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Voracious Fall Armyworm Invades South China

Report Categories:

Agricultural Situation

Pest/Disease Occurrences

Grain and Feed

Sugar

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Report Highlights:

The Fall Armyworm (FAW; *Spodoptera frugiperda*) – a crop-eating pest – first detected in China in January 2019 has spread across China’s southern border and currently impacts about 8,500 hectares (127,000 mu) of grain production in Yunnan, Guangxi, Guangdong, Guizhou, Hunan, and Hainan provinces. Officially, Chinese authorities have employed an emergency action plan to monitor and respond to the pest. FAW has no natural predators in China and its presence may result in lower production and crop quality of corn, rice, wheat, sorghum, sugarcane, cotton, soybean, and peanuts among other cash crops. Experts report that there is a high probability that the pest will spread across all of China’s grain production area within the next 12 months.

General Information:

Fall Armyworm's Spread throughout Southern China

On January 29, 2019, China's Ministry of Agriculture and Rural Affairs (MARA) reported the first detection of FAW in Yunnan province to the International Plant Protection Convention (IPPC). Multiple sources have confirmed that the pest entered China from neighboring Myanmar.

Since its initial detection in China in late January 2019 in Yunnan province, the pest has been detected in Guangxi (March 2019) and Guangdong (April 2019) provinces. There are also unconfirmed reports of FAW detections in Hainan, Guizhou, and Hunan provinces.

Private and government affiliated crop protection experts in China report that FAW has spread much faster than they expected. More recently, the pest was detected in isolated pockets of summer-season corn in Yunnan province. In Guangxi province, the pest has been detected in about one-quarter of all counties.

Fall armyworm is an invasive plant pest which is endemic to North America. The pest consumes plant material and grain of more than 80 species of plants, including corn, rice, wheat, sorghum, sugarcane, cotton, soybean, and peanuts. Since 2016, FAW has caused extensive economic damage across Africa (See FAS GAIN reports from [Mozambique](#), [Ethiopia](#) and [East Africa](#) for more information). In 2017, the pest reached South Asia, and South East Asia by July 2018 (See GAIN report [IN8122](#) and [IN8114](#)).

Fall Armyworm Detections in South China



Potential Impacts of Production of Major Agricultural Commodities in South China

Province	Corn	Rice	Soybean	Peanut	Sugarcane*	Cotton
Yunnan	-	3%	2%	-	23%	-
Guangxi	1%	5%	1%	4%	66%	-
Guangdong	-	5%	1%	6%	8%	-
Unconfirmed Reports						
Hainan	1%	1%	-	1%	2%	-
Guizhou	3%	2%	1%	1%	-	-
Hunan	1%	13%	1%	2%	-	2%
Total	6%	29%	6%	14%	94%	2%

Source: National Agricultural Technology Extension and Service Center; China Ministry of Agriculture and Rural Affairs (2016); Note: * Chinese Sugar Association (2018)

Pest Management and Control Measures

The Chinese Ministry of Agriculture and Rural Affairs (MARA) is taking emergency measures to monitor and control the spread of FAW. Chinese officials reportedly administer a national crop protection monitoring and surveillance program with offices in each local agricultural bureau, implementing a trapping and scouting program. On March 18, 2019, China’s MARA issued a 2019 Fall Armyworm Prevention and Control Technology Plan (Pilot Program). The plan recommends the adoption of prevention and control measures on more than 90 percent of the affected area, and environmentally-friendly technical measures, such as crop rotation, across more than 30 percent of the affected area.



To mitigate the FAW threat, Chinese producers mainly rely on chemicals; biological controls such as fungi or bacteria; or crop management practices such as crop rotation. There are currently no pesticides registered¹ to control FAW for any crops.

The Chinese Academy of Agricultural Sciences (CAAS) is working with domestic and foreign crop protection companies to identify appropriate FAW chemical and non-chemical control measures. In March 2019, the Shenzhen Bailebao Biological Agriculture Technology Company and CAAS announced the joint development of a preliminary pheromone agent and trapping product to manage FAW. On April 22, 2019, CAAS identified 21 already registered chemical pesticides used to control other insects (like *Spodoptera spp*) that have demonstrated mitigation of FAW’s spread and impact.

It is important to note that most farmers in China do not have the financial resources and training needed to effectively manage FAW. Even if a FAW mitigation program is employed, costly control measures (mainly chemical sprays) will drag producer margins into negative territory for farmers of most crops

¹ China’s regulatory authority for plant protection products is the Institute for the Control of Agrochemicals (ICAMA) of the Ministry of Agriculture and Rural Affairs.

that could be affected. FAW management requires farmers to closely monitor their fields and to time their spraying efforts to target FAW during its larval stage of development.

Preliminary Pest Forecasts

FAW has become established in South China and is projected to begin moving northward as spring temperatures rise and crops develop along major growing areas in Central China, the North China Plain, and eventually North East China. Seasonal factors such as the timing of the monsoon season in September/October 2019, and the number of typhoons, will influence the timing, distribution, and impact of FAW in North East China and the North China Plain, China's principal grain producing regions. CAAS experts report that there is a high probability that the pest will spread across all of China's grain production area within the next 12 months.

An expert with CAAS projects that by the end of May 2019, FAW has a high probability to spread to Guangdong, Hainan, Guizhou, and Hunan provinces. The pest may even spread further to Sichuan, Jiangxi, and Fujian provinces.

While it is difficult to assess the production loss associated with FAW, as FAW continues to spread throughout China, FAS-Beijing anticipates major changes to agricultural practices across China as producers will need to begin adopting crop rotation as one of the practices to manage FAW. Environmental conditions in South China are similar to those in parts of South Asia and South East Asia, where farmers have been dealing with the pest for the past two years. In these regions, chemical pesticides and rainy weather have mitigated the spread and impact of the disease.