

## 2.2 Breeding institutions and scientific basis of Zhongzu 100

The institutional background of Zhongzu 100 is worth noting because it reflects a well-established but still highly relevant model in Chinese crop improvement: collaboration between a research institute with breeding capacity and a local seed enterprise with multiplication and extension strength. The company dossier identifies the applicants and breeders as Longyou Wuguxiang Seed Industry Co., Ltd. and the China National Rice Research Institute, with named breeders including Zhan Yousong, Ji Zhijuan, Yang Changdeng, Zeng Yuxiang, and Liang Yan. This pairing gives the variety a distinctly applied character. It was not generated in a purely academic breeding program detached from commercialization, nor was it only an enterprise selection effort without scientific backing. It sits in the middle, where breeding, registration, multiplication, and promotion can be linked more directly (Figure 1).

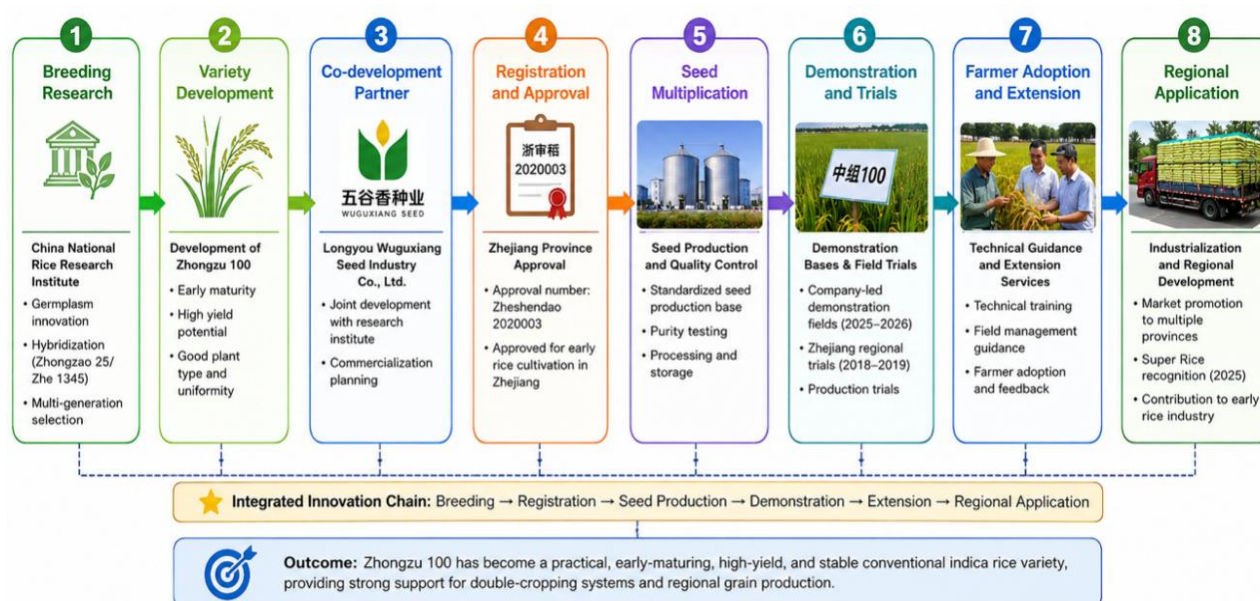


Figure 1 Breeding, registration, and extension pathway of Zhongzu 100

Scientifically, the dossier makes clear that Zhongzu 100 was derived through conventional hybridization and selection, not transgenic or genome-editing approaches. That point matters for how the variety should be positioned. In a journal such as *Genomics and Applied Biology*, the word “genomics” can tempt authors to overstate molecular depth even when the available evidence does not warrant it. In the case of Zhongzu 100, the sounder description is simpler: this is a conventionally bred early indica variety whose value comes from trait integration as demonstrated in provincial testing and practical seed-industry use. The scientific basis is therefore classical breeding-parental recombination, multi-stage selection, and official agronomic validation—rather than a genomics-heavy pedigree dissection (Chen et al., 2019).

This public–private cooperation model also has wider significance. In seed-industry terms, a variety becomes influential not only when it is agronomically good, but when the institutions behind it can produce enough seed, maintain quality control, and organize effective extension. The company dossier emphasizes that Wuguxiang has a stable seed-production base, storage and processing infrastructure, standard testing facilities, and sales channels extending to multiple provinces. That does not prove the variety is universally superior, but it does mean Zhongzu 100 entered the market with a stronger commercialization platform than many good varieties that remain trapped at the registration stage.

## 2.3 Parentage and breeding process of Zhongzu 100

The official dossier records the pedigree of Zhongzu 100 as Zhongzao 25/Zhe 1345. This is the one fully traceable parentage statement currently available in the supplied materials, and it should be treated as the starting point for any discussion of breeding origin. What the dossier does not provide is a detailed breakdown of the parental traits or the generation-by-generation selection process. That gap is important. It means the paper can accurately