



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: ACEPHATE - Statistical Review of Cholinesterase
Activity in Humans, Monkey and Rat Caswell #2A

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SUMMARY:

At the request of Ed Budd, this memo is a re-review of the latest submission Chevron Chemical Company on acephate.

A statistical comparison was performed by the sponsor and the results of that test were the same as previously reported. There is still the problem of the small number of experimental units (3 or 4) and the fact that the statistical test does not take into account the within and between animal variation.

I agree with the conclusion that rat brain AChE is more inhibited by acephate than monkey brain which is more inhibited than human brain. The variances in this study are so small that extremely small differences would be significant. Hence, the question of significant mean differences is a function of both the size of the difference and the size of the standard deviation of the mean to test those differences.

Although individual comparisons of the slopes of the regression lines were made, I would still prefer an analysis of

variance approach. However the company spokesperson said that their method of analysis was standard in that field as well as the various transformations that were used.