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Marquette Hatchery
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EXPERIMENTAL DIET CONTAINING FIVE PER CENT BREWER'S YEAST

IN USE AT GRAYLING AND MARQUETTE HATCHERIES

by

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Due to the high loss of fish sustained by some hatcheries during the winter months, an experiment was set up using five per cent brewer's yeast (cattle type) as a source of vitamin B, in an effort to reduce these losses. Four ponds, two containing an equal number of brown trout and two containing an equal number of rainbow trout, were set aside for the experiment at Grayling Hatchery. Two ponds containing an equal number of brook trout were set aside for the experiment at Marquette Hatchery. The experiment is to continue until normal summer water temperatures return. The length, weight and losses will be compared at the termination of the experiment.

At Grayling Hatchery four experimental ponds were set up, each containing 5,700 trout yearlings. Two ponds contain rainbow trout and two contain brown trout. The diet of one pond of rainbow trout and one of brown trout contains five per cent brewer's yeast. The remaining two ponds, one of rainbow trout and one of brown trout, are fed the same diet without the addition of yeast. The yeast diet was begun on August 1, 1943.

The average length and weight of these trout, based on 100 specimens, in millimeters and grams taken on September 16, 1943 and December 10, 1943 are as follows:

Brown Trout

| | Control | | | Yeast | | |
|-----------------------------|---------|--------|------|--------|--------|------|
| | Length | Weight | Loss | Length | Weight | Loss |
| 9/16/43 | 133.0 | 24.4 | | 134.1 | 32.6 | |
| 12/10/43 | 159.7 | 42.01 | 182 | 161.6 | 43.1 | 182 |
| Total loss as of 1/1/44 ... | | | 191 | | | 193 |

Rainbow Trout

| | Control | | | Yeast | | |
|-----------------------------|---------|--------|------|--------|--------|------|
| | Length | Weight | Loss | Length | Weight | Loss |
| 9/16/43 | 129.7 | 25.6 | | 128.4 | 23.4 | |
| 12/10/43 | 134.9 | 27.2 | 96 | 166.5 | 31.7 | 65 |
| Total loss as of 1/1/44 ... | | | 108 | | | 71 |

Average water temperature: Loss (4 ponds combined)

| | | |
|-----------|------|-----|
| September | 51.8 | 140 |
| October | 45.1 | 45 |
| November | 38.1 | 25 |
| December | 33.7 | 38 |

The results of the experiment to date cannot be accurately evaluated because the fish in the ponds were graded for size during October and, unfortunately, the number graded out of each pond was not recorded. A count of the fish will be made when the fish are graded in the spring and conclusions recorded in the final report. However, from the data presented above, the yeast appears to have little or no beneficial effect on brown trout and to have been beneficial to the rainbow trout both in growth and in reducing the amount of loss.

At Marquette Hatchery two ponds containing 10,000 fingerling brook trout each are being used for the experiment. The trout are being fed the usual hatchery diet, with five per cent brewer's yeast being added to

the diet of one pond of fish. The experiment was begun on September 20, 1943, supervised by Mr. Robertson. Weights and measurements taken were by Mr. Robertson. The figures below were averaged from 100 specimens and are expressed in millimeters and grams.

| | Control | | Yeast | |
|---------------------------|---------|--------|--------|--------|
| | Length | Weight | Length | Weight |
| 10/3/43 | 76.7 | 3.54 | 71.6 | 3.40 |
| 10/29/43 | | 5.10 | | 4.82 |
| Total loss as of 10/31/43 | | 7 | | 12 |

Average water temperature:

| | |
|----------------|------|
| October | 44.8 |
| November | 41.5 |

The experiment has not been underway long enough to permit valid conclusions at the present time. From the above data it is evident that the control pond showed less loss and greater gain in body weight as of October 31, 1943, at which time the experiment had been in operation for approximately one month. It may be that beneficial effects of the yeast will not become effective until lower water temperatures prevail or it may not be beneficial to brook trout. An evaluation of the effects of yeast on brook trout will be reported at the conclusion of the experiment.

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