



Dr. Fatma Kaplan

CEO & Co-Founder of Pheronym

"...it's not always difficult, you have a lot of headwinds along the way. It will go away, it's not going to be forever so don't be discouraged from the setbacks."

Advice from Dr. Kaplan

Fatma Kaplan knows a lot about worms — specifically, Dr. Kaplan is an expert in nematodes. With a background in agricultural engineering, and a PhD from the University of Florida in plant molecular and cellular biology, Dr. Kaplan specializes in nematodes of agricultural significance. What are agriculturally significant nematodes and why does Dr. Kaplan care about them? One kind of agriculturally significant nematode is plant-parasitic nematodes. These are harmful parasites that infect and kill crops. Alternatively, other agriculturally significant nematodes are beneficial to the plant. For example, beneficial nematodes are nematodes that infect and kill pests that harm crops. The ability to control these plant-parasitic and beneficial nematodes has the potential to directly improve crop yield. This is where Dr. Kaplan's extensive knowledge of nematode

pheromones comes into play. Pheromones are chemicals released by one individual that affect the behavior of other individuals of the same species. Pheromones can affect various social behaviors, such as mating and dispersal. Historically, the use of pheromones to trap insect pests has been widely successful, ranging from pantry moths to garden beetles.

Dr. Kaplan understands that nematode pheromones can unlock a new world of natural pest control agents. While doing her postdoctoral research, Dr. Kaplan identified the first nematode sex pheromone in the nematode *C. elegans*. After publishing these findings in *Nature*, Dr. Kaplan worked with the USDA to identify a pheromone that might control the root-knot nematode, a plant-parasitic nematode. Dr. Kaplan began to develop ideas for the company Pheronym in 2015, which she co-founded in 2017.

As the CEO of Pheronym, Dr. Kaplan has developed two nematode pheromone technologies — Nemastim and Pherocoat. Nemastim triggers the activity of beneficial nematodes to increase their host infection rates. Alternatively, Pherocoat tricks plant-parasitic nematodes by falsely signalling that a healthy plant root is already infected, which prevents further nematode infection. In 2017, when Dr. Kaplan dedicated herself full-time to Pheronym, she didn't achieve immediate success in convincing investors and stakeholders of the genius of Pheronym.

It was not until 2021 that Pheronym truly began to receive due notice. As a woman and an immigrant, Dr. Kaplan has faced a few extra challenges in her career as a scientist and entrepreneur. Dr. Kaplan notes that it took many years of living in the U.S. for her to notice the instances of sexism and xenophobia in the workplace. However, now that she is aware of this discrimination, she is prepared with the tools she needs to combat it.

As Dr. Kaplan recalls her childhood and early education in Turkey, she highlights that the Turkish government, after the fall of the Ottoman Empire, was motivated to involve the full population of Turkey in the growth of the nation, not just the men. In Turkey, women were viewed as necessary to and capable of building the young country. This meant that as students, Dr. Kaplan and her female peers were well-supported by their families and teachers. Dr. Kaplan also recognizes that as a young student she had many role-models to look up to. At the time, the Turkish Prime Minister's daughter was an accomplished pilot! Dr. Kaplan believes in the power of role models and supporters. When asked what her advice to all young scientists, developers, and entrepreneurs would be, Dr. Kaplan says to remember that the path to achieving your goals is not always an easy one, and it is important to make sure that you are supported and surrounded by people who champion your work. Always make sure to hold on to those teachers and role models that believe in you, even when the going gets tough.

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