Mechanical and Hydraulic Properties of Soils in Intensively Grazed Pastures. (S01-vazquez141629-Poster)

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Abstract:

Dairy farms in Puerto Rico are usually small, resulting in intensive grazing on available pasture land. Soil compaction has become a concern on these farms. To assess the extent of the problem, we initiated a survey of farms which have been under intensive grazing (>5 animals/ha) for a number of years. Here we report results from the first six of these farms. At each farm, undisturbed soil cores 5 cm deep were taken at 5 regularly spaced positions under the fence row (uncompacted control), and 5 cores were taken from locations under heavy animal traffic adjacent to the control plots. Qualitatively, it was observed that soil mechanical resistance to insertion of the cores was considerably greater in the trafficked zone than under the fence rows. Water retention curves showed that in 5 out of 6 cases, total drained porosity in the 0-300 cm tension head range was 1.4 to 1.9 times higher under the fence row than in the trafficked zone. Hydraulic conductivity values, measured in the cores at saturation and at 5 cm tension, were generally higher under the fence row than in the trafficked zone, but except at two locations the differences were not significant.

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