WHY MOSQUITO CONTROL AGENCIES SHOULD

CONSIDER AUTOMATED DATA PROCESSING

Fred C. Roberts

Alameda County Mosquito Abatement District
3024 E. 7th Street, Oakland, California 94601

There are a number of very good reasons why mosquito control agencies would find computers beneficial to their operations. Mosquito control agencies generally process large amounts of biological, operational and administrative data. The information is usually hand processed by one or two members of the clerical staff. Computers would handle these large amounts of information rapidly and efficiently.

Mosquito control agencies also look at data in many different ways. For example, it may be necessary to collect information about the species of mosquitoes at a particular type of source, or the number of man-hours spent at a particular source, or the man-hours spent on a particular species. A computer can be programed to provide the data in any variety of combinations.

The computer is also an extremely useful tool in mosquito control because of the complex nature of mosquito problems. Effective mosquito control in California usually requires knowledge of the life history of a number of species of mosquitoes and their numeric response to a variety of environmental parameters. The complexity is further increased by the necessity to consider the potential environmental impact of control methods and potential insecticide resistance problems. The computer offers the opportunity to have data immediately available and to process it appropriately to provide pertinent and timely information to support complex mosquito control decisions.

One of the strongest arguments for computers in mosquito control is that our problems are generally of a cyclic nature and the logic patterns re-occur. As biologists we spend much of our time learning about these cyclic patterns so that we can effect control in the future. The computer can provide us with the opportunity to simulate these cyclic phenomena. The result can be better predictions concerning the levels of mosquito populations and better decisions concerning the need and/or type of control.

The computer can be a helpful tool because mosquito control often requires accurate solutions. For example, the chemical equipment needs to be properly calibrated in order to assure that proper amounts of insecticide are being applied. The computer committee of the California Mosquito and Vector Control Association has developed a program to calibrate spray equipment for mosquito control agencies. The program eliminates the need for laborious and difficult mathematical calculations by the technician and provides immediate, accurate results.

Finally, a strong argument can be made that computers should be utilized in mosquito control because they are inexpensive and highly reliable. Just a few years ago the cost was prohibitive for most small agencies. Today, a number of highly reliable micro-computer systems are available that would meet the needs of most mosquito control agencies and would cost only a few thousand dollars.

COMPUTER APPLICATIONS IN MOSQUITO CONTROL.—If you are not yet convinced that mosquito control agencies could benefit by automated data processing, let me give some specific examples of how computers can be used in an agency. First the various kinds of data can be stored on disks or other medium. Biological records, operational data, weather data, literature and accounting information can all be stored on disks, increasing its accessibility and saving voluminous space compared to paper files. These "raw data files" can then be updated by computer programs to develop "2nd generation data files" that can be updated routinely as raw data is collected and processed. An example of a 2nd generation data file would be a file of mosquito sources that would be constantly updated to reflect the costs of mosquito control for any particular source.

The computer can also be used to generate reports. The stored data can be processed efficiently and accurately to create reports for the trustees, manager, entomologists or technicians. These reports can be particularly effective if they put current field information into the hands of employees who must make critical control decisions.

Computers can also be used to transmit data from one location to another by telephone. If an agency has more than one division, the computer can increase the efficiency of information flow. The data that is transmitted may be quantitative or textual in nature. For example, it may not be too far away that we will be reporting our light trap data to the state through a computer telephone system.

BENEFITS OF AUTOMATED DATA PROCESSING (ADP).—The computer should benefit mosquito control because better decisions can be made by employees to effect better control. Better decisions should be made because greater amounts of more accurate information can be processed faster. The result may also be a reduction of costs.

Another benefit provided by computers is the opportunity to provide administrative control. The programs that are developed for the computer can be designed to provide essential

information to supervisors, manager and entomologists concerning activities for all personnel. Decisions can then be made to adjust the employee effort to insure that goals and objectives are being met.

A final benefit that ADP can provide is to re-evaluate the logic of an agency's approach to mosquito control. The implementation of ADP in a mosquito control agency requires an analysis of information flow. The selection of the kinds of data that is necessary to make the various administrative and control decisions may well be a worthwhile re-evaluation resulting in major or minor modifications of the control program.

BEFORE YOU PURCHASE A COMPUTER.—If you are now ready to run out and buy the inexpensive miracle just described for your mosquito control agency, perhaps a few words of caution. A master plan should probably be developed to insure the efficient implementation of ADP. The potential applications of the computer could be listed, and the objectives defined for each application. Priorities could then be established for the various applications. It may also be prudent to involve as many employees as possible in the planning process.