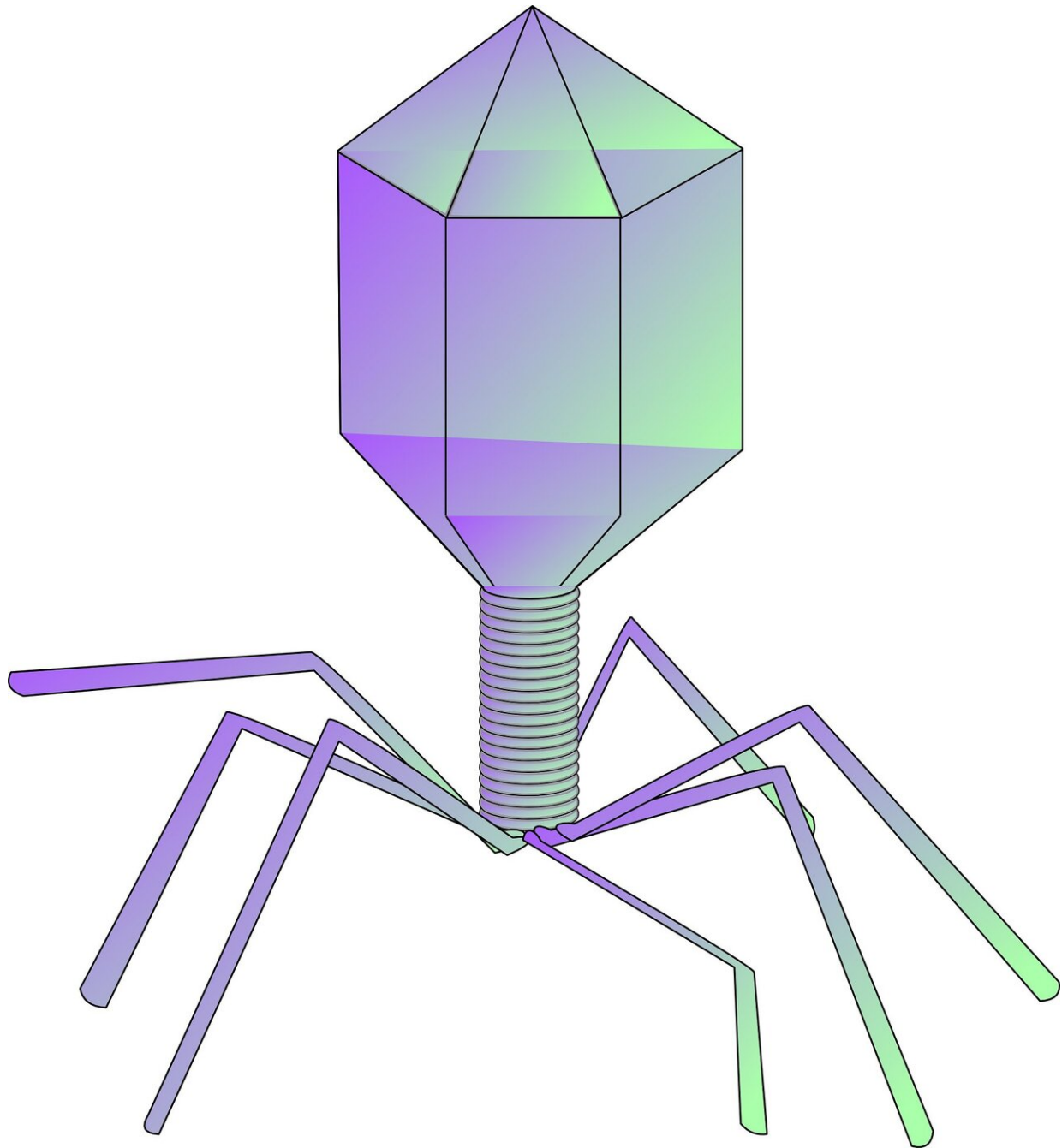


# Fighting antibiotic resistance with phages

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Farmers around the world rely on antibiotics to keep livestock healthy, but increased bacterial resistance has created problems for both animals and humans. Instead of expensive new drugs, scientists have found a potential affordable solution that comes from nature. A new article in *Chemical & Engineering News*, the weekly newsmagazine of the American Chemical Society, details how bacteriophages could be a boon to farmers, especially those in resource-limited nations.

Bacteriophages—or just phages—are tiny viruses that are one of the most common biological entities on Earth. Although they have been used to treat bacterial infections in the past, the much more liberal use of antibiotic drugs has resulted in increased resistance, writes Associate Editor Manny I. Fox Morone. Experts believe that using phages in livestock and farming could help combat this resistance and be more cost-effective, particularly in places that do not have access to the newest drugs. In addition, over-use is much less of an issue with phages because they peter out when their target bacteria are no longer present.

Unlike antibiotics, which require millions of dollars in research and development to bring to market, phages grow wherever bacteria are found. This has led experts to forage for phages in hopes of building a regional library of the tiny viruses that can kill specific bacteria. However, one advantage antibiotics have is that they are shelf stable, whereas some phages become inactive at room temperature without bacteria to feed on. This has led researchers to pursue methods of preserving phages without cold storage, including spray-drying, encapsulating phages using nanoparticles and integrating them into livestock feed. Experts are also working with farmers to determine how

to implement phages into their processes, with the hope that it will make a difference in health outcomes for all species.

**More information:** Full article: [cenm.ag/phages](https://cenm.ag/phages)

Provided by American Chemical Society

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