The development and use of transgenic crops has had a profound impact on production agriculture. Among the transgenic events that have been successfully deployed are those that provide herbicide tolerance and those that afford protection against various plant pests. A second generation of transgenics is now in the pipeline that is directly targeted at improving yield. As an example, transgenes are being tested to determine their yield efficacy in commercial maize hybrids grown under water-limiting conditions. In this role, transgenes serve as a source of novel genetic variation that interact with endogenous genes to expand the diversity amenable to selection. In this talk I will provide an industry perspective on the effectiveness of transgenes in improving the yield of maize hybrids.