

## **SALMON: A RESOURCE THAT ADDS VALUE TO THE FISHING INDUSTRY**

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In the publication of June 2006 "Analysis of Public Policies" by Terram, with the title "Piranha-like Salmon: Conversion rate in the Chilean salmon farming industry", the authors show again erroneous figures and with it, they tendentiously get wrong conclusions with the clear purpose to discredit the national salmon farming industry and through it to all the fishing industry.

The study concludes that to produce 1 kilo of salmon, almost 10 kilos of wild fish are used. We (Exapesca) have participated with Terram Foundation in some meetings within the frame of "The Salmon Farming Dialogue" where we have shown, with our best good faith effort, the reality of the Chilean fishing industry and its relation with salmon farming.

I think it is necessary, once again, to insist that salmon farming adds value to pelagic fishing and that consumption of wild fish used to produce flour necessary for the feeding of salmon in Chile, is very far from the exposed by Terram.

Today, the average adding of fish flour to the industry is 30% and the average conversion factor of the industry is 1.35. This means that by each ton of salmon produced, the food consumption is 1,350 kilos and 405 kilos of fish flour are included in this food.

The production of 405 kilos of FF (fish flour) is obtained from 1,687 kilos of wild fish (mackerel). Therefore, if we consider only the gross weight ratio, to produce one kilo of salmon we must use only 1.7 Kilos of mackerel and not 10 kilos, as Terram states.

Now then, if we compare what indeed human beings eat, (without viscera, head and tail) the situation is as follows.

One ton of salmon produces approximately 850 kilos of HG and, on the other hand, 1,687 kilos of mackerel produce 843 kilos of mackerel HG. We could deduce from these figures that it is the same therefore to eat salmon or mackerel, since both produce the same amount of kilos available, but the price of salmon HG is at least 4 fold over the price of mackerel. Salmon, therefore, introduces an added value to mackerel that benefits the whole country.

If we compare the other preparations of Mackerel, 1,687 kg of mackerel produce 708 kg of canned products and 320 kilos of surimi. Doubtlessly, in these cases, by comparing the protein available, the best yield is obtained by providing salmon with flour.

The mentioned study also insists on calculating the amount of fishing to produce the oil necessary for food. That relation is false. Fishing is not for oil production, but for flour production. In fact, until some time ago, oil was burned as fuel. Today, 100% is used because an important destination was found in the concentrated food industry.

Another report conclusion is even more serious, because induces public opinion to have an idea on fishing management totally opposite to the reality, when stating that the increase in volumes of flour used in salmon farming introduces a pressure for increased fishing. Anywhere in the world, fishing is regulated by global capture quotas established according to the status of the resource biomass to be captured. In Chile, the state assigns the fishing quotas according to information that the IFOP and entities related to fishing research provide on all regulated resources. Neither national nor international institutions determine the fishing volume according to the product demand.

Finally, in the particular case of South Chile, whose main resource is mackerel, the situation with respect to the use of this fishing resource is the following, taking into account the behavior of 2005 according to official figures of the Subsecretariat for Fishing, National Fishing Service and Customs of Chile:

Disembarkation of Mackerel 1,195,000 t

Out of this capture, destinations were as follows:

Mackerel to Human Consumption	445,000 t	(37.2% of disembarkation)
Mackerel direct to flour	750,000 t	(77.32% of RM to flour)
Mackerel remains to flour	220,000 t	(22.68% of RM to flour)
Total of Mackerel RM to FF	970,000 t	
<b>Flour produced</b>	<b>230,000 t</b>	

Out of that flour, a 22.68% was produced with mackerel remains coming from use in products for human consumption (canned and frozen products), therefore, the alternative use for human consumption of mackerel used in flour production is only 77.32% of the flour. If 405 kilos of mackerel flour are used to obtain 1,000 kilos of salmon and of those 405 kilos, 22.68% was already used for human consumption, 92 kilos of flour come from remains. The calculation on the “wasted” total is over the 313 remaining kilos of flour, which means only 1,252 kilos of mackerel or 626 kilos of mackerel HG and that they are compared with the 850 kilos of salmon HG (what is doubtlessly lower); therefore the “indifference” to use mackerel for human consumption or as flour for salmon, disappears. If we calculate the “whole” fishing used to produce one ton of Salmon, we now find just 1,252 kilos of mackerel, or what is the same, to produce one kilo of salmon, 1.25 kilos of mackerel are used. This is the figure that we should compare with the almost 10 kilos that the Terram report presents.

The tendency in South Chile is to increase products for human consumption from mackerel, therefore every year it will be more advisable to use flour to feed salmons, because the share of “whole” fish will be lower and lower in flour production, making the final ratio, kilo of salmon over kilo of mackerel, equal to or lower than one. We are certain, unlike that Terram publishes, that in the near future the use of fish flours coming from product remains of human consumption will be increased, and the circuit of marine raw materials for the use in aquaculture will be therefore optimal and more efficient.

With respect to the use of anchovy and common sardine for feeding salmons, we think that it is not worth to make any calculation. Today the world almost does not consume anchovy and common sardine. That enormous protein availability would be lost whether it is not used as flour for animal feeding. This is the main mistake of Terram when saying that the flour production fails to take advantage of fishing resources; on the contrary, they are used in the best way. The world does not eat what NGOs would like it to eat; luckily mankind even can select and choose what please them to eat. Today we can get, through fish flour resources rejected for human feeding, long desired products such as farmed salmon. We hope that this sector continues to grow and other high sale price species be added to the national aquaculture activity, so that the use of national fish flour continues and increases, as well as the present value chain.

Today, just a third of the national fish flour production is consumed in Chile. Therefore, the aquaculture industry can be sure that it will be supplied with this key material for many years ahead.