

# Journal of Plant Science and Phytopathology

Volume - 5, Issue - 2

**Mini Review**      **Published Date:-2021-08-10 00:00:00**

[Strobilurins: New group of fungicides](#)

Strobilurin is a group of natural products and their synthetic analogs have been widely used to control and prevent fungal diseases. Strobilurins were firstly isolated in 1977 from the mycelium of *Strobilurus tenacellus*, a saprobic Basidiomycete fungus causing wood-rotting on forest trees. This group of pesticides was designed to manage fungal pathogens classes such as Ascomycetes, Basidiomycetes, and Oomycetes. Also, Strobilurin commercialized included derivatives such as are azoxystrobin, kresoxim-methyl, picoxystrobin, fluoxastrobin, oryzastrobin, dimoxystrobin, pyraclostrobin and trifloxystrobin. This group is a part of the larger group of QoI inhibitors, which act to inhibit the respiratory chain at the level of Complex III. Strobilurins group control an unusually wide array of fungal diseases, included water molds, downy mildews, powdery mildews, leaf spotting and rusts. This group are used on cereals, field crops, fruits, tree nuts, vegetables, turfgrasses and ornamentals. Also, Strobilurins found to enhance the plant growth in some cases.

---

**Short Communication**      **Published Date:-2021-08-06 00:00:00**

[MALDI-MSI method for the detection of large biomolecules in plant leaf tissue](#)

In this study we describe a method for the detection of biomolecules (in the polypeptide  $m/z$  range) directly from the surface of plant leaves by using Mass Spectrometry Imaging. The plant-pathogen interaction between *Arabidopsis thaliana* and the bacterium *Xanthomonas campestris* pv. *campestris* was analyzed by comparing infected and non-infected leaf discs submitted to mass spectrometry. The total surface area of ion distribution was calculated for both samples, revealing 23 ions, out of which 3 showed statistical significance. Although these ions were not identified, the results showed that this approach can be successfully applied for the detection of potential polypeptide biomarkers directly on leaf tissue, which is a major challenge in MALDI-Imaging studies.

---

**Review Article**      **Published Date:-2021-07-28 00:00:00**

[Current challenges in plant breeding to achieve zero hunger and overcome biotic and abiotic stresses induced by the global climate changes: A review](#)

According Sustainable Development goals until 2030 we should have zero hunger and undernourished people in the world. But to achieve this goal plant breeders must improve plants in order to produce at least the double than is produced now. This is not a easy pathway because we have only few years, but considering that plant breeding programs normally take several years to produce improved genotypes, also the further improved plants should face with pest, disease and other abiotic factors that are increasing with the current climate changes. In this review we will discuss the situation of hunger in the world and the remaining available land to increase food production, point out effects of biotic and abiotic factors on the food production and present some ways that can be used to fastening plant breeding.

---

**Research Article**      **Published Date:-2021-06-09 00:00:00**

[Pathogen identification and control of sooty spot caused by \*Cladosporium ramotenellum\*, appearing on fresh easy peeler mandarins from Perú](#)

---

During the 2018 season, superficial dry and firm black spots, where sometimes an aerial mycelium developed, appeared on the rind of easy peeler mandarins causing high economic losses in fresh citrus exports from Perú. In this work, we have identified the causal agent, a species of *Cladosporium* not previously reported as a citrus pathogen. The pathogen was isolated from rind lesions of affected fruit and was identified by sequencing as *Cladosporium ramotenellum*; and fulfilment of Koch postulates was proven. This species was present on the surface of immature fruit in the groves, indicating that the infection is likely initiated before harvest. *Cladosporium ramotenellum* is resistant to the postharvest fungicides imazalil, pyrimethanil, and thiabendazole, but sensitive to propiconazole, prochloraz, and ortho-phenylphenol. We designed a postharvest industrial treatment to decrease the *Cladosporium* sp. load on the fruit surface that limited the incidence of infection and reduced the postharvest losses caused by the fungus. Although this species is quite ubiquitous, this is the first description of *C. ramotenellum* causing decay of citrus fruit, being the symptoms of this disease similar to the ones described previously and caused by *Cladosporium cladosporoides* in cv. Satsuma mandarins from Japan.

---

**Research Article**

**Published Date:-2021-05-25 00:00:00**

[Ion transporters and their molecular regulation mechanism in plants](#)

With the global population predicted to grow by at least 25% by 2050, the need for sustainable production of nutritious foods is important for human and environmental health. Recent progress demonstrate that membrane transporters can be used to improve yields of staple crops, increase nutrient content and resistance to key stresses, including salinity, which in turn could expand available arable land. Exposure to salt stress affects plant water relations and creates ionic stress in the form of the cellular accumulation of  $\text{Na}^+$  and  $\text{Cl}^-$  ions. However, salt stress also impacts heavily on the homeostasis of other ions such as  $\text{Ca}^{2+}$ ,  $\text{K}^+$ , and  $\text{NO}_3^-$  and therefore requires insights into how transport and compartmentation of these nutrients are altered during salinity stress. Since  $\text{Na}^+$  interferes with  $\text{K}^+$  homeostasis, maintaining a balanced cytosolic  $\text{Na}^+/\text{K}^+$  ratio has become a key salinity tolerance mechanism. Achieving this homeostatic balance requires the activity of  $\text{Na}^+$  and  $\text{K}^+$  transporters and/or channels. The aim of this review is to seek answers to this question by examining the role of major ions transporters and channels in ions uptake, translocation and intracellular homeostasis in plants.

---