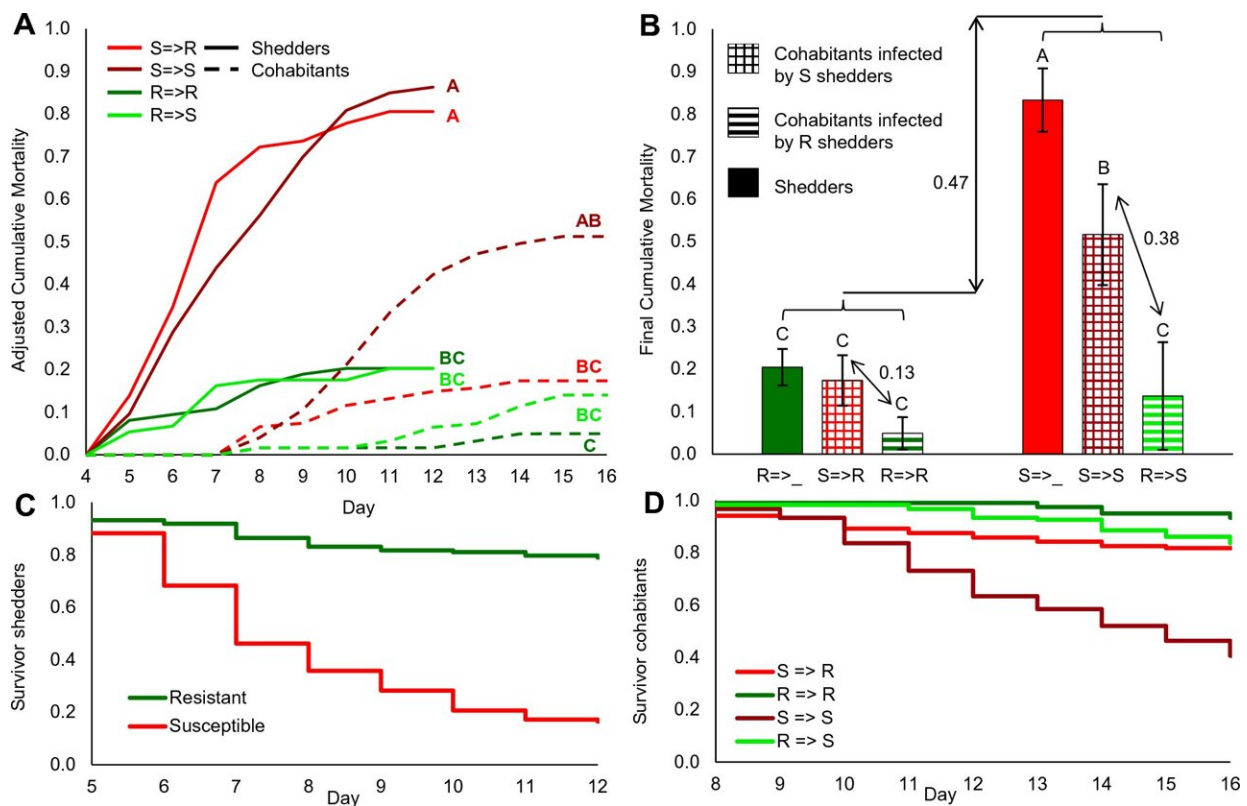


Disease-resistant strains of carp provide advancements in aquaculture, enhance gefilte fish quality

April 17 2024



Cumulative mortality of experimental groups. (A) Mean cumulative mortality by days (adjusted to start day) for shedders (full lines) and cohabitants (dashed lines). (B) Final mean cumulative mortalities and standard errors for resistant (left bars) and susceptible (right bars) categories. Survival analysis for (C) shedders, right censored to day 12 and (D) cohabitants, right censored to day 16. Credit: *Scientific Reports* (2024). DOI: 10.1038/s41598-024-55133-2

A new study led by Prof. Lior David from the Faculty of Agriculture at the Hebrew University investigated the infectivity of disease-resistant and susceptible fish by examining their roles as shedders (infecting) and cohabitants (infected) in various combinations. The study focused on common carp; a species that's commonly cultivated in aquaculture.

Infectious diseases pose significant challenges to the health and welfare of both humans and animals. While breeding genetically resistant animals is a sustainable solution for healthy food production, providing unique research opportunities, the relationship between resistance and infectivity remains poorly understood.

The study revealed that fish resistant to the virus exhibited lower viral loads in their spleens and demonstrated higher survival rates compared to susceptible fish. Susceptible fish infected by resistant counterparts experienced reduced [mortality rates](#) compared to those infected by other susceptible fish. Additionally, tanks housing resistant fish exhibited decreased viral levels in the water, leading to lower infection of other fish within the tank.

The [research paper](#), titled "Disease resistance and infectivity of virus susceptible and resistant common carp strains," is published in *Scientific Reports*.

Prof. Lior David, the lead researcher of the study, commented, "The study provides experimental evidence that resistance to cyprinid herpes virus type 3 reduces infectivity due to a host mechanism that restricts [viral replication](#) and pathogen shedding. This not only benefits aquaculture production but also contributes to reducing virus propagation and disease spread in natural water bodies."

These results demonstrate that disease-resistant fish not only survive better but also reduce the infection rate in others. This has significant

implications for aquaculture production and disease epidemiology. The study highlights the importance of breeding disease-resistant animals for sustainable food production and [animal welfare](#).

More information: Batya Dorfman et al, Disease resistance and infectivity of virus susceptible and resistant common carp strains, *Scientific Reports* (2024). [DOI: 10.1038/s41598-024-55133-2](https://doi.org/10.1038/s41598-024-55133-2)

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