

**Testimony of
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**Submitted to the
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**Hearing on the
Boulder County Parks & Open Space
Cropland Policy**

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In December, 2011 the Boulder County Commission advanced and enabled sustainable agriculture by approving the Boulder County Parks and Open Space Cropland Policy. This allowed the planting and harvesting on Boulder County leased open space of corn and sugarbeets improved through biotechnology to tolerate applications of the safest herbicide on the market; and for corn that would resist corn rootworm and certain other insect pests by incorporating a safe and effective pesticide approved for and widely used by organic farmers.

The experience in Boulder County subsequent to the Commission's 2011 decision has been entirely positive, and consistent with that of more than 18 million farmers around the world, who have found biotech crops to reduce their environmental impacts and cut their reliance on pesticide sprays while increasing their yields, their profits, and the quality of their harvests.¹ The proposal from the Farmer's Alliance for Integrated Resources (FAIR) to renew and build upon the positive results of the 2011 decision to allow additional crop varieties improved through biotechnology is therefore grounded in and supported by experience, and is sound and deserving of support.

There have been a number of notable developments in the past five years. Some of the most important are summarized below.

SAFETY

The global scientific consensus on the safety of crops and foods improved through biotechnology was formidable in 2011.² The case has been materially strengthened since then, to the extent that it is now even stronger than the case for anthropocentric climate change.³ It remains a fact that not a single example of harm to humans or animals has been shown to result from exposure to or consumption of biotech improved crops or foods. The most notorious publication claiming to have found harm to rats in a laboratory experiment has been retracted.⁴ Other papers making similar claims have been retracted, and the research team from which they emerged has been found guilty and disciplined for data manipulation and fraud.⁵

A major review of the most recent decade of risk assessment research on transgenic crops corroborates voluminous prior work that found not only that there are no potential risks unique to the use of modern biotechnology to improve seeds or livestock, but that negative consequences, unique or not, have been conspicuously absent.⁶ Meanwhile, the organic industry and their allies funding the campaigns of disparagement against GMOs and GM food continues to deliver one crisis of pathogen contaminated food after another, too many with fatal consequences.⁷

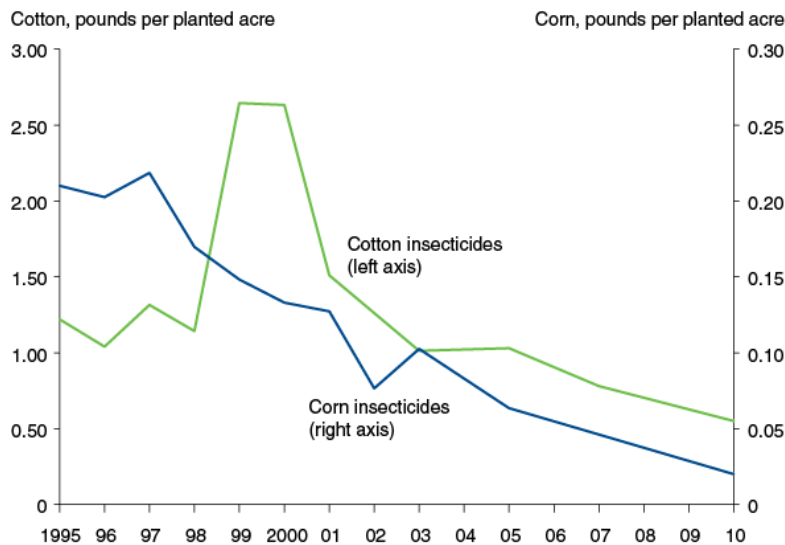
A major study covering more than one hundred billion animals that consumed feed derived all or in part from biotech improved crops over more than two decades not only found no negative health impacts, but that the average health of the animals eating GM feed increased over this period.⁸ Meanwhile, the number of international scientific organizations endorsing the safety of agricultural biotechnology and its products continues to climb, now including more than 270 credible professional groups.⁹ This is why, despite the politics, even European authorities have acknowledged the safety of these crops and foods.

Indeed, the use of more precise technology and the greater regulatory scrutiny probably make them even safer than conventional plants and foods; and if there are unforeseen environmental effects - none have appeared as yet - these should be rapidly detected by our monitoring requirements. On the other hand, the benefits of these plants and products for human health and the environment become increasingly clear.¹⁰ The main conclusion to be drawn from the efforts of more than 130 research projects, covering a period of more than 25 years of research, and involving more than 500 independent research groups, is that biotechnology, and in particular GMOs, are not per se more risky than e.g. conventional plant breeding technologies...

ENVIRONMENTAL IMPACTS

Data and experience confirm that the use of “GMOs” in agriculture has allowed farmers to replace older, increasingly obsolete chemistry with a new generation of pest and weed control measures with a lower, more sustainable environmental footprint. Opponents of innovation claim falsely that the use of pesticides has increased, and these claims have even been published in the scientific literature. They have been severely criticized, however, for relying on dubious extrapolations from incomplete data, and invalid statistical analysis.¹¹ Data from independent third parties make it very clear, in fact, that the use of pesticides has dropped dramatically since the introduction of crops improved through biotechnology (Figure 1), as even some elements of the organic industry admit.¹²

Figure 1: Insecticide use in corn and cotton declined in most years following GE crop adoption.



Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service, Agricultural Chemical Usage Reports and Quick Stats.

Having failed to substantiate their claims of harm from biotech improved crops, opponents have mounted campaigns to demonize glyphosate, the active ingredient in Roundup herbicide, the use of which has increased significantly in tandem with biotech crops. In particular, they claim glyphosate is carcinogenic, based on a politicized review by a minor arm of the World Health Organization.¹³ But glyphosate is widely recognized by regulatory agencies around the world as one of the safest agricultural chemicals ever used, and the smear campaign is not supported by evidence.¹⁴

Opponents have also mounted a global propaganda campaign to demonize neonicotinoid seed treatments, and in particular to blame them for widespread negative impacts on honeybee populations, and “Colony Collapse Disorder” although expert reviews have consistently identified other causes, and found neonicotinoids innocent.¹⁵ Journalists have in fact discovered that anti-pesticide activists conspired to mislead policymakers and implement a ban on the use of neonicotinoids in Europe, which has deprived farmers of a valuable tool and done nothing to improve bee populations.¹⁶ It is also important to note that FAO statistics kept by the United Nations Food and Agriculture Organization show that there has been no global decline in honeybee populations, and that regional declines that have been seen do not correlate with the use of neonicotinoid seed treatments.¹⁷

Opponents also consistently fail to mention the numerous and well documented positive economic and environmental impacts from biotech improved crops.¹⁸ This is part of a consistent pattern of misrepresentation examined further in the following section

MAINSTREAM MEDIA COVERAGE OF ACTIVIST PROPAGANDA CAMPAIGNS

Perhaps the most surprising development in the last five years has been the dramatic shift in mainstream media coverage of opposition claims and campaigns. For many years previously the general pattern was for media to present opposition claims with little or no critical analysis. This is no longer the case. Prominent mainstream journalists have called out opponents for denying the scientific consensus on GM safety, and documented with devastating detail the degree of misrepresentation to which they routinely resort.¹⁹ Notable figures have defected from the opposition ranks, as former campaigners and skeptics have confronted the cognitive dissonance between their demands that policymakers act on the scientific consensus relating to anthropogenic climate change, while rejecting it with respect to GMOs.²⁰ And mainstream journalists have taken a skeptical approach, but discovered the facts confirm the safety of GM crops and foods, which offer tools for addressing serious and otherwise intractable challenges.²¹ The response from opponents increasingly is to resort to character assassination.²²

In summary, arguments advanced by opponents to innovation in agricultural biotechnology fail to withstand scrutiny. But the experience of farmers in growing GM crops in Boulder County has been consistent with that of farmers around the world, and uniformly positive. We urge the Commission to protect the ability of Boulder County farmers further to enhance the health and safety of Boulder County residents and their environment by renewing and expanding their freedom to grow these crops.

Thank you again for this opportunity to provide you with this testimony.

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