

To NOAA Aquaculture:

It is encouraging to see attention diverted from capture fisheries as the raw material for fish meal and oil, and placed on more sustainable alternatives.

For a quarter century I have worked to increase the usage of seafood processing waste in aquaculture feeds. I have worked in the northeast, the mid-Atlantic and -- most recently -- in Alaska.

Alaska is the most interesting for our shared purpose since it currently dumps about one billion pounds of seafood waste into the ocean each year. Most of this is high quality fresh material ideally suited for aquaculture feed. Why does it become garbage?

The three issues that keep it from the market, and that I believe need to be addressed, are not simple to resolve. They are processors' attitudes, seasonality and quantities of waste generated.

Processors' attitudes are straightforward. In most Alaskan ports, current EPA regulations permit each processor to grind and dump 10 million pounds per year into neighboring waters. This has only been interrupted when odor, foam and anoxia have become evident. Most Alaskan processors are working relatively short seasons and, during those seasons, they are flat out 24/7. They are too busy putting fires out in their primary business to want to take on a byproducts venture. Or, in some cases, they worry that if they stop dumping long enough to give byproducts a trial, they will lose their historical right to dump. Or, they believe that their short season guarantees that a byproducts plant will be unprofitable.

Seasonality adds to the processors' worries and also impacts the economics of capitalization of a plant. How many days must a meal plant work to be profitable? Is it possible to make money with a plant that operates only during the salmon season? At least in some communities, our answer has been yes, and our certainty has grown with the increasing price of meal and oil. But attitudes are hard to change.

Another issue has been that for many ports, the quantities of waste generated would not justify a standard meal plant, but are still sufficient to warrant capture. We don't know the tipping point where waste quantities are sufficient to become profitable (admittedly, a moving target).

I believe that there are solutions to all of these issues, but that a multi-year, multi-community project (or projects) is needed to find practical solutions that are acceptable to the communities involved. Given federal support, I believe that the first byproducts plant could be in place within two years, with others to follow, as processors and communities see that their fears are misplaced and that secondary products can be profitable. We need to make sure that the first plant is carefully supported and monitored, and the findings extended to

other communities. Alternatively, a containerized plant could be moved from one community to another. We need to work with engineering firms to find or develop smaller, simpler and more economical plants. We need to work with the EPA to make sure that the plants themselves do not create problems and that processors are not punished for stopping dumping.

Obviously, waste capture is not going to solve the total problem of finding high quality feed ingredients for aquaculture. But it can be one piece of that solution, and technologies developed in one place will be transferable to others.

Thank you.

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