

## **Current and prospective strategies on detecting and managing *Colletotrichumfalcatum* causing red rot of sugarcane**

### **ABSTRACT**

Sugarcane is an important industrial crop because it is the major source of white sugar. It is also one of the crops for the alcohol and biofuel industries. Disease-causing organisms can significantly decrease the productivity of sugarcane plants and sugar quality. Among the disease-causing organisms, *Colletotrichum falcatum* Went causes the most significant economic loss (5–50%) in the sugarcane production due to red rot disease. This loss results in only 31% sugar recovery. It is reported that *C. falcatum* can kill sugarcane plants. Currently, there is no sustainable way of preventing red rot disease from spreading in sugarcane plantations. Many popular sugarcane varieties are no longer used in sugarcane cultivation because of their susceptibility to *C. falcatum*. The objectives of this manuscript were to: (i) summarize existing approaches for the early detection of red rot disease and controlling techniques of red rot disease in the field and laboratory and (ii) assess red rot disease control effectiveness so as to propose better methods for mitigating the spread *C. falcatum*. If our proposition is adopted or practiced, it could significantly contribute to the mitigation of *C. falcatum* infection in the sugarcane industry. This could enable achieving sustainable cultivation of sugarcanes to guarantee the sustainability of the sugar industry in the tropics and the subtropics.

**Keyword:** *Colletotrichum falcatum*; Sugarcane; Red rot disease; Detection and management