

Of all the professions or industries in the world, the one society can ill afford to lose is agriculture. Without food society cannot exist, especially in cities. The reason cities are becoming larger and larger is due to the efficiency of farmers and ranchers the world over. There is a huge disconnect however between agriculturists and their city cousins that creates a detrimental atmosphere for farmers and ranchers to do their job. Pressures placed on agriculture, either realized or unrealized has created a rift to protecting the most essential industry I love... agriculture.

While there are many issues I can focus on I want to highlight the reduction of dollars over the decades in the United States for agriculture research. This is a travesty, especially when competing nations are increasing their agriculture research spending.

Why do I believe this is critical to focus on? The continuous attacks, the Farm Bill being used as a political football, and the lack of protection for an endangered species (farmers and ranchers) has led directly to the decline of the agriculture population. It is getting harder and harder each year to farm and trying to keep a positive outlook in the face of the challenges; challenges that become daunting. The slightest gain in production or cost reduction can make or break a farm.

Bob Lowder and I checking a remote weather station.

Research has been an important part of the farm's legacy that started with my opa (German for grandfather) and passed along to my sons. I am proud that I have been able to see and touch the past through my opa's soil testing kit to him grafting a pear branch onto an apple tree...and it's still producing fruit today.

I have made field level research a priority on my farm. Over the years I have done multiple tests from nutrient management to target what rate of nitrogen is best for a specific management zone to wheat variety trials to identify which one will grow best on my farm. I have worked with family, Ag companies, individuals, and the University of Idaho. All bring a

wealth of knowledge that I can utilize. My boys have asked some interesting questions over the years.

Posing with a drone I built in 2008 to carry four cameras

The craziest thing I did was take precision agriculture to a new level; literally.

I started out in 2003 with a PDA to do simple mapping which evolved into yield monitors, auto steer, and boom control. When I saw an ad about a UAV for agriculture in 2006 it was love at first sight and I haven't looked back. However, I'm still trying to find the answer to the same question my opa was trying to find...how to better our soils and production.

You might ask why would a young farmer (agriculture definition is under age 35) look at that ad and think it's the next sliced bread or peanut butter?

Because we know more about the surface of the moon than we do about specifics of our soils and how crops can react to different management techniques. The sad truth is trillions of dollars are spent annually for or against environmental activism globally that could be put to better use in Ag research.

The declining Ag research trend in the U.S. needs to change and I believe drones will lead that change today and in the future.

My grandfather's soil testing kit with literature.

We are in the Information Age and drones can be the go to tool in the agriculture toolbox to better understand how soils and plants can react positively through better management decisions. The tremendous amount of activism dollars would serve society better being spent doing actual agriculture research that can make a real impact on environmental issues.

Lack of permanent FAA drone rules for commercial use has held back funding at all levels into drone implementation and development of drone systems (hardware, software, and payloads). That is changing because there is light at the end of the tunnel.

Where we are today in the commercial drone industry will be drastically different in five years, especially in the United States. And I believe the difference will be for the better.

However the agriculture and drone industries at all levels need to come together and make a “shopping list” of what the challenges are and what is needed to overcome those challenges. Challenges both public and private. Challenges of politicians, regulators, researchers, growers, manufacturers, and service providers.

Dillon Blair and I doing catch traps for wireworm

The drone industry needs to grow with agriculture, not force it to change. We have to educate those that don't understand the benefits this technology can provide at all levels of society. We have to be willing to listen to the needs of those at the field level. And, in order to improve we have to do our research.

We have to invest dollars into the agriculture industry for research because without scientific numbers and data it's just another opinion. We have to work with those in agriculture to help government understand the importance of research dollars; dollars that can help both agriculture and commercial UAS grow.

Hired man Dean King, Logan Blair, & Dillon Blair marking test strips.

What we create and do today will have a tremendous impact on the generation following us. What we think is groundbreaking now will be the norm for tomorrow, but we have to be diligent and thoughtful in that research and development. We need to work together to understand instead of standing and pointing fingers.

If we can do that then the soil won't be the limit, but the sky. If we can bring it all together

new efficiencies will sprout that creates a win-win for all of society; a society that will hopefully appreciate agriculture instead of condemning and exploiting it.

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