

## Tentative Outline

### Special Thematic Issue for Recent Patents on Food, Nutrition & Agriculture

**Title of thematic issue: Plant-Microbial Interactions and their role in Sustainable Agriculture and Sustainability of Agriculture Soils**

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#### **Aims & Scope:**

Sustainable agriculture is the production of food or other plant or animal based products by using techniques that would protect environment, public health and animal welfare. Sustainable agriculture enable us to produce healthy food without harming natural resources. However, this agriculture depends on successful management of resources for agricultural in order to fulfil the requirements of increasing human population by improving the quality of crop plants and preserving natural resources. Plant growth promoting rhizobacteria (PGPR) are soil inhabitant bacteria that have some useful effects on soil properties and plant health. Plant growth promoting rhizobacteria can play a significant role to achieve sustainable agriculture. The use of PGPR is environment friendly way to enhance crop yields and to facilitate plant growth. PGPR gained more attraction because of their low cost and simple mode of action. They can be used singly or in combination but the combined use of PGPR always resulted incredible results on sustainable agriculture. PGPR are now used regularly to stimulate plant growth and productivity. However, the use of useful bacteria for sustainable agriculture and increase in crop yield needs the collection of capable root-colonizing bacteria which have confirmed plant growth potentials. Use of PGPR reduce the applications of chemical fertilizers which have unfriendly effects on environment. PGPR have the ability to produce broad variety of secondary metabolites, allelo-chemicals, which play pivotal role in plant sustainability and reactions to abiotic stresses. Besides PGPR, endophytic fungi can also play a key role in nutrient availability, protection of plants against various diseases and stresses and thus lead to sustainable agriculture. Endophytic fungi exist widely inside the healthy tissues of living plants, and are important components of plant micro-ecosystems. This Special Issue is focused on introducing the latest interesting findings on plant-microbe interactions and their role in plant growth and development, as well as in sustainable agriculture and sustainability of soils.

**Keywords:** Sustainable agriculture, PGPR, Endophytes, Abiotic stresses, Soil fertility.

#### **Subtopics:**

The subtopics to be covered within this issue are listed below:

1. The central role of microorganisms in sustainable agriculture especially under unfriendly stressful condition.
2. How microorganism interact with plants and with each other for plant growth and development.
3. Mitigation of biotic/abiotic stresses in plants by microorganisms.
4. Microbial-biotechnology and sustainable development of agriculture.
5. Role of microorganisms in improving soil structure and fertility.

#### **Schedule:**

- ◇ Manuscript submission deadline: 30 November, 2018
- ◇ Peer Review Due: 30 January, 2018
- ◇ Revision Due: 28 February, 2018

- ✧ Announcement of acceptance by the Guest Editors: 20 March, 2018
- ✧ Final manuscripts due: 15 April, 2018

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