



## Understanding E15: The dangers of increasing the amount of ethanol in engine fuel

Today, the majority of American transportation fuel is comprised of approximately 10 percent ethanol and 90 percent gasoline, a blend known as E10.<sup>1</sup> However, the ethanol industry recently cleared all federal hurdles required by the U.S. Environmental Protection Agency to sell a new fuel blend – E15 – at stations nationwide.<sup>2</sup> E15, a mix of up to 15 percent ethanol with 85 percent gasoline, is now eligible for sale, although costs associated with infrastructure development and state regulations may keep it out of gas stations for the time being.

The latest science on E15 clarifies the fuel's damaging impacts on the environment, public health, and consumers:

### Environmental Damage:

- The EPA's own data shows that corn ethanol releases more greenhouse gas emissions over its lifetime than traditional gasoline;<sup>3,4</sup>
- Chemical runoff from corn fields is a primary cause of the 'dead' zone in the Gulf of Mexico – an aquatic area the size of Massachusetts so polluted that nothing can survive in it.<sup>5,6,7</sup>
- The National Academy of Sciences found that pesticides and fertilizers used for corn ethanol production are poisoning wildlife and damaging biodiversity across the U.S.<sup>8</sup>

### Public Health Concerns:

- E15 releases poisons into the air, including nitrous oxide and formaldehyde, which have been proven to

increase rates of asthma as well as respiratory and heart disease;<sup>9</sup>

- Even in new infrastructure, ethanol corrodes and cracks storage tanks, leading to dangerous leaks. When ethanol leeches into the ground, it poisons drinking water and soil and increases fire risks. Clean up procedures are still not fully developed.<sup>10,11</sup>



### Exacerbating global food insecurity:

- Today the U.S. burns more than 40 percent of its corn for fuel. Increasing the amount of ethanol in engine fuel puts unsafe pressure on the food supply and increases food price volatility;<sup>12,13</sup>
- Volatile food prices increase chronic malnutrition for the world's poor by pushing them to shift to cheaper, lower quality foods. The World Bank

1 U.S. Energy Information Agency. <http://205.254.135.7/tools/faqs/faq.cfm?id=27&t=4>

2 U.S. Environmental Protection Agency. E15. <http://www.epa.gov/otaq/regs/fuels/additive/e15/>

3 McMahon, K., Witting, V. "Corn Ethanol and Climate Change: How the Renewable Fuel Standard mandates the consumption of biofuels that contribute to climate change." Friends of the Earth. July 2011. [http://libcloud.s3.amazonaws.com/93/2c/d/514/Corn\\_ethanol\\_and\\_climate\\_change.pdf](http://libcloud.s3.amazonaws.com/93/2c/d/514/Corn_ethanol_and_climate_change.pdf)

4 Hill, et.al. "Environmental, economic, and energetic costs and benefits for biodiesel and ethanol biofuels," Proceedings of the National Academy of Sciences, 2006: 103; 111206-111210. Page 221.

5 Ibid page 11

6 Thompson, Andrea. "Corn ethanol will worsen dead zone." MSNBC. Mar. 18, 2008. <http://www.msnbc.msn.com/id/23695288/>

7 Davidson, Eric A., et al. "Excess Nitrogen in the U.S. Environment: Trends, Risks, and Solutions." Issues in Ecology, Report #15. Winter 2012.

8 Ibid page 253


9 DOE. 2009. Effects of Intermediate Ethanol Blends on Legacy Vehicles and Small Non-Road Engines, Report 1 – Updated. Knoll, K., West, B.H., Clark, W., Graves, R.L., Orban, J., Przesmitzki, S., Theiss, T.J.. [http://feerc.ornl.gov/publications/int\\_blends\\_Rpt1\\_Updated.pdf](http://feerc.ornl.gov/publications/int_blends_Rpt1_Updated.pdf) [accessed March 6, 2009].

10 Brent D. Jacobucci and Randy Schnepf. "Ethanol and Biofuels: Agriculture, Infrastructure, and Market Constraints Related to Expanded Production." CRS Report for Congress. March 16, 2007. <http://www.nationalaglawcenter.org/assets/crs/RL33928.pdf>

11 Sheila Karpf. "Locking in Corn Ethanol Locks Out Alternatives." Environmental Working Group. April 7 2011. <http://www.ewg.org/agmag/wp-content/uploads/2011/04/Final-ethanol-infrastructure-report2.pdf>

12 [http://www.actionaid.org.uk/doc/lib/meals\\_per\\_gallon\\_final.pdf](http://www.actionaid.org.uk/doc/lib/meals_per_gallon_final.pdf)

13 Melissa C. Lott. "The US Now Uses More Corn for Fuel than Feed." Scientific American. October 2007. <http://blogs.scientificamerican.com/plugged-in/2011/10/07/the-u-s-now-uses-more-corn-for-fuel-than-for-feed/>



estimates that ethanol use is a leading cause of food price spikes and higher global hunger rates;<sup>14</sup>

### Costs to consumers:

- Ethanol is 33 percent less energy efficient than gasoline. More corn ethanol in engine fuel means decreased fuel economy;<sup>15</sup>
- E15 does serious damage to the engines of cars, trucks, and small and off-road engines. Ethanol corrodes engine parts and causes stalling, misfiring, and overheating;<sup>16</sup>
- Major engine and car producers have stated that using E15 will void consumer warranties. Recently proposed legislation would leave consumers liable for all the damages and costs associated with using E15.<sup>17</sup>

E15 and corn ethanol are neither sustainable nor viable alternatives to traditional gasoline. The effort to replace gasoline with ethanol is misguided and dangerous. Adding small, well-tested amounts of oxygenated additives like ethanol to transportation fuel can help gasoline burn more efficiently. However, the effort to *replace* traditional gasoline with ethanol, even in small quantities, will have damaging effects on the environment, the public, and consumers.

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<sup>14</sup> <http://business-standard.com/india/news/biofuels-commodity-futures-mkt-threaten-global-food-security/148752/on>

<sup>15</sup> Pugliese, Lucian. "Ethanol's hidden gasoline tax." Washington Times. May 7th, 2012. <http://www.washingtontimes.com/news/2012/may/7/ethanol-hidden-gasoline-tax/>

<sup>16</sup> Congressman Sensenbrenner's webpage. "Sensenbrenner hears from automakers: E15 bad for engines, American consumers." <http://sensenbrenner.house.gov/News/DocumentSingle.aspx?DocumentID=249952>

<sup>17</sup> Ibid.