

Peanut Blog

An ounce of information



Scientists Use CRISPR to Develop Fragrant Peanuts

Scientists from the Henan Academy of Agricultural Sciences and partners in China used CRISPR-Cas9 gene editing to create fragrant peanuts for the first time.

They targeted two genes, AhBADH1 and AhBADH2, which normally prevent the production of 2-acetyl-1-pyrroline (2-AP), the compound responsible for the strong aroma of rice. By knocking out these genes in peanuts, they successfully produced lines with significantly higher levels of 2-AP and a strong aroma. This was achieved by creating mutations in all four copies of the AhBADH1 and AhBADH2 genes.

The fragrant peanut lines not only had the desired aroma but also exhibited other favorable traits. They had a darker seed coat color and significantly higher oil content compared to regular peanuts. While other agronomic traits like yield remained similar, the changes in oil content and seed color suggest that these genes might play a role in other aspects of peanut development.

Further analysis confirmed the successful gene edits and showed no unintended off-target effects, paving the way for the development of new fragrant peanut varieties.

Source: <https://www.isaaa.org/kc/cropbiotechupdate/ged/article/default.asp?ID=21228>