Program DOSECOMP

This program analyzes dose responses for two populations, using the PROBIT model and the abbreviated protocol as described by Link et al(1996). Data required are the number of responses ("deaths") and the sample size ("subjects") at each of a variety of level of doses. NOTE: Doselevels must be entered according to the scale on which the analysis is performed (e.g., log-transformed).

Data for the first population is referred to as "baseline" data. The program is designed to allow for a preliminary analysis of these data, which is used for choosing dose levels and sample sizes for the experiment on the other population ("secondary" data). If desired, p-values for results of a secondary study involving "m" animals at the estimated baseline ED50 can be calculated as part of the baseline analysis.

If the secondary data are obtained at a variety of dose levels, the user is given the option of testing the assumption of equal slopes of the dose response curve. If the secondary data are obtained at a single dose level(typically the ED50 arising from the baseline study), it is necessary to assume that the slopes of the two dose response curves are equal.

If the baseline data indicate poor model fit (likelihood ratio statistic significant at alpha = 0.10) a heterogeneity factor is used in subsequent tests of significance.

All output is saved to a file named DOSECOMP.OUT.

Link, W. A. E. F. Hill J. E. Hines and P. F. P. Henry. A Resource Conservative Procedure for Comparison of Dose-Response Relationships. Environmental Toxicology and Chemistry. 1996; 15(9):1612-1617.

Input data

The program is menu-driven and data can be input directly or stored in data files. The baseline data file or secondary data file consist of three fields separated by spaces or tab characters. The fields are: dose-level, number of deaths, and number of subjects.

Program operation:

DOSECOMP is an MS-DOS program. To run the program from Windows, open an MS-DOS window or double-click on 'dosecomp.exe' from the file-manager (or windows explorer in Windows 95). Hit "Enter" after the initial screen appears, then select the desired option from the menu. To test the program on the data which appears in the Link et. al. article, enter 'sample.bas' for the name of the baseline data file, and enter 'sample.sec' for the name of the secondary data file.

Output will be saved in a file named dosecomp.out which may be viewed with any text-editor or word-processor.

If data are entered via the keyboard, the program will save it in a file named baseline.tmp (or secondar.tmp). These files may be modified and saved with different names if desired.

Program availability

This program (and many others related to computation of wildlife) are available at: www.mbr-pwrc.usgs.gov/software

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