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# **Brazil survey: Animal welfare perspectives vary between producers, researchers**

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**Humane slaughter is correlated with animal welfare, in that its goal is to reduce or eliminate distress and suffering**



Most respondents said that animal welfare involves elements beyond “distress.”

The concept of “animal welfare” is built by diverse players in the fish-farming production chain who are intertwined in an extensive network of actions, ideas, devices, laws, people and animals. There is no unambiguous definition of animal welfare.

The social perception of welfare or suffering of a certain animal species cannot be easily separated from a supposed “empirical” animal welfare. The authors performed a study to identify how different groups (producers and researchers) within the production chain of Brazilian aquaculture described and evaluated the concept of animal welfare applied to fish production.

## Study setup

The study used a questionnaire to determine how the animal welfare concept and, in particular, how fish slaughtering methods were understood by different players involved in fish production. The questionnaire was administered to participants at the July 2013 VI Health Course in Fish Farming held at the Aquaculture Center of the University of São Paulo in Jaboticabal, São Paulo, Brazil.

A total of 83 completed questionnaires were received. Participants were classified by occupation into two groups: producers and researchers. Composed of fish farmers, fingerling breeders, processors and suppliers, the producers group was more heterogeneous. The group of researchers was more homogeneous, consisting primarily of graduate students.

## Results and discussion

The survey results are summarized in several tables below. Table 1 summarizes the occupation distribution of the participants. The survey sought to determine the level of knowledge the respondents had about animal welfare in sectors other than fish farming. Table 2 shows the responses obtained.

### Eduardo, Participants’ main occupations, Table 1

Aquaculture Sector	Number	Percentage
Commercial production	32	38.6
Production supplies	25	30.1
Research	24	28.9
Undefined	2	2.4
Total	83	100.0

Table 1. Participants’ main occupations in relation to fish farming.

### Eduardo, Knowledge about animal welfare, Table 2

Knowledge Level	Number	Percentage
Weak	15	18.1
Reasonable	46	55.4
Strong	22	26.5
Total	83	100.0

Table 2. Knowledge about animal welfare.

Since fish do not express reactions to pain or distress in the same manner as terrestrial mammals, which mainly emit sounds, interviewees were asked if fish are capable of feeling pain. Responses are recorded in Table 3.

### Eduardo, Opinions about fish sensitivity, Table 3

Opinion	Number	Percentage
No	5	6.0
Yes	76	91.6
No response	2	2.4
Total	83	100.0

Table 3. Opinions about fish sensitivity.

Table 4 summarizes opinions on the slaughter methods used in fish farming. Table 5 shows the opinions expressed regarding why animal welfare practices should be applied in fish farming.

Eduardo, Perceptions about slaughter methods, Table 4

Slaughter Method	Very Cruel Number	Very Cruel Percentage	Cruel Number	Cruel Percentage	Less Cruel Number	Less Cruel Percentage
Thermal shock	1	1.2	6	7.2	46	55.4
Exsanguination	10	12.0	22	26.5	4	4.8
Percussive stunning	22	26.5	17	20.5	10	12.0
Electrical stunning	13	5.7	11	13.3	13	15.7
Removal from water	28	33.7	18	21.7	1	1.2
No response	9	10.8	9	10.8	9	10.8
Total	83	100.0	83	100.0	83	100.0

Table 4. Perceptions about slaughter methods.

Question: How do you perceive slaughter methods based on the level of cruelty to the fish?

Eduardo, Reasons to apply animal welfare, Table 5

Reason	More Important Number	More Important Percentage	Important Number	Important Percentage	Less Important Number	Less Important Percentage
To benefit final consumers	6	7.2	9	10.8	15	21.4
Meat quality	22	26.5	27	32.5	5	6.0
Fish mortality	17	20.5	13	15.7	5	6.0

Ethics	9	10.8	10	12.0	18	21.7
Animal rights	19	22.9	9	10.8	2	2.4
Laws prohibit mistreatment	2	2.4	4	4.8	25	30.1
No response	8	9.6	11	13.3	13	15.7
Total	83	100.0	83	100.0	83	100.0

Table 5. Reasons to apply animal welfare concepts in fish farming.

Question: Why should animal welfare be applied in fish farming?

Some convergence was noted between the producers' and researchers' responses on the following points:

- The least important reason to adopt animal welfare practices in fish farming is the animal mistreatment prohibition law.
- Fish are capable of feeling pain, cold, fear and hunger.
- Animal welfare involves elements beyond "distress." But the percentage of producers that identified well-being as absence of distress (19.4 percent) was higher than the respective percentage of researchers, 4.2 percent, who identified distress in that manner.
- The least cruel slaughter method is thermal shock: placing fish in a mixture of water and ice.

Survey participants indicated that, in general, Brazil's fish farming industry is applying animal welfare principles to some degree (Table 6). However, there were significant differences of opinion between producers and researchers on several important aspects of humane slaughter and animal welfare.

## Eduardo, Overall perceptions, Table 6

Element of Welfare		Number	Percentage
Hunger, thirst, malnutrition	Is not being applied	11	13.3
Hunger, thirst, malnutrition	Is being applied but can improve	36	43.4
Hunger, thirst, malnutrition	Is being applied	28	33.7
Hunger, thirst, malnutrition	Did not respond	8	9.6
Pain, injury, disease	Is not being applied	11	13.3
Pain, injury, disease	Is being applied but can improve	54	65.1
Pain, injury, disease	Is being applied	9	10.8
Pain, injury, disease	Did not respond	74	89.2
Discomfort	Is not being applied	28	33.7
Discomfort	Is being applied but can improve	47	56.6
Discomfort	Is being applied	0	0

Discomfort	Did not respond	8	9.6
Expression of normal behavior	Is not being applied	36	43.4
Expression of normal behavior	Is being applied but can improve	34	41.0
Expression of normal behavior	Is being applied	3	3.6
Expression of normal behavior	Did not respond	10	12.0
Fear and distress	Is not being applied	32	38.6
Fear and distress	Is being applied but can improve	39	47.0
Fear and distress	Is being applied	1	1.2
Fear and distress	Did not respond	11	13.3

Table 6. Overall perceptions regarding the main elements of fish welfare.

The two groups' responses regarding the minimum time required to carry out fish filleting after the initiation of thermal shock diverged. Researchers recommended 19 minutes, on average, and producers supported 13 minutes.

Regarding the freedom from discomfort, producers assess the current situation of Brazilian fish farms less unfavorably than researchers do.

In evaluating the slaughter method that consists of bleeding fish by cutting the gills, 9 percent of the researchers classified it as very cruel, while 21 percent of the producers found it a cruel slaughter method. About 28 percent of producers and only 8 percent of the researchers considered subjecting fish to an electrical discharge for slaughter very cruel.

When asked the main reason animal welfare is important in fish farming, 36.7 percent of producers said the quality of meat obtained is better when animals are treated well. For researchers, the main reason was that animals have the right not to suffer (42.9 percent).

## Perspectives

There were some agreements and disagreements between the two groups of respondents regarding fish welfare. However, even when there was general agreement about certain aspects of the animal welfare concept, some internal differences regarding their level of importance persisted within each group.

This was likely a case of relating "animal distress" with "animal welfare," and can not be explained on the basis of significantly different technical knowledge between the groups' members.

It seems more plausible to assume that the different ideas on what fish welfare is or the most humane slaughtering method could be explained by the introduction of the sociological concept of "representation," in which "animal welfare" is, among other things, a symbolic linguistic construction that involves a variety of players.

Humane slaughter is correlated with animal welfare, in that its goal is to reduce or eliminate distress and suffering. For fish, in particular, this correlation is mediated by the representations that people involved in fish-farming activities make for themselves about these animals' sensitivity to suffering.

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