

**S13-4**

## **Ecological Characteristics and Unique Diagnostic Techniques of Apple Blotch Disease Caused by *Marssonina coronaria* in Korea**

**Chang-Gi Back<sup>\*</sup>, Seung-Yeol Lee, and Hee-Young Jung**

*College of Agricultural and Life Sciences, Kyungpook National University, Daegu 702-701, Korea*

Apple blotch, caused by *Marssonina coronaria*, induce early defoliation in apple and leading to critical economic losses in apple orchards in Korea. Since *M. coronaria* is difficult to culture, we developed isolation and cultural method. We collected *M. coronaria* isolates from Gyeongbuk Province and then constructed phylogentic tree based on ITS regions. As the results, phylogenetic relationship indicated that all Korean isolates formed a same cluster and closely related to Chinese isolates [1]. Ecological characteristic of *M. coronaria* have been observed in apple orchards which located in Gyeongbuk Province from 2011 to present. As the results, the typical apple blotch symptoms were observed from July, and then the infected leaves were discolored and formed acervuli on the leaves. After rainfall, severe infection of symptoms such as discoloration and early defoliation were continuously observed until October. Also overwintered conidia were observed in next March on the fallen diseased leaves [2]. In the last 5 years, ascospores of *M. coronaria* were not observed in apple orchards which were severely infected by *M. coronaria* in Korea. Thus, it is assumed that overwintered conidia could be a primary inoculum of *M. coronaria*. Meanwhile, apple blotch has long latent periods compare to other apple disease. During the latent period, early diagnosis of apple blotch is the most important to control the disease by spray fungicide. In this reason, we developed novel diagnostic method to detect *M. coronaria* during latent period using optical coherence tomography (OCT) and Loop-mediated isothermal amplification (LAMP) method [2, 3]. In this presentation, it will introduce ecological characterization of *M. coronaria* in Korea and unique detection technique of *M. coronaria* in apple. It will be helpful to develop new strategies to control apple blotch in Korea.

### **Reference**

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**Keywords:** Apple blotch, Diagnostic technique, Ecological characterization, *Marssonina coronaria*