How Plants Are Resisting Radiation and Cancer in Chernobyl

Fans of HBO's "Chernobyl," take note.

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Although the nuclear disaster in Chernobyl that caused thousands of cancers and radiation-related deaths took place more than three decades ago, the catastrophe is part of the zeitgeist again—thanks to HBO's hit series Chernobyl.

The disaster, which resulted in mass evacuation and the establishment of a 2,600-square-kilometer exclusion zone, rendered large swaths of land uninhabitable to human and animal life. But plant life, according to Chernobyl researchers, is doing just fine. A recent report in The Conversation explains how it is that plants can withstand such a disaster.

In the immediate aftermath of the nuclear meltdown, scientists in the area reported that all but the most vulnerable and exposed plant life never died in the first place. Even in the most radioactive areas of the zone, vegetation was seen recovering within three years. Meanwhile, humans and animals exposed to Chernobyl's radiation suffered generations of cancer and genetic issues. Although wolves, boars and bears have returned to the forests surrounding the power station, by far, plants have fared the best. But why?

First one must understand how such radiation affects living cells. Researchers say radiation in Chernobyl is "unstable" because it constantly fires out high-energy particles and waves that can smash cellular structures or produce reactive chemicals that attack the machinery of cells. High doses of such radiation can damage DNA, causing cells to die quickly; lower doses may cause cell mutations that cause cancer.

The cells and systems of animals are rigid, serving specific unchanging functions; as a result these mutations often prove fatal. Plants, on the other hand, adapt, changing their physical and chemical structures to best suit their environment. Plants are also capable of creating whatever type of cells they need to survive, explains The Conversation. This means that when they are exposed to environmental stressors like radiation, plants can replace dead cells much more quickly than animals.

That said, radiation and DNA damage can cause tumors in plants, but in plants, these don't spread to the rest of the plant. Tumors are also not often fatal to plants because they adapt to work

around malfunctioning tissue. Chernobyl scientists also say some plants in the exclusion zone are changing their chemistry to make their DNA more resistant to damage.

The result? Without humans around, plant species are actually greater in number than they were before the disaster. Animal species are also returning. The nuclear disaster is now home to what may be considered one of Europe’s largest nature preserves.
