

Metadata Details

Title

Primary and Extracellular Production during Austral Summer at 70S, 12E, Antarctica.

Science Keywords

Category	Oceans
Topic	Marine Biology
Expedition Year	1985-1986
ISO Topic	Oceanography

Summary

Abstract

Much of the ^{14}C radioactivity supplied as $\text{NaH}^{14}\text{C}^{13}\text{O}_3$ accumulates in the low molecular weight fraction of the particulate matter, into polysaccharides and proteins. There was little radioactivity in the lipid component. Phytoplankton exudation showed a significant decline with greater depth within the euphotic column. The quality of material exuded also varied. In some cases, a greater amount of aminoacids was released whereas in other cases organic acids formed the greater fraction. These data are discussed in relation to physical oceanographic factors.

Purpose

Earlier studies have shown that Antarctic phytoplankton excrete from 1 to 30% of assimilated carbon as extracellular products (Home et al., 1969). Recent studies on marine phytoplankton near the ice-edge at 70°S, 12°E during an austral summer show that several low molecular weight metabolites are exuded by natural assemblages of Antarctic phytoplankton and that past physiological history of sampled populations may determine the nature of exuded material in these colder waters as it does in other regions of the world oceans. This hypothesis is discussed with reference to biomass estimated as chlorophyll a and ATP, growth rates of phytoplankton and primary and extracellular product determinations. The data presented here was collected during the Fifth Indian Expedition to Antarctica, 1985-1986.

Data Center