



# FACT SHEET

## FUNGICIDE RESISTANCE MANAGEMENT



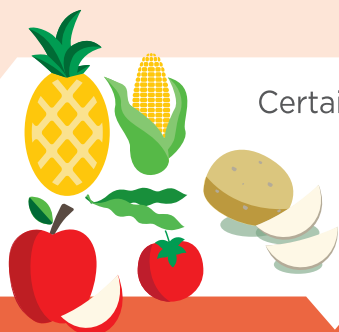
### FUNGICIDES | IMPORTANT TOOLS FOR PREVENTING AND MANAGING PLANT DISEASE

#### WHAT ARE FUNGICIDES?

Fungicides are chemicals that can **inhibit the growth or development of fungal pathogens**. They are important tools that farmers use proactively to protect and maintain plant health, quality and yield.

By controlling fungal plant diseases, farmers can save

**125 M TONS**  
of **FOOD** each year—  
enough to **FEED 600**  
**MILLION PEOPLE!**



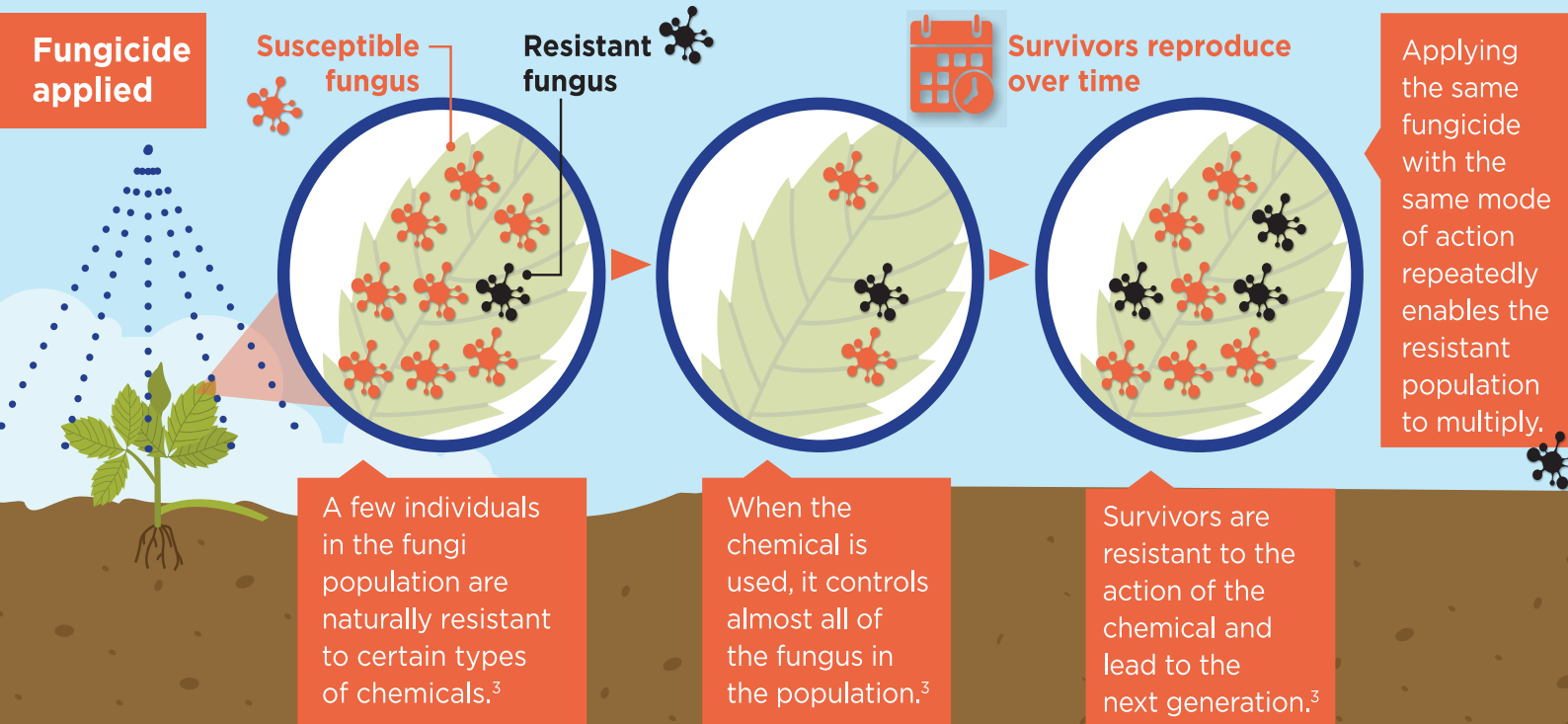
Certain species of fungi can become resistant to fungicides.

This not only diminishes the fungicide's long-term effectiveness, but can reduce the amount of food brought to market.



#### HOW DOES FUNGICIDE RESISTANCE EVOLVE?

It is an evolutionary process that builds up through the survival and spread of resistant fungi after repeated use of the same fungicide treatment.<sup>2</sup>





# MANAGING FUNGICIDE RESISTANCE

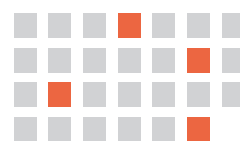
The plant science industry works with farmers, advisors and academia to identify resistance issues and to provide guidance and tools that help them manage resistance on the farm.

## Q & A

**Q.** Does fungicide resistance cause an increase in the use of crop protection products?

**A.** No. In fact, increased use of crop protection products is not recommended as a resistance management strategy. Resistance can be proactively managed through the combination of diverse strategies, including: avoiding repetitive use of one fungicide or mode of action; mixing or alternating with an appropriate partner fungicide; limiting the number and adapting the timing of treatments; and integrating with non-chemical methods.<sup>2</sup>

### TREATMENT TIMING



**Q.** Do fungicide mixtures help delay resistance?

**A.** Yes. Fungicide mixtures – two or more fungicides that have different modes of action combined in a spray tank and applied as a single mixture – can be used to delay the onset of resistance.<sup>2</sup> A code system on pesticide product labels helps to easily identify which chemicals have the same mode of action to guide resistance management efforts.



## SOURCES

<sup>1</sup> imperial.ac.uk

<sup>2</sup> frac.info

<sup>3</sup> extension.psu.edu



The Fungicide Resistance Action Committee (FRAC), a CropLife International expert group, works to prolong fungicide effectiveness and limit crop losses should resistance emerge. For more information, visit: [www.frac.info](http://www.frac.info)

