

Technology's Future in Protein Production

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Should we protect the use of technology in the production of food? We have all seen the statistics—global population has surpassed **7 BILLION** people and is climbing towards an estimated **9 BILLION** people by 2050. Global population is growing at a rate of greater than 1 person every second, of every day. In the time it took you to read that last sentence, a net of 5 human lives were added to the planet. Based upon these numbers, the United Nations Food and Agriculture Organization (FAO) has estimated that we will have to double global food production and that we cannot rely solely on increases in arable land, but must seek out and implement new technologies that increase production in order to meet the estimated food demands of the future. Presently, global agriculture produces enough food to supply every person on earth more than 2,700 calories/day, yet according the World Health Organization, over 900 million people are undernourished and hunger kills more people than AIDS, malaria and tuberculosis, combined. Annually, hunger kills 1.3 million more people than cancer. Presently, production is not the issue; rather economics, social protection, food waste, spoilage and politics are infringing upon the basic human right of **Access** to food for over 10% of the global population. When the issue of access becomes compounded with insufficient caloric production, the outcome will be catastrophic.

It is naïve to believe we can eliminate all of these barriers and to set our sights on total elimination of world hunger—unfortunately that is an unrealistic goal. It is more attainable, and more productive, to focus on solving underlying issues and searching for new innovation to improve productivity. It is intuitive that we should learn from observation and then apply that knowledge to improve future outcomes. Webster defines technology simply as the “practical application of knowledge”, further defined in the context of food production as improved **Practices, Products** and **Genetics**. Remarkable strides have been made in both animal and crop production in

each of these areas. Corn yield/acre has doubled and red meat and poultry production has nearly tripled in the US over the last 50 years (USDA-ERS, 2013) while the percentage of land used for agriculture simultaneously has declined by 3.24% (The World Bank, 2013). This is tangible proof that modernized agriculture can rise to the challenge and if necessary, double production by the year 2050—provided there is access and an ability to develop, market and implement future technological advances.

How do we protect the use of technology in the production of food? The debate is no longer about “if” we need technology to sustainably produce safe and abundant food, but rather do we allow their use in the food chain. Arbitrary barriers to global trade, policies and regulations based upon the fallacy of shielding consumers from all risk, activism grounded in misinformation, social media, a 24 hour news cycle and political retribution are all existing impediments and looming threats to safe, approved and efficacious technologies. The compromise comes when we allow **Choice**. Give producers the choice to use technologies in their operations how they see fit. Give processors the choice to develop procurement specifications for raw materials that meet their customers’ needs and demands. Give consumers a choice on how to spend their dollars. Let them choose products they want, produced in ways they see fit, at a price they are willing to pay.

As scientists and as an Association, we have a role in this debate. We have been too passive, too quiet, too non-confrontational for too long. Make the issue of food security personal, advocate for science and innovation, challenge policies and regulations that discourage progress and use your talents, skills and influence to become and ambassador for food. It is time to engage in the conversation.

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