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• **Transformation:** Rice plants were transformed using Agrobacterium-mediated or particle bombardment methods to introduce the resistance genes.

• **Selection and testing:** Transgenic plants were selected using appropriate markers and tested for disease resistance in controlled and eld conditions.

• **Field trials:** Transgenic rice lines with promising disease resistance were grown in eld trials to evaluate their performance under natural conditions. Data on disease incidence, yield, and agronomic traits were collected and analyzed.

• Data analysis: Statistical analysis was performed to assess the