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There are many significant benefits of agriculture aviation. First, there is more versatility in application options because of crop dusting—the act of putting out chemicals by plane results in better coverage than other forms of application. Aerial application has come a long way since it began in 1921. “In the early days, aerial applicators were known as ‘crop dusters’ because they worked with dry chemicals, mostly insecticides” (www.agaviation.org). The industry itself has changed drastically over time, but so have the actual chemicals that are put out by the plane.

Even though the spray rig was invented twenty years after the idea to use planes to ‘dust fields’ in 1947, it became a much more popular way to put out different types of chemicals amongst crops. Most agriculture businesses only offer the option for ground rigs. It is a great advantage to those companies that provide aerial application. The agriculture pilot industry is tiny across the country. There are roughly 3,400 pilots who are actively working in the field. In any industry, all customers want options and a variety of things to be able to choose from. Because of aerial application, it gives a second option to farmers and landlords for free choice of how they want the chemicals to be put out over their land. Aviation also provides a different financial alternative to the owners since it is more expensive than the traditional ground spray rig.

One benefit that makes aerial application more appealing to customers is the timeliness of the application process. “At a minimum, an airplane or helicopter can accomplish three times as much application work as any other application can” (www.agaviation.org). Time is a huge factor when the decision needs to be made for which application the customer would like to have done on their field. Aviation application is proven to be a much faster process to get the job done. If a farmer's field is wet but needs to be sprayed, a standard ground spray rig can not get into the field and get the job done. This is important because once pests begin to destroy a crop, it must

be tended to as soon as possible. Agriculture aviation is the best way to get to fields like this before the pests completely take over and ruin the whole crop. If the farmer does not have access to aviation, they are left to hope that the field can dry fast enough to get in before the pests ruin and take over the crop. Flooded roads or wet fields do not stop planes and helicopters. They do not damage the field when it is wet. Unlike ground rigs, if they were to go into wet fields, it would ruin the topsoil and cause runoff. Therefore it is possible to still spray such fields during those conditions by plane or helicopter. Having a much faster application time other than traditional ground spray rigs is also a huge benefit for the aviators. They get the work done a lot faster and therefore can bring in more business due to the efficiency and effectiveness of their work.

Agriculture aviation also provides better coverage while being applied. This is because the molecules that come out of the spray boom are much smaller than an average particle. This causes the chemical to appear and act like a fog over the crop. This causes the same chemical to work better and become more effective due to the size of the water droplet. A traditional ground spray rig is not as effective because it does not produce as good of coverage of the crop. Fine droplets cover the top of the soil where the chemical is being applied more consistently.

Agriculture aviation is also more than just applying chemicals to farms. The aviators help stop the spread of mosquitoes by spraying different towns and civilizations to be rid of them. It targets the mosquitoes mid-flight in the air and terminates them. This is an essential service to offer because it could help stop the spread of deadly diseases very quickly and efficiently. Even though we do not have to deal with the fatal diseases that are carried by mosquitoes in the United States very often, it is a great resource to use if that issue does arise in America. Agriculture aviation is also a vital tool to stop the spread of wildfires in the forest. Wildfires spread

incredibly quickly, and many times the only thing that can cover the area fast enough is a plane traveling fast and not in the direct pathline of the fire. These planes and helicopters spray fire suppressing compounds by creating lines with them to create a barrier to stop the fire from spreading in that same direction. This is proven to be one of the fastest and most effective ways to prevent the spread of major wildfires in the forests.

Agriculture aviation has been getting more popular in countries with low agricultural production. Countries like Nigeria and Brazil at one time had extremely rich soil, but over many years the soil has been drained of the nutrients it once held. Researchers have begun to look into ways to solve this issue and get the soil back to its best. Aviation is a tool that they have looked into for this project. Planes can be used to start the revitalization of soils in places where little technology has ever been used before. Putting nutrients back into the neglected land and beginning to grow healthier crops in low production areas is a way that agriculture aviation is helping to reduce poverty and hunger around the world.

Agriculture aviation is an essential factor within the agriculture industry and has many different uses, all from planes and helicopters. Crop dusting gives farmers and landlords an extra option to how the chemicals are applied to their field. As well as an application option, agricultural aviation provides the customer with a selection of financial options to consider. When time is crucial to the crop's success, aviation once again provides a quicker way for chemicals to be applied. When a traditional ground rig cannot get into the field because it is too wet and will ruin the soil, planes, and helicopters make light work of it. Airplanes and helicopters spread the chemicals more efficiently by spraying fog over the crop, effectively applying the substances. Some little-known sides of agriculture aviation are mosquito repellent, disease prevention, and firefighting. In addition to all this, aviators are beginning to be used to



prevent poverty and hunger in poorer countries. All of these things show how much of an impact agriculture aviation has on our society.

Works Cited

“The Industry's History.” *National Agricultural Aviation Association*, Naylor Association Management Software, <https://www.agaviation.org/industryhistory>.