bradan LIMITED

The complete biosecurity solution

Stress Mediation Advisory Leaflet No. 2

Applying Bradan Pro-Tex® and Bradan Padina™ as a Feed Supplement For Fish After Infectious Diseases

Bradan Pro-Tex®

Bradan Pro-Tex® is a pure food extract derived from the edible Mediterranean fruit the Barbary fig also known as the prickly pear, *Opuntia ficus indica* and formulated for use with farmed fish. It is available in liquid or powder form and contains the patented material TEX-OE™ which is registered by the EU as a traditional foodstuff. It can be used within the feed or the (drinking) water of farmed fish to help maintain the vitality of stocks when subjected to handling, vaccination, transport or other unsettling conditions. There is also a growing amount of field evidence of its benefits in relation to recovery from disease outbreaks. Bradan Pro-Tex® is certified by the Feeding-stuffs Manufacturers Association (FEMAS) for inclusion in animal feeds and produced under GMP conditions in Malta, where the material is harvested.

Bradan Padina™

Bradan Padina™ is a total extract of powdered fronds of *Padina pavonica*, the Mediterranean Peacocktail marine alga. It is registered as a traditional foodstuff for human consumption within the EU and approved by the Feeding-stuffs Manufacturers Association for inclusion in animal feeds. In the laboratory it enhances up-take of calcium in tissue culture and the production of collagen fibres. It has been shown to help maintain the vitality of poultry and fish crops under severe farming conditions. In poultry it is used to improve calcification of soft egg shells from young birds and improve leg weakness in layer hens and to limit spread of skin diseases.

In fish, it enhances growth rate and skin and fin quality. It has also been claimed by some users that when used after an initial feed of Bradan Pro-Tex® it will aid in the resolution of the longstanding ulcers associated with cold water ulcer disease and return fish to viability after Pancreas Disease outbreaks. (See reports from users)

Use as part of a Salmon Diet Supplement.

Since no medicinal claims are made for either product and both are registered with the EU and FEMAS as nutritional products, they can be used as organic components of salmon feed and mixed with the rest of the diet before feeding.
For on-farm use the supplied material is Pro-Tex® or Bradan Padina™ suspended in a fish oil. This requires to be diluted before use at rate of 200ml of Pro-Tex® or Pedina™ diluted with 2 litres of Fish Oil.

Inclusion rate for 20 tonnes of Fish.

Measure 200 ml of Pro-Tex® or Bradan Padina™. Mix with two litres of fish oil.
Mix this oil complex onto 350kg feed either by spraying or mixing by hand. Mix this with whatever further amount of feed is to be fed that day. It is important to mix thoroughly and a small cement mixer is often used to mix as this helps ensure every fish will get a dose. If necessary feed can be prepared at the same time for two applications of Pro-Tex® given on day one and day three/four.
This inclusion rate assumes fish are being fed at 1% per day. If giving less feed because of stress or lack of feed response, then simply mix the same amounts of treated feed with propotionately less ordinary feed.

Supplementation in Chronic Winter Ulcer Disease.

Based on field experience, it is not recommended that in Winter Ulcer Disease the food supplementation should begin immediately the condition is observed as it is not a medicine and this causes added cost with little benefit. Once the ulcers have settled and the lesions are obvious but not healing and the fish are not feeding properly, then feed supplementation has been shown to have often dramatic benefit.

Pro-Tex® should be fed, as above, on the first day of supplementation and on day three. From day four, Bradan Padina™ should be fed on a daily basis for two weeks. Feed level for Bradan Padina™ is similar to that for Pro-Tex®, but Bradan Padina™ which helps restore skin integrity and enhances appetite must be fed daily. It is considerably less expensive to manufacture than Pro-Tex® and thus can be fed over several weeks if necessary. By this time, some farmers in Shetland have suggested that the ulcers should have largely healed and the fish recovered appetite and started to grow. This is not however a claim by the manufacturers.

Letter from satisfied customer :

Scalloway
Shetland
8/11/2007

Michael Carmichael Esq.
Bradan Ltd,
Campbeltown,
Argyll,

Winter Ulcer Disease Trials with Pro-Tex® and Pedina.

Dear Michael,

As promised I am now reporting the results of the trial we did at North Atlantic Seafarms, on our zero sea winter salmon on the Scoreholm site, with the Pedina and Pro-Tex® that you kindly provided to us for trial purposes.

In January 2007 both the zero sea-winter fish (1.2kg) at Scoreholm and the one sea winter fish (3kg) at Papa were showing severe chronic ulceration associated with typical Winter Ulcer Disease. This is a problem we get regularly in winter and causes significant loss of growth and condition as well as some mortalities. Our water temperature was five degrees centigrade, the affected fish were feeding very poorly and the ulcers were not showing any sign of healing. In our experience, such fish, if they survive, do not come on to feed properly until temperatures rise significantly and the ulcers, even when they do heal, lead to the fish being downgraded. Thus if any way could be found to resolve the problem at an earlier stage I was very keen to try it.

Following the advice of Professor Ron Roberts, I agreed to a trial with the zero sea winter fish, at Scoreholm, using the larger fish at Papa, which had the same problem, as a control. I prepared a dose of 250ml of Pro-Tex® in oil at a dilution of 1:14 with fish oil and thoroughly mixed this volume in with the 500kg of feed I was feeding each day to the fish. As I indicated, these fish were feeding very poorly. Normally they would be taking three times this amount at least. This was fed for two successive days. The fish appeared to take it reasonably well on the first day and there was greater enthusiasm on the second.

By this time the supply of Pedina in oil had arrived and this was mixed, in the same way and fed daily thereafter for three weeks. Within a few days there was clear improvement in the condition and feeding activity of the fish. Feed intake increased to a more normal level for the time of year and the ulcers started to heal. By the end of the period of Pedina feeding the ulcers were largely healed, though black marks and lack of scales marked the site where they had been. There had been no change in the condition in the control fish at Papa.

In view of these very promising results, I decided that the Papa fish, which were larger fish and would require a higher feed level should also be given the supplemented feed. I still had some Pro-Tex® for the initial supplementation of the feed, but since it was not possible to obtain further trial quantities of the Pedina in oil, free of charge, I purchased a sufficient quantity for my fish. The results were similar. Within a couple of days of Pro-Tex® feeding they were beginning to improve in feeding and thereafter, with the Pedina supplementation, they healed their ulcers if anything more quickly than had been the case with the smaller fish.

I must admit to being somewhat cautious over instituting this regime in the beginning, but in view of the seriousness of the ulcers I felt there was little to lose in having a trial. The fact that the Pro-Tex® and Pedina are both certified organic was also important in the context of our own status. The results certainly well exceeded my expectations and I was more than willing to purchase the second quantity for my bigger fish, with the same outcome.

Yours Sincerely,

John Goodlad.

Pro-Tex® as a Stimulus to Recovery from Viral and Bacterial Diseases.

Heat Shock Proteins are known to help restore protein metabolism after a disease stress in all animals and are essential for building new tissues after viral and bacterial infections. Evidence from field observations on salmon and sea bass farms has shown that supplementing feed with Pro-Tex® can improve appetite, growth rate and general condition after IPN or PD virus infections in farmed salmon. Laboratory trials have also shown that such supplementation will also reduce following from Vibriosis in salmon and sea bass. Usually a single feed of Pro-Tex® will be effective for three or four days depending on temperature. For cost reasons, usually only two such feeds can be given but this will ensure enhanced Heat Shock Protein levels for up to 8 days and even such limited supplementation as this has been claimed to greatly improve such situations. (See customer endorsement below)

Satisfied customer report. The additive referred to was Pro-Tex®

To Bradan, Campbeltown, Argyll. By E-mail

"Would you kindly send me some info and prices for the additive you supplied me with last year for the problem smolts I had, which were suffering from IPN and bad PD at the time.
I was very pleased with the almost immediate recuperation of the damaged fish and they seem to have recovered and are now coming up to harvest weight.
We also put smolts into our other site here last November, the smolts were sourced from Dave Tierney at Yorkshire Salmon, and he gave the smolts a boost with your additive prior to the long road delivery up to Skerries. The fish did very well, showing no signs of distress and mortalities have been minimal.
I look forward to hearing from you and wish you well with the product.

Best Regards

John Weston
Bound Skerries Seafoods Ltd"