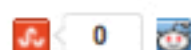
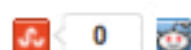


Christmas Trees Haven't Changed Much Over The Past 100 Million Years

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Lee Rannals for redOrbit.com – Your Universe Online

Researchers wrote in the journal [BMC Biology](#) that the genome of conifers like spruce, pine, and fir have essentially remained the same for the past 100 million years.

The team analyzed the [genome](#) of conifers and compared it to that of flowering plants. Both plant groups stem from the same ancestor, but diverged about 300 million years ago.

They compared the genome macrostructure for 157 gene families present both in conifers and flowering plants. The team then observed that the genome of conifers remained stable for at least 100 million years, while that of flowering plants has undergone major changes in the same period.

"That doesn't mean there haven't been smaller scale modifications such as genetic mutations," Jean Bousquet, professor from the Université Laval [Faculty of Forestry, Geography, and Geomatics](#), said in a statement. "However, the macrostructure of the conifer genome has been remarkably stable over the ages."

The researchers said this stability goes hand in hand with the low speciation rate of conifers. Currently, there are just 600 species of conifers, but there are over 400,000 species of flowering plants.

"Conifers appear to have achieved a balance with their environment very early," Bousquet said in the statement. "Still today, without artifice, these plants thrive over much of the globe, particularly in cold climates. In contrast, flowering plants are under intense evolutionary pressure as they battle for survival and reproduction."

So far, the project has captured most of the estimated 35,000 to 40,000 genes in the single white spruce tree DNA taken, compared to the 23,000 genes people have. This tree's genome is larger than a human's because it contains an abundance of non-gene DNA with no function.

Par Ingvarsson of [Umea University](#) in Sweden [told Fox News](#) that they need conifer genomes to fill the final piece, helping scientists find how all the plant kingdom has evolved over the past billion years.

Understanding the DNA of conifers could help reveal genetic secrets that could be used in breeding and forest management.

John MacKay of the University of Laval in Quebec City told Fox genomes can help speed up the process for breeders, and can help them do a better job of selecting trees. Simply put, understanding genomes leads to a better Christmas tree.

According to the report by Fox, forest managers select trees to plant after a fire or tree harvesting. The conifer genome information could help them pick varieties that can adapt to climate trends better.

The researchers concluded their findings help explain the resemblance between today's conifers, and fossils dating back to the days when dinosaurs roamed the Earth.