Division of Marketing
Agricultural Development and Diversification (ADD) Program

1994 Grant Final Report

Grant Number P94002

Grant Title Water Quality Management in Aquaculture

Amount Awarded $13,000.00

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Star Prairie Trout Farm
WATER QUALITY MANAGEMENT IN AQUACULTURE

Final Report and Invoice * * * 6/5/96

Please accept apologies for failing to report for so long. The exceptionally late spring forbade progress until quite recently. Also, I thought our grant extension covered until 6/30, not 6/1/96, as per Gwen Garvey's 12/20/95 memorandum.

At any rate we have been working at a feverish pace since the weather broke to keep up with growing markets, expanded production and, of course, to wrap up our grant project in June.

The wastewater treatment facility which we have designed and built is up and functioning and drawing attention from all who see it. The three large vertical tanks appear like miniature nuclear power plant silos. It is a prototype and as such will be further refined with use, but it succeeds at settling out major solids from pumped fish waste, sand and sediment, in the uppermost tank before overflowing to the second. With overflow from the second tank, and then the third, discharge water is, though slightly cloudy, largely free of settlable solids. Settled solids in the tank are not yet completely dried from this month's first trial run, but appear to be easily workable as fertilizer with a bit more drying time.

Aeration tests progress a little slower, though trial runs at driving our air-pump with a water wheel are promising. We can push a small blower moving 20 cfm with the wheel adapted from a furnace blower, and we are refining techniques for air-stone placement for maximum effect in adjacent ponds prior to trenching in tubing to more remote growout ponds. A second wheel & blower 'power plant' will be installed at a second pond discharge cite, with each unit supplying aeration to different sections of the farm. See map.(2)

It is important to stress that these approaches to maintaining and even improving water quality in aquaculture ponds under heavier and heavier stocking loads have never been attempted and documented anywhere I could locate. We truly have been 'inventing the wheel' as regards low-input, low-tech systems for small fish farms. Much of the reason for the delays in this project relate to the lack of available and experienced technical and design assistance. The up-side of this is that with further use of these systems, inevitably further refinement and effectiveness will take place.