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Molecular characterization and efficacy evaluation of a transgenic corn event for insect resistance and glyphosate tolerance

Key words: Transgenic maize, *Bacillus thuringiensis* (Bt), Insect resistance, Glyphosate tolerance

Research Summary

ZD12-6 is an insect-resistant and glyphosate-tolerant transgenic corn event developed by China locally to be potentially released commercially in the near future. This study characterized and evaluated this event by the following aspects:

- PCR and Southern blot analysis of ZD12-6
- Determination of the T-DNA insertion site
- Expression analysis of transgenes
- Insect-resistance of ZD12-6
- Glyphosate-tolerance evaluation

Result and Conclusion

ZD12-6 is a single copy T-DNA insert event and its T-DNA is stably inherited over the generations. Bt fusion protein Cry1Ab/Cry2Aj and the EPSPS protein G10 are both expressed stably in different generations. Bioassay and field trial results indicate that ZD12-6 is not only resistant to insects but also highly tolerant to glyphosate. ZD12-6 has the potential to be developed into a commercial transgenic line.

