

# Examination of some sampling methods in entomology

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Ekbom, B. 2001. Examination of some sampling methods in entomology. *Norw. J. Entomol.* 48, 11-17.

The purpose of this paper is to discuss some of the problems encountered in designing sampling programs. One problem of central importance in entomological research is the estimation of abundance. Whether our goal be the monitoring of relatively abundant pest insect species or rare threatened species it is essential to design a sampling plan that allows us to minimize error. Intensive sampling efforts should be carefully considered before implementation, as costs can be prohibitive. In this lecture I will consider the usefulness of presence-absence (or abundance-occupancy) sampling in both conservation and pest management scenarios. Some examples from each discipline will be given and emphasis will be put on estimation of error and interpretation of the data obtained. Another topic will be use of traps, in particular pitfall traps, and the accuracy obtained. Careful consideration of exactly what traps measure, for example activity or abundance, is necessary in choosing a suitable trapping technique. The importance of resource distribution when using relative sampling techniques, such as pitfall and pheromone traps, will also be discussed.

Key words: sample size, presence-absence sampling, trap efficiency, pitfall traps, pheromone traps

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