

# How GMOs Help Reduce FOOD WASTE & LOSS

In the United States, approximately

## 133 BILLION POUNDS

of food is **WASTED** annually, contributing to **18% of the total U.S. landfill methane (greenhouse gas) emissions.**<sup>1</sup>



**GM APPLES ARE NON-BROWNING AND NON-BRUISED, ELIMINATING THOSE SUPERFICIAL ISSUES** that cause people to unnecessarily throw them away.<sup>2</sup>

In 2010, each American on average

**THREW AWAY**

**17**  
APPLES



totaling  
1.7 billion  
pounds  
of food  
waste<sup>3</sup>

**25**  
GALLONS OF  
WATER WASTED  
PER APPLE.<sup>4</sup>



**GM POTATOES ARE LESS PRONE TO BRUISING AND BLACK SPOTS,** meaning fewer potatoes will end up in landfills.

**24**

**BILLION POUNDS FROM WASTE IN 2013<sup>5</sup>**



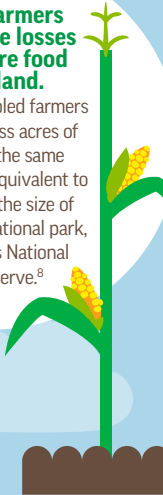
more than  
**1,000x**

**THE WEIGHT OF THE EIFFEL TOWER!<sup>6</sup>**



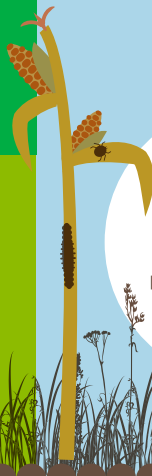
**GMOs help farmers minimize these losses and grow more food using less land.**

In 2014, GMOs enabled farmers to use 51 million less acres of land to produce the same amount of crops<sup>7</sup>—equivalent to nearly four times the size of America's largest national park, Wrangell-St. Elias National Park and Preserve.<sup>8</sup>



**20 - 25%**

of all crop yields in the U.S. are **LOST** to pests, crop diseases, or post-harvest losses. In the developing world, it's as high as 40 - 50%.<sup>9</sup>



<sup>1</sup> America's Food Waste Problem (2015). Retrieved from <https://www.epa.gov/science/matters/americas-food-waste-problem>

<sup>2</sup> Arctic Apple Benefits. Retrieved from <http://www.arcticapples.com/arctic-apples/electric-apples-benefits/>

<sup>3</sup> U.S. Census Bureau Announces 2010 Census Population Counts - Apportionment Counts Delivered to President. Retrieved from <https://web.archive.org/web/20101226044247/http://2010.census.gov/news/releases/operations/cb10-cr53.html>

<sup>4</sup> Smithsonian: This Is How Much Water You Waste When You Throw Away Food (2015). Retrieved from <http://www.smithsonianmag.com/science-nature/how-trashing-food-wastes-water-too-180957239/?no-ist>

<sup>5</sup> Halberman, D., Guenther, J., Collinge, S. et al. Biotech Potatoes in the 21st Century: 20 Years Since the First Biotech Potato (2016). Retrieved from <http://link.springer.com/article/10.1007/s12220-015-9485-1>

<sup>6</sup> All You Need to Know about the Eiffel Tower. Retrieved from [http://www.toureiffel.paris/images/PDF/all\\_you\\_need\\_to\\_know\\_about\\_the\\_eiffel\\_tower.pdf](http://www.toureiffel.paris/images/PDF/all_you_need_to_know_about_the_eiffel_tower.pdf)

<sup>7</sup> Brookes, G. and Barfoot, P. (2016). GM crops: global socio-economic and environmental impacts 1996-2014. Retrieved from <http://www.isaaa.org/kc/croppbiotechupdate/article/default.asp?ID=14459>

<sup>8</sup> National Park Service: Frequently Asked Questions. Retrieved from <https://www.nps.gov/aboutus/faqs.htm>

<sup>9</sup> Global Scientists Meet for Integrated Pest Management Idea Sharing (2015). Retrieved from <https://nifa.usda.gov/blog/global-scientists-meet-integrated-pest-management-idea-sharing>