Resources Developed by the Sunflower Pathology Working Group

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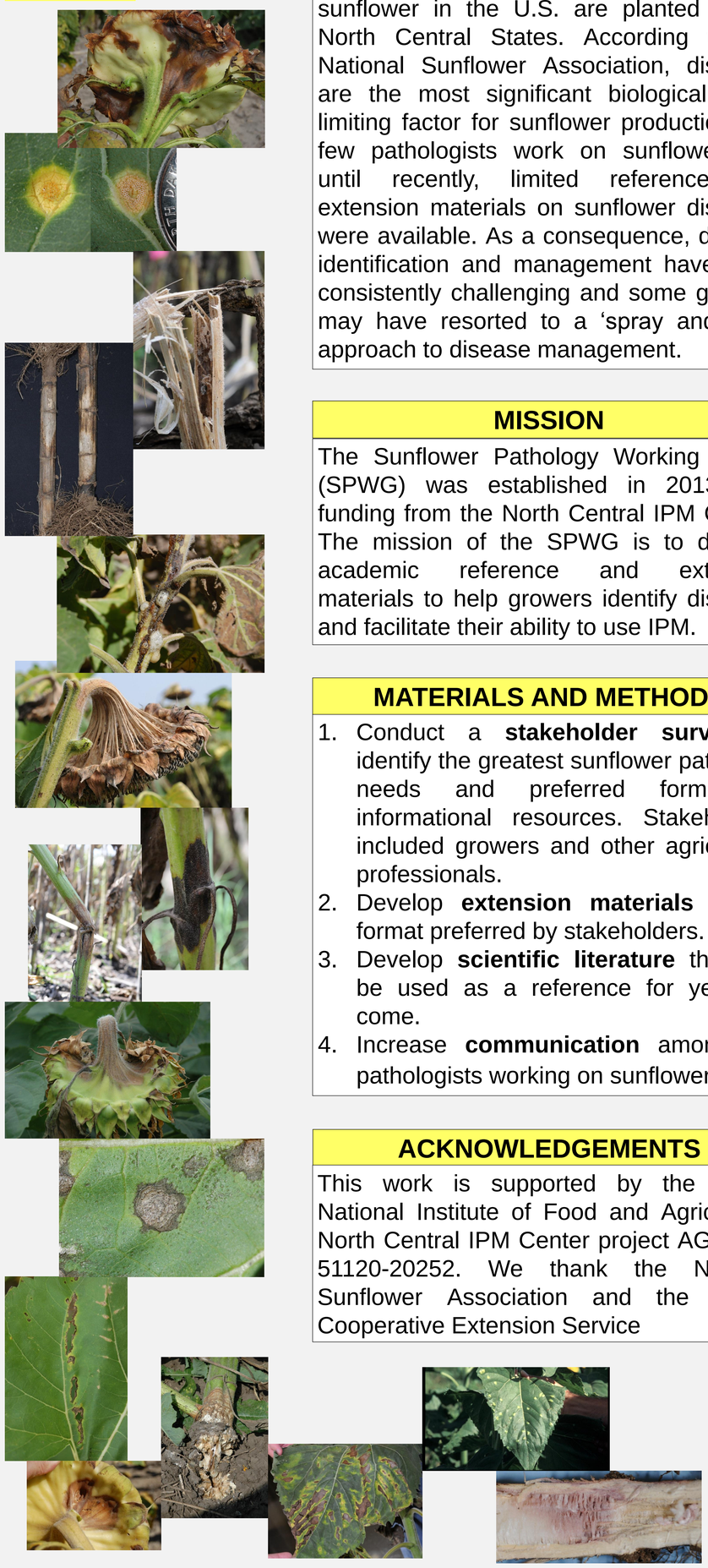
Figure 1. Sunflower Diseases



INTRODUCTION

Approximately 85-90% of the 2.0 M acres of sunflower in the U.S. are planted in the North Central States. According to the National Sunflower Association, diseases are the most significant biological yield-limiting factor for sunflower production, yet few pathologists work on sunflower and until recently, limited reference and extension materials on sunflower diseases were available. As a consequence, disease identification and management have been consistently challenging and some growers may have resorted to a 'spray and pray' approach to disease management.

MISSION

The Sunflower Pathology Working Group (SPWG) was established in 2013 with funding from the North Central IPM Center. The mission of the SPWG is to develop academic reference and extension materials to help growers identify diseases and facilitate their ability to use IPM.

MATERIALS AND METHODS

1. Conduct a **stakeholder survey** to identify the greatest sunflower pathology needs and preferred format of informational resources. Stakeholders included growers and other agricultural professionals.
2. Develop **extension materials** in the format preferred by stakeholders.
3. Develop **scientific literature** that can be used as a reference for years to come.
4. Increase **communication** among the pathologists working on sunflowers.

ACKNOWLEDGEMENTS

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RESULTS

Stakeholder Survey. Survey results suggested that stakeholders had a limited comfort level with the majority of sunflower diseases (Figure 1) and preferred extension information delivered in full-size and pocket-size print materials (Figure 2).

Extension Materials. In response to the survey, the SPWG developed several print materials, including a 20-card diagnostic card set (Figure 3) and a playing card deck (Figure 4). These extension materials have been distributed in six continents and the diagnostic cards set was translated into Chinese for greater distribution to growers in Asia.

Scientific Literature. In 2016, the first APS Sunflower Compendium was published (Figure 5). Additionally, the SPWG authored book chapters in the Handbook of Florists' Crop Diseases (2016).and in the American Oil Chemists Society Sunflower monograph (2015).

Communication. Authorship in the sunflower compendium included scientists from many sunflower producing countries (Figure 5). The diagnostic set, the playing cards and the compendium have been requested and distributed internationally and have increased communication among pathologists globally.

Figure 2. Rank of preferred information format by the National Sunflower Association yield-surveyors (n=30), made up of growers, Extension, industry and USDA professionals.

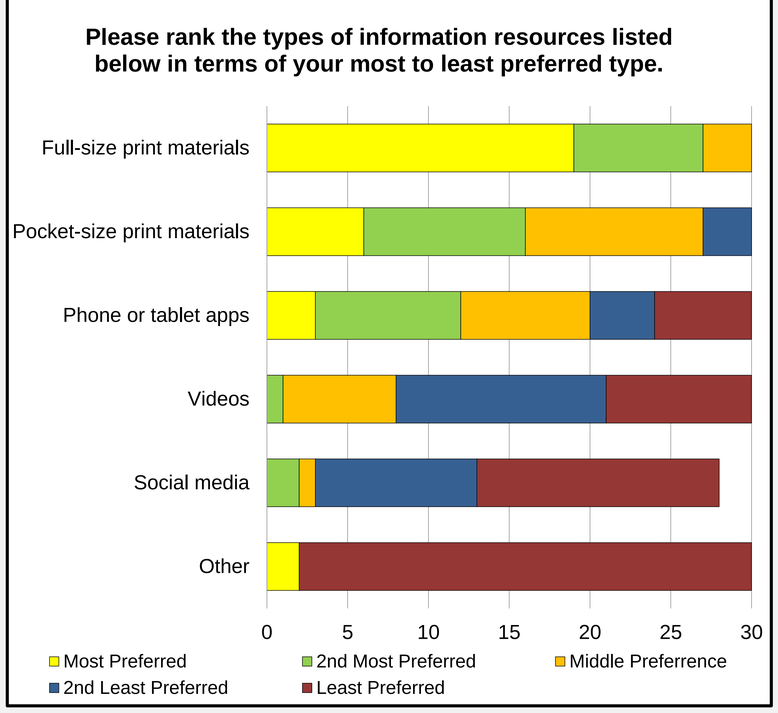
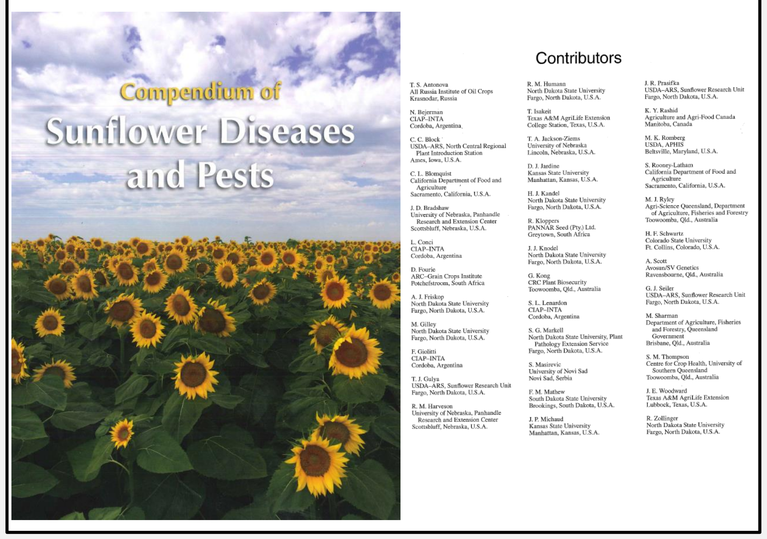


Figure 3. Extension literature developed by the SPWG includes a 20-card diagnostic set in English and Chinese.

Figure 4. Sunflower disease playing cards

Figure 5. APS Compendium of Sunflower Diseases and Pests



FUTURE ACTIVITIES

SPWG members are currently drafting *Plant Health Progress* Diagnostic Guides (anticipated in 2018), a *Plant Disease* Feature article (anticipated in 2018) and an interactive iBook (anticipated in 2019).