Contract Number AT-33-1-GEN-53
MOUND LABORATORY
Operated By
MONSANTO CHEMICAL COMPANY
LLANISBURG, OHIO

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Laboratory Director

HEALTH DIVISION RESEARCH PROGRESS REPORT

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Date: December 1-31, 1948
Distributed:
JAN 20 1949

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I. HEALTH DIVISION RESEARCH PERSONNEL


* On Loan to Medical Department.
** On Loan from Maintenance.

II. ABSTRACT

Efforts during this period have been directed primarily toward organizing the laboratories and installing equipment. Consequently, most of the research projects have been interrupted temporarily.

Some biochemical work has been done to evaluate the effect of different plating times upon the recovery of postum from digest solutions. Results show that long initial platings are as effective as a number of shorter successive platings of equal total time. A study of still longer total times is contemplated.

Work is continuing on Instrument Section projects, though no projects have been completed during this period.

III. DETAILED REPORT

The present period was devoted primarily to organizing the new laboratory, consequently, the amount of experimental work to be reported is small.

A. BIOLOGICAL GROUP


A. Intravenous Postum LD50 of Sprague-Dawley Rats

Statistical analysis is being continued.
b. Hematological and Pathological Effects of Postum on Rats and Rabbits

Work on this problem has been interrupted by the moving of the laboratory.

c. Genetic Effects of Postum on Fruit Flies

Laboratory organization and literature review, as reported last month, is being continued.


a. Development of a Spectrophotometric Curve for the Determination of Urea

Work on this problem has been interrupted by moving the laboratory.

b. Studies Concerned with Some of the Factors Which May Affect Deposition of Postum on Copper Disc

A study was made to determine optimum recovery of postum in the shortest time from digest solutions (0.011 microcuries). Percentage recoveries (15 replicates) are summarized in Table I. No significant difference appears between total recoveries or between the recoveries from four one-hour platings and two two-hour platings. Thus, the latter represents a saving in plating set-up time and the number of discs to be counted. Further study of longer single platings are contemplated.

c. Studies Concerned with the Determination of the Postum Content of Rat Feces

Work on the problem has been interrupted by moving the laboratory.

d. Distribution of Postum in Different Tissues, Fluids and Secretory Products of Laboratory Animals

The literature survey has continued and an organizational report is being drawn up.

e. Postum Effects Upon the Biology of Sewage

Laboratory organization and literature review, as reported last month, are being continued.
Table I

AVERAGE PERCENTAGE RECOVERIES FOR THE DIFFERENT TIME INTERVALS OF PLATING

<table>
<thead>
<tr>
<th>Plating Time</th>
<th>First Plating</th>
<th>Second Plating</th>
<th>Third Plating</th>
<th>Fourth Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 hr.</td>
<td>72.3</td>
<td>88.2</td>
<td>91.9</td>
<td>93.3</td>
</tr>
<tr>
<td>1 1/4 hr.</td>
<td>72.2</td>
<td>87.4</td>
<td>91.1</td>
<td>92.1</td>
</tr>
<tr>
<td>1 1/2 hr.</td>
<td>82.6</td>
<td>91.7</td>
<td>92.8</td>
<td>93.0</td>
</tr>
<tr>
<td>1 3/4 hr.</td>
<td>82.4</td>
<td>91.3</td>
<td>92.4</td>
<td>92.5</td>
</tr>
<tr>
<td>2 hr.</td>
<td>88.6</td>
<td>94.1</td>
<td>94.7</td>
<td>94.8</td>
</tr>
</tbody>
</table>

3. Future Plans

A comparative study of the value of handling animals in groups rather than as individuals.

B. SPECIAL PROBLEMS

1. Analytical Research Sub-Group - J. Weitz

a. Development of Low Activity Analytical Techniques

Experimental work in this laboratory is still awaiting the installation of stirring apparatus.

C. RESEARCH AND DEVELOPMENT GROUP (Instrument Section) - J. Combs, I. Grafton, B. Guthals, C. Hemler, W. Hood, A. Rogers, G. Schommer*, and J. Williamson

* On Loan from Maintenance Group.

a. Development of a High Rate Parallel Plate Alpha Counter

This project is still temporarily discontinued.

b. Development of a Low Microphonic Parallel Plate Alpha Counter

Construction of the parallel plate alpha chamber reported last month is being continued.
c. Development of a Logarithmic Rate Meter

Work has continued with the logarithmic rate meter circuit reported last month. An attempt is being made to reduce the susceptibility of the circuit to power line voltage fluctuations.

d. Development of a Method for Agitating Cleaning Solutions Used in Decontamination of Laboratory Hardware

Work is progressing as planned.  

D. REFERENCES


