

# With plant extracts, preventing antibiotic resistance in farm animals

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The Mexican company Grupo Nutec manufactured a new product,

Plofora, based on plant extracts. It replaces antibiotics for farm animals in order to naturally activate specific genes that strengthen animals' immune systems and simultaneously prevents bacteria from developing resistance to drugs.

When animals consume [antibiotics](#) as growth promoters (metabolites of bacteria or fungi), people who eat their meat also ingest the drugs. This situation, with the passage of time, led the bacteria Escherichia coli, Klebsiella pneumoniae and Staphylococcus aureus to show greater resistance to medical antibiotic interventions, even with the use of other drugs.

Proflora prevents development of resistance to medical antibiotics, replacing them with a mixture of oleoresins (resin and oil) with herbal extracts and phytobiotics, which activate key genes associated with the [immune system](#) in animals, says engineer Rodrigo Garcia Ortega, assistant of research and special product innovation at Nutec group.

The company aimed for immunity and gut health through modulation of the intestinal flora to inhibit the proliferation of tumor cells and strengthen the immune system to fight viral and digestive diseases in [farm animals](#) including chickens, hens and pigs.

The Proflora product is sold in bags of 20 kilos. The most frequent customers are farms and food industries throughout Mexico. According to the annual business report, in 2014 the company sold more than 500 tons.

Oleoresins administered with food have an immunomodulatory effect, which increases the ability of the immune system to exercise one or more of its functions, including the production of antibodies, antigen recognition, or the secretion of inflammatory mediators.

With the creation of specific antibodies, it is possible to regulate diseases like influenza in birds, which involves an inflammatory process, and can be eliminated by strengthening the immune system.

"By obtaining a powder, we can ration the amount of product between 20 and one hundred grams of the product in a ton of food. Natural extracts such as cinnamon, chili, ginger, turmeric, anise and cloves are sensitive to oxygen and pH, so by having it encapsulated the product is better protected."

Moreover, the short-term plan for the company is to finalize research to detect the effect of the product on gene expression in [immune cells](#) and observe the changes at the level of genes. This requires a partnership with the Institute of Biotechnology of the National University of Mexico (UNAM) in Cuernavaca, located south of Mexico City.

Provided by Investigación y Desarrollo

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