

# The genetic transformation of a plant. Step by step. Gene by gene.

A genetically modified (GM) plant is the result of the combination of a gene for a desirable trait into the genome (genetic structure) of the host plant to achieve results such as higher yield and resistance to pests, diseases and adverse climatic conditions.

1

Analyses and tests are used to identify the trait gene. This gene is isolated and transferred to a bacteria, which is naturally capable of injecting DNA into a plant cell.



2

In the laboratory, the bacteria is used to transfer the gene into the host plant's cells. This allows the new gene to be incorporated into the DNA of some of the host's cells.



3

The cells of the host plant that contain the new gene reproduce and form tissues, ultimately generating a GM plant.



4

This new GM plant differs from the original host only by the new trait.



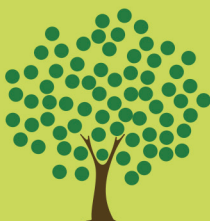
5

This new plant is transferred to a greenhouse where it is propagated. The entire process is monitored until the completion of all tests and field trials.



6

Once biosafety studies have been conducted and results demonstrate the safety of the GM plant, the data is submitted to the regulatory authorities for evaluation and commercial approval.



At FuturaGene, we introduced a gene from a plant called *Arabidopsis thaliana* into a eucalyptus clone aiming at increasing productivity. After more than ten years of laboratory and field research, we have developed yield enhanced trees that produce more wood per unit area, which can result in several economic, social and environmental benefits.

