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Growth studies were done on five cultured algae commonly used for larval food. The organisms investigated were two members of Bacillariophyceae, *Skeletonema costatum* and *Chaetoceros calcitrans*; two Chlorophyceae, *Tetraselmis chuii* and *Chlorella virginica*, and one Chrysophyceae, *Isochrysis galbana.* Unialgal cultures of these species were set up indoors and grown under similar physical and chemical conditions. Data on growth phases were taken by monitoring growth rates expressed as units of divisions per day obtained from serial optical density readings which were converted to logarithmic values. These were then plotted against time and each phase of growth identified.

Based on the behavior of the growth rate, the growth cycle of each species has been observed as a sigmoid curve; this is divided into several phases namely: lag, exponential, declining and stationary phases. Under specific culture condition each phase has been determined and defined (See Fig. 1 for *S. costatum*).

The objective of this study is to be able to determine the onset and duration of the growth phases of cultured algae commonly used as larval food so as to predict the time of harvest at the desired stage to suit various needs and purposes.

Using an initial population of 50,000 cells/mL in the log phase of growth, cultures of *S. costatum, C. calcitrans, T. chuii, C. virginica,* and *I. galbana* were set up in baxter (1 L cap.) with three replications and at least three runs for each species. The experiments were conducted inside the Phycology laboratory at a temperature range of 21-25^{o}C, provided with continuous aeration and illumination of 12,000 lux from cool white fluorescent bulbs. Culture medium consisting of Urea, 100 ppm; K_2HPO_4, 10 ppm; $FeCl_3$, 2 ppm; $NaSiO_3$, 2 ppm; Vit. B_1 and B_{12}, 0.01 ppm and Agrimin, 1 ppm was used for all culture studies.

Cultures were monitored once every four hours for the two diatoms and once each day for the three other species. Data for growth rates were obtained by taking optical density readings which were converted into log 2 O.D. + 10 and plotted against time. A straight line is then drawn to fit as many points as possible (after the method of Sorokin).

Table 1 shows the data for growth rates for the five test species. It includes the wavelengths used, the exponential growth rates (R_E) expressed as number of doublings per day and their occurrence; other phases occuring in the same order as in Fig. 1.

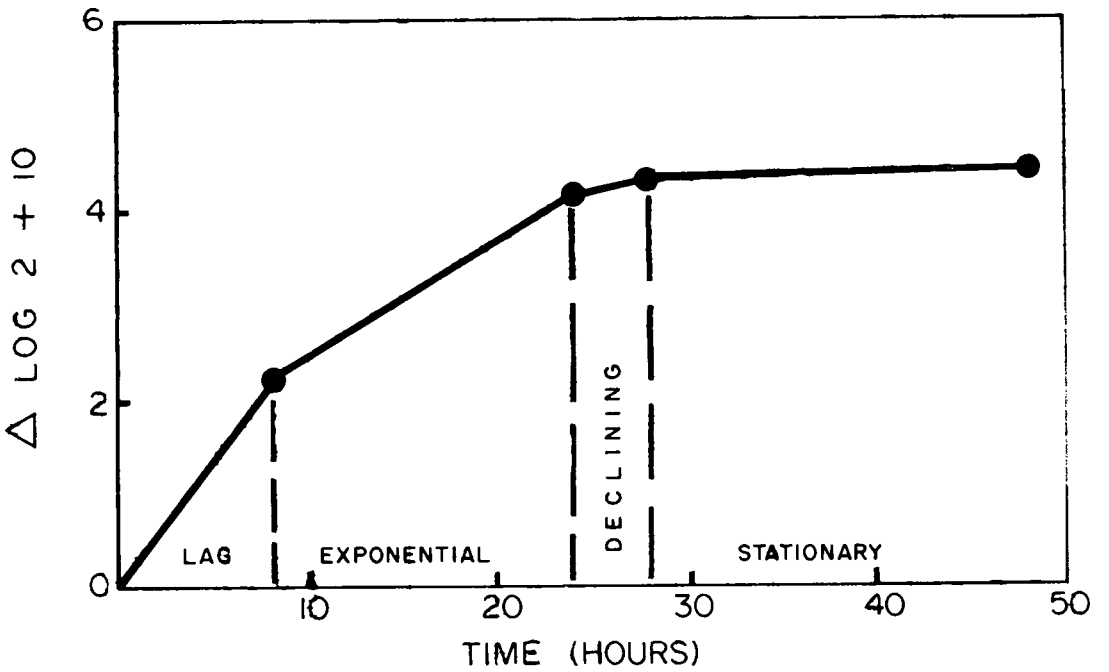

Fig. 1. Growth phases of *Skeletonema costatum*.

Table 1. Data for growth rates of five cultured algal species used as larval food.

Species	Wavelengths	Range of R_E	Occurrence
S. costatum	682	3.158–4.44	22–24 hrs.
C. calcitrans	684	4.29 –4.65	24–27 hrs.
T. chuii	680	0.95 –1.32	3 days
C. virginica	684	.79 –1.04	4 days
I. galbana	685	.82 –1.00	3 days

References

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