Simple and efficient wheat transformation method using *Agrobacterium tumefaciens*.

For the genetic transformation of plants, *Agrobacterium* mediated and microparticle bombardment methods have currently been used, of which the latter is more frequently employed by wheat investigators. However, the *in planta* transformation method recently developed by Supartana *et al.* took away some disadvantages of the conventional in vitro *Agrobacterium* mediated transformation method, which requires sterile conditions and time-consuming processes, in addition to the low transformation frequency and induction of mutation or somaclonal variation during in vitro cultures.

The *in planta* transformation method involves no *in vitro* culture of plant cells or tissues, which is the greatest advantage. This simple and efficient method was applied to the transformation of wheat, *Triticum aestivum* L. var. *Shiranekomugi*. The seeds were inoculated with three strains of *A. tumefaciens*, M-21 mutant strain (second left), the LBA4404 strain harboring a pBI-res binary vector (second right), and the LBA4404 strain harboring a pIG121-Hm binary vector (right), and grown to maturation in pots. The transformants thus obtained (T_o) showed the altered phenotypes, when compared with that of nontransformant (left), suggesting the great applicability of the *in planta* transformation method for the breeding of wheat.

Related article: Supartana, P., Shimizu, T., Nogawa, M., Shioiri, H., Nakajima, T., Haramoto, N., Nozue, M., and Kojima, M., "**Development of simple and efficient *in planta* transformation method for wheat (*Triticum aestivum* L.) using *Agrobacterium tumefaciens***", **J. Biosci. Bioeng., vol. 102, 162-170 (2006)**.