unpaved feedlot. Measuring and sampling stations were established at the feedlot (A), the settling basin (B), the first filter strip (C), and the second filter strip (D).

Vegetable Co-op holds annual meeting

BERWICK — Berwick Vegetable Cooperative's 29th Annual Dinner Meeting for members and area farm leaders will be held Saturday, June 26, here at the Maria Assunta Hall.

The Cooperative's guest speaker of the evening will be E. Chester Heim, Deputy Secretary of Agriculture. His speech will be entitled "Structuring a Successful Marketing Program."

Heim has a lifetime experience in farming and agriculture. Just prior to being appointed Deputy Secretary of Agriculture in February of 1979, he was employed by the Pennsylvania Farmers Association as Manager of the Public Affairs Department.

The evening's activities begin with registration and a cash bar at 6 p.m., dinner at 7 p.m., Heim's address at 8:30, followed by the annual business meeting.

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