POSITIVE BLUE-GREEN ALGAE SEEDING PROCESS

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This seeding process was devised by the author to effect an even dispersion of blue-green algal cells in the desired suspension media which contain all the known macro and micro nutrients necessary for optimum plant growth.

The seeding operation must be done mechanically as any other process will prove to be too arduous and time consuming. The desiccation of the blue-green cell mass is of primary importance and it requires the use of a special water pump for thorough dispersion.

This operation accomplishes three advantages:

1. The original seed mass when broken up will cover a greater area thus serving and acting as the benthic algal base;

The pseudo-vacoules of blue green algae or phytoplankton are either oil- or gas-filled and act as floatation device for these plants. When deflated or collapsed, they sink and form part of the benthic stratum re-surfacing when the vacoules are again filled with gas or oil. This is brought about by the process of photosynthesis and/or the increase in water temperature.

2. The original cells when desiccated are given optimum opportunity for growth for the whole cell area is exposed in the suspension media which contains all the nutrients required for optimum growth.

3. Aeration is effected simultaneously. Oxygen is introduced while carbon dioxide is reduced. Seeding is best during the evening or late afternoon at the stage when phtosynthesis is reversed, imbibing oxygen and releasing carbon dioxide. The plants having been released in the water containing supersaturated oxygen are given the optimum factors for survival and growth.

In the experiments I have conducted, this procedure resulted in time saving. If it took me 28-40 days under the traditional method to grow the food for the fish, this method needed only anout 16-24 days or a saving of at least 40 percent of food growing time.

More research is required as many other factors must be considered. The seeding site and its physical and chemical parameters must be considered and monitored to produce optimum algal growth.

While conditions of salinity, photosynthesis and the nutritional requirements of the plants must be met by the fish farmer, the seeds introduced as well as the seeding process in the pond, the soil, the nutrients, the bottom mud, and the water interact.

Finally, plasmolytic reaction appears negative if these plants are gradually conditioned to temperature, salinity, dissolved oxygen, acidity, alkalinity, etc. Neither will the cell walls rupture under low osmotic pressure, although at times some mutation may occur, if conditioning is properly done.

Some other subjects related to the study are: photosynthesis, wind action, wave action, absorption, reflection, suspension, turbidity, stratification, salinity, and DO (N_2 CO_2 Phosphates, etc).

In all cases disease and parasites and predators are limiting factors in fish production.

The author has tested all methods vis a vis this seeding procedure and he has, with almost absolute certainty, induced the growth of algae where they say it could not grow. He has induced growth in salinities of +05 and higher but finds that in the country they can grow best at 28 to 32 ppt.

For this reason, the author has deemed it necessary to protect his process locally and internationally as this was achieved only after years of untiring research.

There are at least 15000 different species of algae. The blue greens have no differentiated roots, stems or leaves. They vary in size, habit, and reproductive process but belong to the heterogenous group of organisms. They proliferate everywhere from oceans to puddles. Basic in the food chain are (Phytoplankton triconomi). If these plants are enveloped in a gelatinous sheath as are the blue greens, they are referred to as filaments. These algal cells are basically similar to (Thallophyte) resembling bacteria in shape and arrangement. Blue greens are semi-rigidly structured, pliable and will not normally break even in rough handling. The nuclei are normally present in most algae except the blue greens which are gelatinous. Starch grains, oils, and vacoules in blue greens have no chloroplasts and pigmentation is limited to the peripheral portion of the protoplast which assists its growth in photosynthetic process. Reproduction is done usually by fragmentation or fisshion.