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CONFERENCE REPORT

III-rd International Summer School on the Influence of Location of Large Animal Farms on Wastewater Management in Submountaineous Regions — based on example of the Sudety Mountains.

The third Summer School has been organized by The Academy of Agricultural Sciences in Wrocław and Sudety Agricultural and Industrial Complex in Wrocław, between 28–30 September, 1978. Twenty seven papers were presented encompassing all aspects of manure management, processing, treatment and utilization in agriculture.

A broad discussion of various practical methods of manure utilization has been presented, the emphasis was placed on agricultural use of nutrients contained in the manure. An example of combined treatment of nutrient deficient industrial effluent with large piggery effluent has been presented, indicating significant operational savings based on the cost of artificial nutrients that would otherwise be fed to activated sludge tanks.

The whole range of newly designed manure handling, processing and transport equipment has been discussed, indicating further need for research and development of reliable pumping and comminuting equipment and highly efficient aeration devices. Transport problems of thick slurries were discussed in terms of rheological properties of pumped manures — it was concluded that the thicker the manure the more homogeneous is the pumped mass and yields itself more to intermittent pumping without clogging the pipelines.

Various economically efficient methods of thick and diluted manure land disposal were outlined, ndicating the advantages of the big-gun type sprinklers.

Particular emphasis was placed on the farms siting and sizing in respect to possible agricultural wastewater utilization, taking into account the need for modified land spreading techniques due to sloping morphological formations in the Sudety mountain range.

The discussion of novel dry solutions to manure removal (modified delta-type scrapers) has been tied to proper structural and architectural design of the farm buildings and auxilliary facilities.

Sizable number of papers and long discussions were initiated by the age-old dilemma whether to treat animal wastes as fertilizing manures or as wastewaters. The consequences are apparent in the new field of animal waste treatment. Agricultural engineers regard manure as fertilizer, regardless of the solid content and type of animal production (bedded or flushed animal stands). Sanitary engineers regard manures as wastewaters and recommend full treatment prior to agricultural utilization — termed n. b. land disposal — while soil scientist argue for minimum of mechanical treatment and agricultural utilization of the whole — untreated manures. Various techniques for manure preparation before land disposal, and treatment before stream discharge, were presented.

The Summer School's main topic however, remained to be the optimization of farm siting with respect to alternative animal wastewater treatment depending on the local environmental requirements and adverse land conditions in mountainous regions.

In summary the region of Sudety mountains, as the origin of water resources for Silesia and an important recreation area, calls for many special considerations. Not only the architecture calls for folkloristics design of farms and auxilliary buildings. Large slopes and specific land conditions require dairy cows farms not larger than 750 to 1500 heads (as opposed to the national recommended average of 1500 to 3000 heads). Sheep farms should be encouraged in the area while large (tens of thousands of heads) hog farms should be excluded.

Siting of farms should be preceded by detailed land surveys. Hydrotransport should be recommended and such manure collecting equipment that allows for agricultural use of thick manures (6–8% TS). The problems still awaiting solution are equipment, transport and storage. The use of the so-called corten steel-copper alloy tanks is expensive and is not the ultimate solution.

Finally, it should be stated expressly that animal wastewaters are a valuable fertilizer resource and means and methods should be sought that allow for hygienic evacuation of thick wastes, their proper storage and adequate land application with minimization of environmental hazards.

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