



International Journal of Agronomy

Special Issue on  
**Novel Biotechnologies to Boost the Yield and  
Quality of Agricultural Crops**

# CALL FOR PAPERS

World agricultural production, in particular yield and quality characteristics of key crops, has significantly suffered from day-to-day worsening environmental conditions due to land degradation, decreased levels of the genetic diversity of commercialized cultivars, increased biosecurity threats, and global climate change. These issues have resulted in large reductions and a genetic plateau in productivity and quality of priority agricultural crops worldwide, although the past century advances in plant breeding and new biotechnologies have greatly helped in the development of superior crop genotypes with increased productivity and other key agronomic characteristics.

Despite this, food deficiency and human starvation still exist and may become even worse with the future increase of global human population. With the advancement made toward full genome sequencing of more than 100 plant genomes and characterizations of exome/transcriptomes from more than 1000 plant species as well as new generation genome modification/editing tools in hand, the plant sciences research community must take extended efforts to address and discuss currently existing issues on boosting yield and quality of agricultural crops in a timely manner. There is an urgent need to develop and apply novel crop specific bio- and 'omics' technologies and translate biological knowledge from other disciplines of life science into agriculture to increase and sustain world agricultural production as well as overcome newly emerging biosecurity issues in the era of global climate change, societal globalization, and technological advances.

The aim of this special issue, therefore, is to initiate and gather the key theoretical, analytic, and practical discussions, opinions, syntheses, tools, approaches, and solutions on current and future efforts of boosting crop yield and quality. Toward this goal, we welcome critical opinions, reviews and methodology, and original research papers on the topic from all the disciplines of plant sciences and cross-related fields of life sciences. We are specifically interested and welcome new concepts on the topic.

Potential topics include, but are not limited to:

- ▶ Modern crop improvement technologies and approaches
- ▶ Molecular basis of crop germplasm diversity and its utilization in breeding of biotic and abiotic stress tolerance
- ▶ Genome-wide association studies for crop yield and quality
- ▶ Genetical genomics
- ▶ Chemical genomics
- ▶ Breeding by design
- ▶ Gene-pyramiding
- ▶ Genomic and/or marker-assisted selection
- ▶ Translational genetics approaches
- ▶ Complex effect genome modification/editing technologies simultaneously improving the key crop characteristics

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/ija/byqa/>.

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