

CROP PROTECTION

Impact of Pests on Global Agriculture:

Insect, disease and weed pressures are one of the greatest threats to our food supply as they compete with crops for essential nutrients and rob them of their yield and quality. Farmers rely on crop protection products to prevent these pests from damaging their crops and limiting their harvest. However, as the impacts of climate change grow, these pest pressures will become more extreme – making effective use of crop protection products more important than ever before.

Pest Trends:

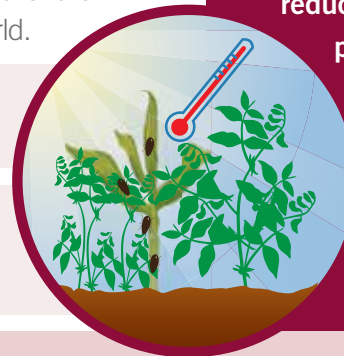


Currently, **30-40%** of wheat, maize and rice yields are lost annually to pests.¹

Insects, weeds and disease thrive in warm climates. As temperatures rise due to climate change, these pests will also increase in number and resiliency. A rise of just 2 to 3°C over the next 50 years will have serious consequences for our world.

Aphids, which transmit disease to plants, can reproduce an **extra 5 generations** each year with a **temperature rise of only 2°C**.^{2, 3}

A mere **3°C** rise in temperature can **increase the growth of smooth pigweed by 240%**. The pervasive weed threatens maize, rice and soybean crop yields.⁴

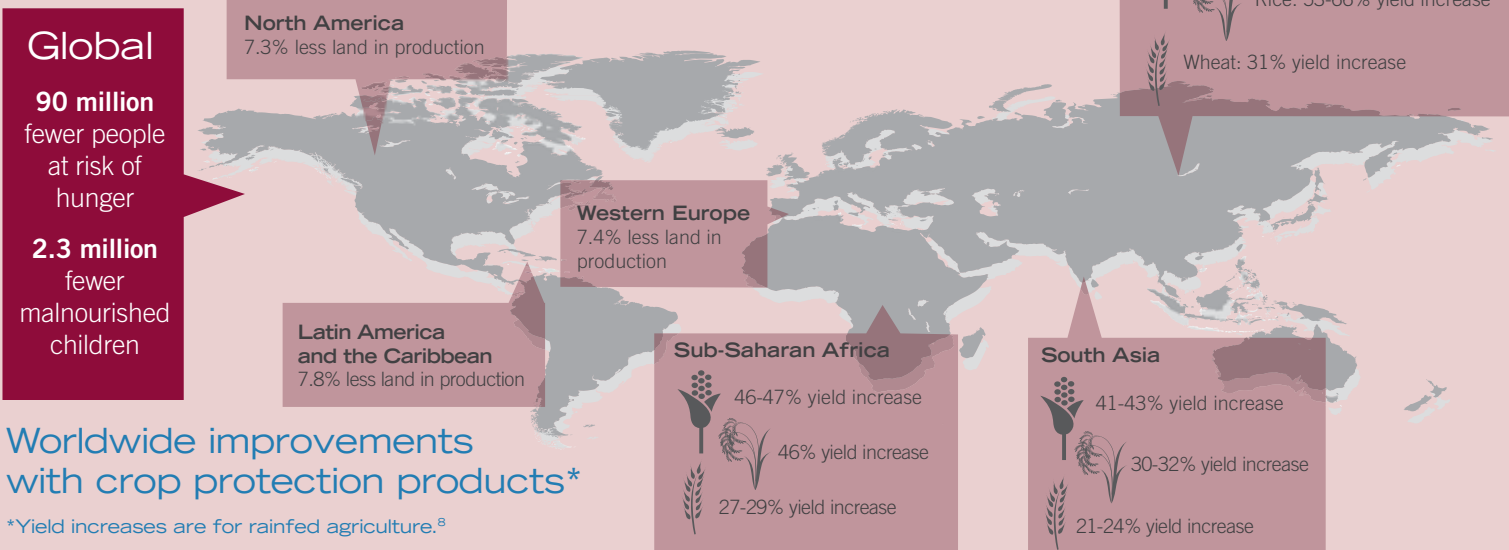


Technology Profile:

- Today, crop protection products **save nearly a quarter of all global staple crop supply** from being lost to insects, weeds and disease.⁵
- Research in Kenya and Uganda showed that herbicides **increase benefits, such as yields, income and quality of life, to maize farmers by 80%**.⁶
- Greater adoption of crop protection products could **reduce the amount of people at risk of hunger by more than 90 million in 2050**.⁷

Global Benefits:

By 2050, agriculture will need to produce enough food to feed 9 billion people while battling increasingly difficult growing environments due to climate change. Crop protection will enable farmers to adapt to these new conditions and deliver benefits around the world, including increased yield, less land in production and a reduced risk of hunger:



References:

1. Oerke, E.C., 2006, "Crop losses to pests," *Journal of Agricultural Science*
2. Evans, K.A. 2012. Do we need to be worried about the potential threat of invasive species to crops as the climate changes? *Proceedings Crop Protection in Northern Britain*. 55-60.
3. Roos, J., et al. 2011. The impact of global warming on plant diseases and insect vectors in Sweden. *European Journal of Plant Pathology*. 129:9-19.
4. Patterson, D. 1995. Weeds in a changing climate. *Weed Science*. 43:685-701.
5. Oerke, E.C., 2006, "Crop losses to pests," *Journal of Agricultural Science*
6. Overfield, D., et al., 2001, "Analysis of the constraints to adoption of herbicides by smallholder maize growers in Kenya and Uganda," The BCPC Conference: Weeds, pp. 907-912.]
7. Oerke, E.C., 2006, "Crop losses to pests," *Journal of Agricultural Science*
8. International Food Policy Research Institute AgriTech Toolbox Crop Model: <http://apps.harvestchoice.org/agritech-toolbox/>

To learn more about climate change impacts and plant science solutions:

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