

SHEPHERDS - A STUDY TO DETERMINE THE RELATIONSHIP BETWEEN
MANAGEMENT, DISEASE AND PRODUCTIVITY IN ONTARIO SHEEP FLOCKS

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The SHEPHERDS study (Sheep Health and Productivity Herd Study) was undertaken to determine the current status of productivity, disease and management practices in Ontario sheep flocks. This study is a combination of two types of studies, a questionnaire survey which gathers information on management practices and productivity outcomes, and a study of populations for biological or immunological evidence of disease. This study attempts to answer the questions of why diseases occur in the patterns that they do and what effect that a particular distribution of a disease has on productivity.

Using a sampling frame of flock owners registered with the Ontario Red Meat Plan, 107 flocks were randomly selected. The flock owners agreed to allow the researchers access to Record of Performance (ROP) data on lamb births and weights. All were administered an intensive interview on flock management practices. Five farms dropped out and from each of the remaining 103 flocks, a randomly selected sample of animals from the adult breeding ewe flock were blood sampled. The number selected from each flock was calculated to detect serological evidence of disease at 5% prevalence or better with a 95% probability. Blood and hair for selenium analysis was collected from a subsample of the same ewes.

For twelve months (June 1988 to June 1989), flock managers were ask to record all flock events (breedings, lambings, culls, deaths, treatments). Productivity data was obtained from ROP. Using the flock as the unit of concern, these data have been analyzed for associations between management practices, disease prevalence and productivity outcomes. Productivity was measured in terms of lambs born per ewe lambing, lambs born per ewe exposed to the ram, stillbirth rate, neonatal mortality rates, culling rates, and 50 and 100 day lamb weights. Variables that were correlated negatively or positively with productivity fell into one of three categories: management practices obtained by questionnaire; serological evidence of disease; and selenium status of the flock. Areas of management that were examined included general farm features, nutrition, pasture, housing, reproductive practices, health practices and culling.

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