

MONTANA FISH AND GAME DEPARTMENT  
FISHERIES DIVISION

## OBSERVATIONS ON DISPERSION RATES OF THREE TOXICANTS

Gross observations were made on the relative dispersion rates of Chem Fish Special, old Pro-Nox Fish and the new Pro-Nox Fish that was used on Milner Lake in August, 1958. Three glass jars  $7\frac{1}{2}$  inches high and 2 inches in diameter were filled with well water at  $60^{\circ}$  F. Each jar received 3 drops of one of these chemicals. In each case, the toxicant was dropped from about one inch above the surface.

After 20 minutes, the appearance of the three jars were as follows:

CHEM-FISH SPECIAL: The chemical had reached the bottom of the jar but was not evenly distributed throughout the column of water. Slight agitation of the water resulted in completely even mixing of the chemical.

OLD PRO-NOX FISH: Most of the chemical still remained on the surface of the water. A few thread-like projections of the toxicant had sunk to about the middle of the water column. The lower half of the column remained completely clear. Agitation comparable to that applied to the Chem Fish column did not change the distribution of the old Pro-Nox Fish. Stirring with a glass rod resulted in complete dispersion of the toxicant but this required more agitation than did the Chem-Fish Special.

Another test was made by adding a few drops of this chemical about  $\frac{1}{2}$  inch below the surface of the water. The material immediately floated to the surface. The water was agitated to mix the chemical into the upper two inches of water. Twenty minutes later, some of the chemical had reached the bottom of the jar in the middle of the water column but the outside of the column remained clear. Slight agitation of the solution resulted in even distribution of the toxicant at that time.

NEW PRO-NOX FISH: Prior to the end of the 20 minute interval, the toxicant had become evenly distributed through the column of water. Agitation made no difference in the appearance of the solution. This solution was more white or milky than were the mixtures of the other chemicals.

Chem Fish Special and the old Pro-Nox Fish were both used on the Noxon Rapids rehab which was carried out over the Labor Day weekend. The Chem Fish Special was sprayed from a helicopter on the longer riffle areas. Fish began showing up soon after spraying, and, from all appearances, this chemical worked satisfactorily under these conditions.

The old Pro-Nox Fish was used in Thompson Falls Reservoir to supplement the powdered toxicant available for the project. The liquid was applied by connecting a length of rubber hose to the barrel and trailing the terminal end of the hose in the prop-wash of the outboard motor.

Fish began showing signs of distress soon after application started but no further checks were made on dispersion. The crews members that applied this chemical felt that boat activity and water currents in the reservoir were sufficient to properly mix the Pro-Nox Fish.

Prepared by:

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