Introduction

Soybean rust (SBR) (*Phakopsora pachyrhizi* Sydow) was first reported in Japan in 1902. After it got a foothold and began to spread quickly and has been causing problems worldwide for more than a century (Fig1). So far, the disease has been found in 23 provinces in China (Fig2), and is frequently a destructive disease in southern China. The yield loss is perennial 10-30%.

Material and Method

To delineate the overwintering areas of soybean rust, data sets from 743 climatic stations in China during 1951-2001 were analyzed using geographical information system (GIS). The result of our analysis produced a climatic map of the overwintering area of soybean rust in China that should be useful in managing the disease. Analogical distance was calculated using average temperature and average rainfall during ten-day periods, and maximum and minimum monthly temperature between Qionghai and the other 742 climatic stations during 12-2nd month. The GIS software Arcmap completed the map, using Kriging methods for interpolation between stations.

Summary and Conclusion

The result showed that soybean rust can overwinter in the nearly all of Hainan island, in southern portions of Guangdong Province, and in local areas of southern Guangxi and Yunnan Provinces(Fig 3). As yet, these modeling results need to be confirmed by observations of overwintering of soybean rust in these areas.

Acknowledgement

This research was supported in part by the USDA-ARS and National Natural Science Foundation of China (NSFC). We thank Dr. Reid Frederick and Dr. Glen Hartman. The article was published in Chinese Journal of Oil Crop Sciences, 2005, 27(3): 49-53.