

Wolverine Drone Services – Revolutionizing Farming with Drones that Spray Crops When Needed



Jeff Whiting
Owner and Operator

Wolverine Drone Services

Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine

CEOCFO: *Mr. Whiting, one of the first things I see on the Wolverine website is "Revolutionize Your Land With Drone Spraying." What does that mean for you at Wolverine?*

Mr. Whiting: What does it mean to be in this industry for agricultural farmers and facing the ever-growing new technologies that are coming out daily, is exactly why I use the word 'revolutionize.' Most farmers have been traditionally using ground rigs or airplanes for so long that drone technology is now another tool and resource in their farming operation. As they become confident with drones they will learn to know when and where to utilize this technology. Drones will provide efficiency, protection, and higher yields on their crops.

I use the word 'efficient' because when you have bad weather conditions. There may be a significant amount of rain and farmers have to wait for dry conditions. They might have dry conditions for two or three days but it still may not allow them to get back into their field, then possibly more bad weather may come in. Drone technology is able to revolutionize the ability to spray crops as soon as rain stops by having the ability to fly over the crop immediately.

Drones are becoming another tool and another option for timely spraying when it is needed for their crops.

CEOCFO: *What led to your interest in drones?*

Mr. Whiting: I did not have a background in drones when I became interested at the time. I was working on a corporate job. However, I married into a farming family over thirty years ago, and have a brother-in-law and father-in-law who farm approximately 1000 acres. I explained to them what I had been seeing in YouTube videos. I started to pursue the educational aspects of it and found out this was going to be technology that is only going to continue to get better for farmers and that is how I started the company.

I investigated to see what was required to become certified as a drone operator and establish a company in this industry. There are a lot of regulations the government has put in place for drone applicators to put pesticides in the air. As I pursued certifications my company came to be after meeting the necessary requirements.

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CEO CFO: *How have drones being used in agriculture changed over time?*

Mr. Whiting: The things that have changed from what I have seen especially talking to those that got involved three or four years ago even is that the software capabilities for these drones have greatly improved. The drones can fly better autonomously; they can do the tasks that have been programmed more efficiently. I would say it's a smoother operation and will only get better over time. The drones are still relatively small in their payload capacity. For farmers that is part of the educational process. They are used to using ground rigs that may have a thousand-gallon tank with their boom sprayers and now you are explaining to them that you are using a drone that might have a five-gallon tank or a ten-and-a-half-gallon tank. Some drones are a little bigger than that but it is the education process to teach them the chemicals applied with these smaller tanks on drones will provide the results they see with a thousand gallon tank on a ground rig. As software upgrade changes with drones they will become more efficient and have greater capacity to carry larger payload. Drones will eventually become standard for big and small farmers.

CEO CFO: *Would you give us a few examples of different engagements?*

Mr. Whiting: When I receive a phone call, I first ask them what they are trying to accomplish. For some of these growers, I will use corn as an example; fungicide season in the state of Michigan, where I am located is usually in late July and into August, so farmers are putting fungicides on to protect their crops. This past year tar spot was a major disease they were trying to avoid on their corn. Some may start to spray when they see the disease.

I am trying to find out whether they are trying to prevent, or are they trying to eliminate the issue. Another situation is I did some dry beans for a farmer in the area where they were trying to prevent weeds from growing and they had to do it at a particular time. This past year, we had a hurricane down in Texas. All that rain was now moving through the Midwest coming north and the farmers knew they were not going to be able to get into their fields.

This goes back to what I mentioned earlier where they were not going to be able to use their ground rigs, so that is where the drone came into play. Those rains came through and yet they used my company and drone technology to be able to have their fields treated with a herbicide.

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CEO CFO: *After you find out what people need, what do you have to know before the drone goes up?*

Mr. Whiting: The first thing I need to know is what product they plan on utilizing in this application because as a drone applicator, I have to verify that the product meets the requirements to be applied by Aerial. Drones are no different than airplanes; we only can apply a product that says on the label that it can be used by air or is not prohibited to be spread by aerial. Then what I need to know is the products they need to have applied. They may put an insecticide in there, so we need to have the ounces that need to be applied per acre so we make sure the mix is exactly how the farmer wants it to be.

I explain to all customers I deal with is to have them write out exactly the products they want to have mixed and how many ounces per acre so that it is not me making those numbers up as the applicator. Most deal with a chemical rep., but as the applicator I'm still responsible for everything I spray. I mix according to their instruction, as long as it meets the manufactured label guidelines.

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CEOFCO: *When you are speaking with a potential client, do they understand how you are trying to help them refine what they need?*

Mr. Whiting: Drones are still in their infancy. Even though drones have been out for five or six years now, it is still growing and they are new to some and may not have any experience with drones. A lot of farmers have seen demos at different shows they have attended but have not seen it in action for their farming operation. It is the question of doubt in their mind on whether it will work because they are spending a lot of money in protecting their crops. Do they trust drones will provide the adequate coverage and results when they have used traditional measures for so long. It's hard to change to newer technology. I am only at the beginning of utilizing this technology. I am getting more and more experience with the farmers that I deal with and I can now voice that to these new farmers that have not seen it used.

Most of these farmers are starting to talk to someone about drones. This is helping me as an applicator in a drone business. They are educating each other based on their experiences and I don't have to feel I have to convince that farmer drones will work. When farmers hear from other farmers say they had great results with drones I usually will receive a call to spray their crops. The credibility comes from the farming community and once they use it, I do not see farmers going back to not using drones.

CEOFCO: *Tell us about the advanced capabilities of your drones? How do you prepare for the drone event?*

Mr. Whiting: If we show up at a farm and field we are going to take our drone and fly the boundary of that entire field. We have the capabilities with the technology to use a satellite image on our controllers and we can map that field by hand on our controller but we like to fly it. It allows us to see through the camera the obstacles, which is something you can't see on a satellite image if the image is an older picture. Once we fly it, that boundary can now be mapped. We can take that boundary and adjust it manually as well. These are the first steps we do when we arrive at the field. Then we will map the field to spray in the most efficient route.

We are determining what is going to allow us to be most efficient from a time standpoint for our drones to go out, empty their payload, return to home and refill. Our batteries last about ten minutes. Once we have mapped the fields and know the drones are all in working order it's time to have the chemical tanks are properly mixed. We are then good to go and we start to fly. Just like any operation in any industry, you could have a lawn service business and you could have a lawn mower that has a problem, drones are no different, they are equipment. That is why we carry extra batteries and extra propellers, etc. We try to carry some of the simple things. You might have a pump seal that goes bad and you need to change it, so we are trying to be prepared for what may happen during our flight operation.

CEOFCO: *How low to the ground is the drone?*

Mr. Whiting: We will fly approximately ten to twelve feet, which is the average. The label of the product being applied will provide the proper height to apply the chemical. These drones as they fly have the capability with the technology to determine if it is keeping that height. When you are flying over a cornfield and you have rolling terrain and is not completely flat, the drone may be going up and down on that terrain. Why I say ten to twelve feet is it hits a little dip and it has to adjust for that and vice versa as it comes up. If you hit a steep hill the drones have obstacle avoidance so that it can continue and if it is a hill it can stop. It has those capabilities to adjust during its flight so it can continue flying its task.

CEOFCO: *What has changed over time at Wolverine Drone Services?*

Mr. Whiting: My advice to anyone listening to this and if they are in the drone business and especially doing the agricultural fields with bigger drones, you develop a process and protocol within your team. What I mean by that is it is easy when you have multiple drones flying. My son is certified to operate these drones and it is easy to have a drone come in, and then you hand off a controller to that individual and say 'Take over,' do not ever do that. If you are flying multiple drones, you have to have one operator who is responsible for that drone throughout the entire operation for the day. Go through a checklist and make sure there is always one person responsible for each drone that is flying.

It is too easy to think its just a drone and you won't have any problems. This is serious business and there is a reason you are not supposed to fly drones over people because things can go wrong. We are thinking we won't lose the signal because we are out in the open area, no, you can lose a signal from a tree line that is in the way or some other obstacle. You need to be attentive at all times while flying these drones.

CEOCFO: *On your website you list several areas such as residential, ditches, runways, airports, and landscapes. What are you thinking of as far as your expansion residential, ditches, runways, airports, landscapes?*

Mr. Whiting: To expand in those areas, I am working on those certifications. I now have some of those certifications and hopefully, over this next year we will be able to work on right-of-ways. For example, I contacted a local county in our area and talked to their drain commissioner and they are exploring the use of drones. They said they would love to use the technology which would probably not only help spray those right-of-ways and ditches without using ground rigs but it would probably be faster using the drone, but also using a drone to inspect right-of-ways and drainage areas as a scouting tool. Those are the areas we are trying to get into. We talked to golf courses for their turf grass management. There is no difference in spraying in agricultural fields than using a drone on a golf course. There many applications where a drone can be appropriate, such as, mosquitoes, spraying greenhouses to block the sun, aquatics, and many more.

There are so many options that a drone could be used for and it opens up the doors for me as an operator. The more services I'm able to provide allows me to help different industries and hopefully develop a marketplace within the area we service.

CEOCFO: *Your enthusiasm for what you are doing comes through loud and clear; did you anticipate how much you would enjoy Wolverine Drone Services?*

Mr. Whiting: Some people have talked with me and said they hear the enthusiasm in my voice and the excitement. The old saying of doing something you love to do and it won't ever feel like work. I did not know what to expect. I jumped into something that I never thought I would be doing and here I have established a business. There is work involved in this, if someone thinks this is something you are going to do 9-5 or 8-4 in a day; they are going to be in the wrong business. When farmers need you to do this it is 24/7, 365 days a year. When they need you, you will start as soon as you're able to spray after daylight. Equipment needs proper cleaning, not just the drones but chemical tanks, pumps, hoses, etc.

There were times I was back at our farm where we store the truck and drones at 11:00 at night. We were cleaning our equipment no matter how late it got. What I remember is coming home and telling my wife that it did not feel like it was 11:00 at night because no one was telling me I had to be there. I believe that is why I have the enthusiasm that comes through when I'm talking to people because I enjoy what I am doing and know I am helping farmers with new technology.