YOUNGER LABORATORIES
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Certificate of Analysis

October 20th, 1958

SUBJECT -

Toxicological Investigation Of OS-95.

Monsanto Sample Number 102 - Lot 7501-3677;
Monsanto Sample Number 17 - Lot 8-59

Monsanto Project Number I-58-29

TESTS CONDUCTED FOR -

Monsanto Chemical Company, St. Louis, Missouri

EXPERIMENTAL PROCEDURE -

A) Skin Absorption MLD (Rabbits)

The undiluted compound was applied in varying amounts to the closely clipped, intact skin of albino rabbits and the animals placed in wooden stocks for eight hours after which the trunk was wrapped in plastic strips and the animals returned to individual cages.

Observations were made for toxic symptoms and the viscera of selected animals from those succumbing were examined macroscopically.

The data are shown in Table I.

B) Skin Irritation (Rabbits)

0.1 Milliliter of undiluted OS-95 was applied to the clipped, intact skin of albino rabbits and observations made over a period of several days for irritation.

The results, scored according to Draize, Woodard and Calvery (Journal of Pharm. and Exp. Therapeutics, Volume 82, 377 (1944)), are shown in Table II.

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TABLE I

TOXICITY OF 'OS-95' BY SKIN ABSORPTION IN RABBITS

Sample Applied Undiluted

Animal No. - Sex	Weight Kg.	Dose Mg./Kg.	Weight Change 5 Days Later Kg.	Fate
SAMPLE 102, Lot 7501-3677				
1 - Male	2.1	1000	0.0	Survived
2 - Female	1.8	1500	- 0.2	Survived
3 - Female	2.0	2000	- 0.3	Died - 7 Days
4 - Male	2.4	2000	- 0.1	Survived
5 - Male	2.3	2500	- 0.2	Died - 6 Days
6 - Male	2.4	2500	- 0.1	Died - 14 Days
7 - Female	2.0	3500	- 0.3	Died - 5 Days
SAMPLE 17, Lot S-59				
1 - Female	2.3	1000	- 0.1	Survived
2 - Male	2.6	1250	0.0	Survived
3 - Male	2.5	1250	- 0.2	Died - 17 Days
4 - Male	2.3	1500	- 0.3	Died - 9 Days
5 - Female	2.2	1500	- 0.2	Died - 7 Days
6 - Female	2.1	2000	- 0.2	Died - 7 Days
7 - Male	2.6	2500	- 0.3	Died - 6 Days

DISCUSSION -

There was one death and one survival at 2000 milligrams per kilogram on Sample 102, Lot 7501-3677.

Survival time ranged from five to fourteen days. Gradual loss of appetite with increasing lethargy and weakness developed.

On Sample 17, Lot S-59 there was one death and one survival at 1250 milligrams per kilogram.

Survival time was six to seventeen days. Toxic symptoms were very similar to those already described.

At autopsy there appeared to be degenerative changes in the liver by macroscopic examination. Pulmonary hyperemia was also observed.

TABLE II

SKIN IRRITATION IN RABBITS AFTER APPLICATION OF 'OS-95'

Sample Applied Undiluted

Animal Number	Numerical Evaluation At The End Of 1 Hour	4 Hours	24 Hours	48 Hours	72 Hours	120 Hours
SAMPLE 102, Lot 750L-3677						
1	0	0	2	1	1	0
2	0	1	3	2	1	0
3	0	1	2	2	1	0
Average	0.0	0.6	2.3	1.6	1.0	0.0
SAMPLE 17, LOT S-59						
1	0	1	3	2	2	1
2	0	1	2	2	1	0
3	0	1	3	2	1	0
Average	0.0	1.0	2.6	2.0	1.3	0.3

DISCUSSION -

No irritation was observed on either sample one hour after exposure. Two out of three animals on sample 102 showed barely perceptible erythema after four hours for an average score of 0.6 out of a possible 8.0. Overnight there was well defined erythema with one instance of slight edema increasing the average score to 2.3. Removal of the application reduced the irritation to barely perceptible redness on the third day.

There was practically no difference between the two samples as the data in the table indicate. The average twenty-four hour score for number 17 was 2.6 as compared to 2.3 for number 102.

The two samples of OS - 95 were classed as mild to moderate skin irritants.

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— Monsanto Chemical Company

SUMMARY —

The Minimum Lethal Dose range by skin absorption in rabbits was determined on two samples of OS - 95.

Number 102, Lot 7501-3677 gave a range of 2000 to 2500 milligrams per kilogram.

Number 17, Lot S-59 gave a range of 1250 to 1500 milligrams per kilogram.

Both samples were classed as mild to moderate skin irritants. The average maximum score for number 102 was 2.3 out of a possible 8.0 in twenty-four hours. Number 17 scored an average of 2.6 after the same time interval.