

Peanut Blog

An ounce of information



China's High-Oil Peanuts: Breeding Breakthroughs and Challenges

Distribution and Genealogy of High Oil Peanuts in China.

A comprehensive study of 238 high-oil peanut varieties in China reveals key insights into their agronomic traits, disease resistance, and genetic diversity. While these varieties show promising oil content (up to 61%), they face challenges such as a trade-off between oil and protein content and limited high-level disease resistance. The findings provide a foundation for future breeding strategies to enhance yield, quality, and resilience. Peanuts are an important global oilseed crop, with China leading in production and consumption. High-oil peanut varieties, containing over 55% oil, offer notable economic and nutritional benefits. Against this backdrop, in a new study published in *Reproduction and Breeding*, a team of researchers analyzed 238 such varieties across China, evaluating their agronomic performance, disease resistance, and genetic background.

"We found a notable trade-off: higher oil content often means lower protein levels, posing a challenge for breeders aiming to improve both traits simultaneously," shares corresponding author Prof. Dr. Dongmei Yin from Henan Agricultural University. "Additionally, while many varieties showed resistance to major diseases like leaf spot, bacterial wilt, and rust, few exhibited high-level resistance." Meanwhile, six varieties demonstrated broad resistance to five common diseases. The high-oil varieties thrive best in specific regions of China, particularly Northern, Eastern, and Central China, as these areas provide ideal growing conditions with longer seasons, distinct seasonal changes, and nutrient-rich, well-draining soils that promote oil accumulation in peanuts. "We've found that local cultivation practices and generations of genetic adaptation have created varieties specifically suited to these regions' unique environments," says Yin.

Key parent varieties, such as Kaixuan 016 and CTWE, which have been instrumental in developing these high-oil traits were also identified. These varieties have developed novel germplasm with both high oil content and strong heritability, which has enabled the release of these superior varieties, including Luohua 21 (61.04%), Luohua 9 (58.33%), Luohua 15 (57.30%), Luohua 19 (56.50%), Luohua 1 (56.45%), Luohua 4011 (56.20%), Luohua 11 (55.70%), and Nongdahua 206 (55.60%). "However, expanding genetic diversity through wild relatives and modern molecular techniques will be essential to overcome current limitations," adds Yin.

Source: <https://www.thehindubusinessline.com/news/china-s-high-oil-peanuts-breeding-breakthroughs-and-challenges-som/economy/agri-business/indian-govt-approves-pulses-oilseeds-procurement-at-support-prices-in-gujarat-and-up/article70085095.ece>