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GM salmon can breed with wild fish and pass on genes

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The potential risks of genetically modified fish escaping into the wild have been highlighted in a new study.

Scientists from Canada have found that transgenic Atlantic salmon can cross-breed with a closely related species - the brown trout.

The fish, which have been engineered with extra genes to make them grow more quickly, pass on this trait to the hybrid offspring.

The research **is published the Proceedings of the Royal Society B.**.

However, the biotech company AquaBounty, which created the salmon, said any risks were negligible as the fish they were producing were all female, sterile and would be kept in tanks on land.

The transgenic salmon are currently being assessed by the US authorities, and could be the first GM animals to be approved for human consumption.

Salmon-trout hybrids

In the wild, Atlantic salmon very occasionally mate with the brown trout, successfully producing offspring.

But the researchers found that in the laboratory, the genetically modified salmon could do the same. Of the 363 fish analysed at the start of the experiment, about 40% of the hybrids carried the modified genes.

The researchers found that these young fish developed extremely quickly.

Dr Darek Moreau, from the Memorial University of Newfoundland, Canada, said: "[Under hatchery conditions] the transgenic hybrids grew faster than the wild salmon, wild trout and wild-type hybrids. The GM hybrids also outgrew the GM salmon."

When the fish were placed in a mocked-up stream inside the laboratory, the researchers found that the hybrids were out-competing both the genetically modified salmon and wild salmon, significantly stunting their growth.

"This was likely a result of competition for limited food resources," explained Dr Moreau.

The researchers said this study highlighted the ecological consequences should genetically modified fish get into the wild.

They acknowledged that the risks of such an escape and subsequent encounter with a brown trout were low, but said this information should still be taken into account by those who are regulating GM animals.

Ron Stotish, CEO of AquaBounty Technologies Inc, said: "It is worth noting that in 1995, Peter Galbreath and Gary Thorgaard of

Washington State University published research that the Atlantic salmon-brown trout hybrid is sterile. If this holds true, such a hybrid would pose little ecological threat as the fish would not reproduce.

"Moreover, AquaBounty has stipulated that we will market only sterile, all female AquAdvantage salmon - with specific tests being performed on every commercial batch of fish to assure our product meets our specifications."

He added: "Overall, the study seems to present no new evidence for any added environmental risk associated with the AquAdvantage salmon."

The US Food and Drug Administration is currently in the final stages of considering whether the transgenic salmon can go on sale.

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