3.11 Current situation of citrus Huanglongbing associated with “Candidatus Liberibacter asiaticus” in Guangdong, China

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Guangdong province is one of the major citrus production regions in China with over 220,000 ha. The province is located between 20°13’~25°31’N and 109°39’~117°19’E with a subtropical climate. During the past 20 years, citrus production in Guangdong has gradually shifted from the coastal Chaoshan and Pearl River delta areas to the mountainous West of Guangdong. Citrus Huanglongbing (HLB) was observed in Guangdong in the early 1900’s. Over the years, it is believed that HLB spread to other parts of the province along with the cultivation of new varieties. To investigate the current situation of HLB in Guangdong, we collected samples from 12 citrus production cities, including: Meizhou, Chaozhou, Jieyang, Heyuan, Huizhou, Shaoguan, Qingyuan, Zhaoqing, Yunfu, Yangjiang, Maoming, Zhanjiang. Samples were from 16 cultivars included: Shatianyou \textit{Citrus grandis} var. Shatian Yu) Navel (\textit{C. sinensis}) Tankan (\textit{C. reticulata} cv. Tankan) Ponkan \textit{C. reticulata} cv.Ponkan Chazhigan (\textit{C. reticulata} cv.Chachiensis) Chuntianju (\textit{C. reticulata} cv. Chuntian Ju) Nianju (\textit{C. reticulata} cv. Nian Ju) Anliucheng (\textit{C. sinensis} cv. Liu Cheng) Wendanyou \textit{C. grandis} cv. Wentan Yu) Wenzhoumigan \textit{C. reticulata} cv. Unshiu Shatangju (\textit{C. reticulata} cv.Shiyue Ju) Foshou \textit{C. medica} var. sarcodactylis Gonggan \textit{C. reticulata} var.szechuiana Mashuju (\textit{C. reticulata} cv. Mashui Ju) Juhong \textit{C. maxima} cv. Tomentosa and Hongjiangcheng, (\textit{C. sinensis} cv. Hongjiang Cheng). Symptoms were grouped into four symptom types: mottling, yellowing, and Zn-deficiency-like and one asymptomatic type. Primer set OI1/OI2c specific to “\textit{Candidatus Liberibacter asiaticus}” was used for PCR. Among the total of 359 sample collected, 241 samples were positive with the detection rate of 67.1%. Among the 12 cities, Heyuan, Shaoguan, Yangjiang and Maoming were the first to report the presence of HLB. With the exception of cultivar Wendanyou from Shaoguan City where “\textit{Ca. L. asiaticus}” was not detected, all of the other 15 cultivars showed positive results. Among them, Chuntianju, Nianju, Mashuiju, Foshou and Juhong were the first to detect the presence of “\textit{Ca. L. asiaticus}”. The bacterium was detected in both samples of symptomatic and asymptomatic samples. However, mottling symptoms and PCR positive results were correlated at 92.94%. Therefore, mottling symptoms can be used as a unique criterion for rapid diagnosis of HLB associated “\textit{Ca. L. asiaticus}” under field condition.