

TESTIMONY OF ROBERTO MEZA

**Submitted to the U.S. House of Representatives, Committee on Small Business
Subcommittee on Innovation and Workforce Development**

“Farming in the 21st Century: The Impacts of Agriculture Technology in Rural America”

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Chairman Crow, Ranking Member Balderson, and members of the subcommittee, thank you for the opportunity to testify today.

My name is Roberto Meza. I am a first-generation farmer and co-founder of Emerald Gardens¹, a farm located on 35 acres 15 miles east of Denver in Bennett, Colorado. My business partner and I are piloting an industrial hemp operation and also operate a controlled environment, passive-solar greenhouse in which we cultivate herbs, edible flowers, and over 20 varieties of microgreens. Every week, we harvest more than 300 pounds of microgreens destined for restaurants, grocery stores, other farms' food share programs, food pantries, public schools, and for direct delivery to consumers.

I am a member of Rocky Mountain Farmers Union (RMFU), which represents approximately 20,000 family farmers, ranchers and rural members across Colorado, New Mexico and Wyoming. I am also the Chair of Membership and Outreach of Mile-High Farmers, a co-chapter of Rocky Mountain Farmers Union and the National Young Farmers Coalition (NYFC).

My business partner and I are proud to be growing our small farm business in Colorado with a focus on environmental stewardship, technology, innovation, and community engagement.

Technology, Innovation, and Environmental Stewardship

Microgreens are the primary crop in our farm operation, and they have numerous advantages. They have the potential to be very profitable because they can be grown quickly, have relatively low input needs, and can be grown year-round. Some varieties like cilantro, green basil, and arugula have been shown to contain up to 40 times the nutrient density compared to their mature counterparts, which makes them appealing to increasingly health conscious consumers.² Furthermore, they exhibit beautiful colors, ranging from pink to purple, red to green, and have very distinct flavor profiles. These characteristics make them highly sought-after by chefs, grocery stores, and a growing number of discerning consumers.

We are able to grow year-round because of our greenhouse's passive-solar design. This structure is both energy and economically efficient, and environmentally friendly. It works by using clear polycarbonate on the south-facing side of the structure, which lets in the sun's rays and generates heat; insulation on the three other sides help trap that heat. The heat charges

¹ <https://www.emeraldgardens.farm/>

² Xiao Z, Lester GE, Luo Y, Wang Q. Assessment of vitamin and carotenoid concentrations of emerging food products: edible microgreens. *J Agric Food Chem* (2012) 60:7644. <https://www.ncbi.nlm.nih.gov/pubmed/22812633>

our Ground to Air Heat Transfer System (GAHT), a technology refined by Ceres Greenhouse Solutions, and is based on the principles of a climate battery -- a design that distributes heat through a series of tubes that run below the structure's foundation. This approach sometimes requires the use of supplementary heaters and an evaporative cooling wall, but our climate battery system helps us significantly reduce our reliance on those sources.

Another important technology we use is a 5-tier shelving system with LED lights on the bottom shelves to supplement light during the short days in winter. Growing vertically increases the growing capacity of our 3,000 square foot greenhouse and LED lighting is incredibly energy efficient and cost-effective over the long term. Over the next few weeks we will be installing 40 solar panels to power the lights and fans in the greenhouse.

As Coloradoans know very well, the state closely monitors water supply and use because of the arid climate. Ever conscious of water scarcity, we use an automatic recirculating system that delivers water to our vertical hydroponic growing system for about 2-4 minutes each day, so the roots get only what they need, allowing water to drain back to our main tank through gravity. This reduces evaporation, maintains consistency, and significantly reduces our water use.

Community Engagement and our Local Food System

We believe it is important to participate in strengthening our local communities. Thus, community engagement is a focal point of our business. There are many ways we engage in our local community, including hosting workshops, educating consumers on the importance of eating local food, and the nutritional value of microgreens through in-store demos at our grocery stores. Additionally, we periodically engage in panels and discussions relating to local food systems and food access initiatives, and also helped bring microgreens into food pantries through the Food Pantry Assistance Grant, which incentivizes pantries and food banks to purchase local farm products.

A ubiquitous and essential technology we have come to rely upon to grow our business, build our brand, and reach our community is social media. Our Facebook, Instagram, and Twitter engagement helps us build trust with our customers and community. We have found that by showing people how their food is grown, they form a deeper connection with their food source. Thus, social media supports us in our goal to strengthen our local and regional food system.

This community engagement goes hand-in-hand with our mission to grow food using sustainable and regenerative agriculture principles. These principles are key to protecting the

environment, but also improving the quality of life of farmers and enhancing the communities in which farmers and their customers live.

Challenges and Opportunities

We face many challenges as small business owners. A major puzzle we have been working to solve is optimal distribution of our product. Emerald Gardens is a bootstrapped business, so unsurprisingly we have relied on some relatively low-tech methods of distribution, such as attending farmers markets. But we also have an online “farm stand” so customers can order directly from us for delivery.

For broader distribution, our current solution is a partnership with an innovative local grocery delivery startup, Bondadosa. Bondadosa is a good fit for us because it allows us to deliver to all of our wholesale and retail clients through a single weekly pick-up. We also looked to partner with Bondadosa because of their focus on decreasing food inequality in the state of Colorado by providing free delivery services to underserved communities, offering food items at wholesale prices, and accepting payment through the Supplemental Nutrition Assistance Program (SNAP). Emerald Gardens helps Bondadosa by actively seeking customers at points along their delivery routes that will help them maximize use of their delivery trucks. As we continue to scale our business, we plan to seek the opportunity to work with larger distributors as well.

Another challenge we have faced is accessing the capital we need to build our business. As technology advances, including agricultural technology, it has become increasingly important for today’s farmers to have bachelor’s degrees and graduate educations. Indeed, it is becoming an asset on farms of all types, including our farm. A college education is out of reach for many financially, and student loans are essential. Moreover, the farming population is aging and increasingly children who grew up on farms are not returning. My student loan debt has at times proven a barrier to additional investment in my business, including additional adoption of new technologies. For all of these reasons, and as a first-generation, beginning farmer, I believe a federal student loan debt forgiveness program is essential.

We have benefited from investment in fiber optic in the area where our farm is located and thus have reliable access to high-speed broadband, which is essential for our business. We support continued efforts to ensure competitively priced, high-speed broadband and wireless connectivity for rural America and further development of the fiber optic and cell tower networks in places with no or insufficient coverage.

Emerald Gardens continues to strive to make our business more sustainable and to improve our growing systems. Thus, we are excited by the opportunity to partner in the year ahead with a company that will be piloting new sensors in our facility that will monitor and collect data on environmental conditions. We are hopeful that the data generated by these sensors will allow us to achieve increased precision in delivering optimal water and nutrients to our crops. Support for technologies such as these, which can improve environmental and economic efficiencies for small businesses, are increasingly important for farm businesses in the face of volatile weather and a changing climate.

Conclusion

I want to close by saying that innovation is born of struggle. While we face a myriad of challenges as small farmers and small business owners, we remain committed to a mission of feeding our communities while remaining careful stewards of Colorado's natural environment. Innovative technologies, both high-tech and low-tech, are helping us get there. We are problem solvers who have used grit, determination, and technological savvy to create a market for our products and to work toward building a viable business that we hope can be a part of changing our food system for the better.

We believe in taking a comprehensive approach to our farming operation by engaging in policy conversations and development. That is why we actively participate in food policy councils, food cooperatives, food access initiatives, and why we are members of the National Farmers Union, Rocky Mountain Farmers Union, and Mile-High Farmers. This is also why we're so glad to have the opportunity to talk to you today.

Thank you for the opportunity to testify. I look forward to your questions.