The New Era of Agriculture

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I remember it like it was yesterday, running off the school bus as I excitedly skipped towards my mother with a bright yellow sheet of paper in hand. I was so eager to tell her about the field trip we were going on and have her sign the permission slip allowing me to attend. The destination, Milburn Orchards, a local agritourism facility that has everything from acres of apple trees to pumpkin patches and from a petting zoo to its very own creamery. Looking back, my most memorable experiences as a student surround the amazing world of agriculture. These excursions allow us to dream big about what our future may hold. Ask the 6-year-old me and I would have told you I wanted to be a dairy farmer when I "grew up" - and because of these first hand experiences, I would be willing to bet I was not the only kid in class that would have mentioned a future in the world of agriculture. Yet, as we advance through our education, selecting a career becomes problematic due to the pressures felt from sources, which may not encourage the field of agriculture as a career choice. So, how do we combat the disconnect seen between the excitement of elementary aged students on field trips and the modern-day college and career readiness surge seen in high school?

Good morning, my name is Sara Collins, and today I am here to speak with you about the role technology can play in recruiting the next generation of agriculturists. As we consider this topic, I will first address the disconnect between millennials and the field of agriculture. Secondly, I will highlight two examples of current agricultural technologies that can be appealing to the new aged thinker, and lastly I will conclude with how current, innovative technology is aiding in the comfort of job security.

Being involved with the National FFA Organization since the sixth grade, I have always been told there was a need for jobs in agriculture. However, you and I understand that I am the minority; most students are not exposed to agricultural education or to job possibilities in

agriculture other than production. Outside of traditional farming, there is an increased need for food scientists, microbiologists, agronomists, and even agricultural engineers (Teachable, 2017). With a wide variety of jobs available, why are not more young people drawn to the field of agriculture?

Let us be honest; long hours and hard work are not exactly appealing to those who grew up in a digital age. In todays society, youth live in a fast-paced world and have everything at their fingertips, including instant results from a simple Google search conducted on their handheld devices. The most recent United States Census mentions there are 80 million millennials in the United States, and they will make up 75 percent of the workforce in just eight short years (Silva, 2017). So, how is this generation to learn about the advancements within the field of agriscience? What is supposed to draw them in? There is no secret people are drawn to what they know, and for this generation it is simple: technology.

This brings me to my second point: how we can use current agricultural technology to intrigue the minds of millennials? According to the United States Labor Department, the average age of farmers and ranchers is 58 and during the past 30 years the average age has grown by nearly eight years (Wright, 2015). Due to this trend, we need to do a better job of advertising STEM (science, technology, engineering, and math) aspects of agriculture as career options for younger generations.

What I find interesting about new breakthroughs in agriculture is the increased use of robots. Whether it is in the field, in the lab, or even transporting goods, robots are of growing importance . The TerraSentia is a small, autonomous robot that travels in between rows of corn, soybeans, or sorghum. This revolutionary device counts plants and measures stem width to

estimate biomass (TerraSentia, 2017). The TerraSentia is compact and customizable, and is equipped with cameras so growers can see what is going on in their fields.

Additionally, another robot similar to the TerraSentia is the Rowbot. Just like its name suggests, it travels between rows of corn, and applies nitrogen fertilizer to plants in need. This robot is specifically for corn, but does not mean its impact will not be notable. Corn is the only crop grown in all fifty states, and there are 400 million acres of it growing in the world (Schnitkey, 2015). By giving plants the right nutrients, and inter-seeding cover crops, this device can change corn production not only in the United States, but all over the world. The TerraSentia and the Rowbot are just two of many robots in the field of agriculture today. Many young adults grew up watching futuristic TV shows and movies that contained robots. What better way to prove the viability of agriscience than introducing them to such innovative technologies, which play a role in workforce development?

Now, this brings me to my final point: besides new technologies involved with farming, another appealing factor to millennials would be job security. In an article by Forbes Magazine, "The U.S. Department of Agriculture forecasts that over the next five years the annual demand for college graduates in agriculture and food industries will be 57,900 jobs per year" (Dorfman, 2015). Only a small portion of these jobs is in production agriculture. The rest are either in business and management, education, communication, policy, and STEM fields (Zappa, 2014). In an effort to engage millenials in the field of agriscience, the U.S. Farmers and Ranchers Alliance have one of the most interactive sites for youth and agriculture. They utilize video, social media, and blogging as a means to be transparent about agriculture and alleviate fears millennials have concerning employability (Silva, 2017). From modern day robots to live stream video, there is something for everyone in the field of agriculture.

As the population increases, arable land decreases, resulting in the need to produce more food on less available land. If we as a global society are to make an impact, we must advertise career opportunities within the field of agriculture and assist millenials in understanding their role in providing a sustainable future. In this, the new era of agriculture, showcasing technological advancements along with attractive job opportunities will ultimately be the key to enticing the next generation to pursue agriculture.

References

Dorfman, J. (2015, December 04). Want A Job? Study Food And Agriculture. Retrieved December 15, 2017, from https://www.forbes.com/sites/jeffreydorfman/2015/12/04/want-a-job-study-food-and-agriculture/2/#5ab2b9866b84

Schnitkey, G. (2015, December 1). Revenue and costs for corn, soybeans, wheat, and double-crop soybeans, projected 2015 and 2016. The University of Illinois.

Silva, T. Millennials in agriculture. (2017, November 26). Retrieved December 15, 2017, from https://www.morningagclips.com/millennials-in-agriculture/

Teachable, ultra-compact, autonomous phenotyping robot introduced to investors, market. (n.d.). Retrieved December 15, 2017, from https://news.aces.illinois.edu/news/teachable-ultra-compact-autonomous-phenotyping-robot-introduced-investors-market

TerraSentia. (2017, April 02). Retrieved December 15, 2017, from https://www.earthsense.co/home/

Wright, J. (2015, September 18). Open data: a key to feeding 9 billion people by 2050. USDA. Retrieved November 16, 2015, from http://blogs.usda.gov/2015/09/18/open-data-a-key-to-feeding-9-billion-people-by- 2050/

Zappa, M. (2014, May 05). 15 Emerging Agriculture Technologies That Will Change The World. Retrieved December 15, 2017, from http://www.businessinsider.com/15-emerging-agriculture-technologies-2014-4