

Major sunflower diseases and their management in USA: A review

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Abstract

Sunflower, *Helianthus annuus*, is one of the major oilseed crops grown in USA. Two types of sunflowers are grown: oil- and non-oilseed, with the oilseed sunflower accounting for 90% of the sunflower production. Several sunflower diseases develop and cause significant yield losses annually. The major diseases include sunflower rust (*Puccinia helianthi*), Phomopsis stem canker (*Phomopsis spp.*), downy mildew (*Plasmopara halstedii*), Alternaria leaf spot (*Alternaria spp.*), and white mold (*Sclerotinia spp.*). The main risk factors for these diseases to develop include inoculum abundance (alternative hosts), cultural practices (mainly minimum or no-tillage), and conducive weather. Planting resistant hybrids, crop rotation, and use of foliar and seed treatment fungicides are some of the management practices used in the USA. The extent of the occurrence and challenges to manage sunflower diseases will be discussed.

Key words: *Helianthus*, diseases, disease management

美国主要的向日葵病害及其防治：综述

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摘要

向日葵是美国种植的最重要的油料作物之一。两种类型的向日葵包括油用型和非油用型，其中油用型向日葵占向日葵生产的 90%。一些向日葵病害的发生每年都会造成产量显著降低。最主要的病害包括：向日葵锈病 (*Puccinia heliathi*)、茎溃病 (*Phomopsis spp.*)、霜霉病 (*Plasmopara halstedii*)、黑斑病 (*Alternaria spp.*) 和菌核病 (*Sclerotinia spp.*)。这些病害发生的可能因素包括：种菌充足（可选择的寄主）、栽培方式（主要是少耕或免耕）以及有利的天气条件。在美国主要的防治措施有种植抗性杂交种、轮作以及用杀菌剂进行叶片或种子处理。向日葵病害发生程度和防治面临的挑战将会进一步讨论。

关键词：向日葵，病害，病害防治