

The Use Of The Helicopter In Applying Herbicides To Aquatic Weeds

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The use of the helicopter in applying herbicides to aquatic weeds has many advantages. We have in this unique aeronautical contraption the ability to perform tasks which are yet to be considered. The helicopter is a versatile mobile platform. The machine is being perfected and refined on a day to day basis, however, perhaps it would be more informative to dwell on "how not" to use the helicopter.

Not long ago chemical manufacturers spent millions of dollars researching and developing new and better herbicides. These sophisticated materials were then sold through costly advertising and sales campaigns. Yet, ironically, these expensive products were applied through some of the most antiquated plumbing devices in the country. Now this is changing, and changing rapidly. Leading manufacturers see the importance of their products being applied through proper spray devices. Some of the most refined spray systems ever imagined have been developed by leading manufacturers such as Amchem, Dow and Hercules. The giants know the importance of their product being applied properly. It does not stretch the imagination to see that the product is no better than the application.

KNOW YOUR APPLICATOR

The helicopter is certainly ready, the chemical has been developed, and the spray systems are now acceptable. However, we have a problem in lack of experienced herbicide spray pilots. Due to the expansion in rotary wing training, brought on by the war in Viet Nam, the availability of trained helicopter pilots is very bright. However, experienced pilots with a background in herbicide spraying are few. It does not sound reasonable that the application of these technical materials would be placed in the hands of the inexperienced. Yet the chemical manufacturers have, in the past, often done just that. Everyone is now taking a closer look at the "nut who holds the stick." When selecting a pilot, take nothing for granted, inquire into his background and ask for customer references. The pilot should be approved by the customer personally, since he will be paying for the claims if the pilot makes an error. If he is operating one of the refined devices developed by a chemical company, then we would assume they have given him a pretty good looking over prior to authorizing the use of their equipment. But have they? I doubt it. The operator with whom they have been dealing for a number of years could have expanded and this may be a new pilot just out of the military. Too few operators run a very comprehensive training program. **KNOW YOUR PILOT. KNOW HIS BOSS.**

Through lack of experience or lack of judgment, applicators will do foolish things, such as spray in windy conditions. "I bid this job too low," will most likely be his thought. He is trying to cover 2,000 acres in five days be-

cause the income on the job is so low he has to hurry to the next job before the season is over. There he finds to his dismay that he still must hurry or lose money. The old aviation phrase relating to green pilots with little respect for weather states:

"It is better to be down here wishing you were up there, than to be up there wishing you were down here."

In herbicide spraying the last line could read, "than to be in court wishing you had stayed down here." I certainly don't intend to "knock" aerial applicators. Some have done outstanding work and are successful businessmen. But, if the shoe fits wear it.

AVOID THE VORTEX

The aerodynamic characteristics of the helicopter's rotor system creates what is referred to as "blade tip vortices." The turbulent tornado-shaped wind tunnels trail aft of the helicopter's main rotor blade tips and are similar in shape to a small "dust devil" laid in the horizontal. As the forward speed of the helicopter is increased, the vortices tend to become more horizontal, and by reducing speed, they will move to the vertical.

Due to the extreme turbulent air created, the vortices should be considered as an undesirable area in which to introduce the herbicide spray. Most helicopter operators use the vortices to an advantage when applying insecticide to gain additional swath widths of up to 150 feet, but herbicides should never be applied by this method.

Another important point is the ability of the helicopter to reverse its direction, or make a spray turn in a matter of 5 to 10 seconds. Considering the possibility of small particles of spray still suspended from the initial spray run, a rapid "ag-turn" is not desirable when applying herbicides, since the sudden rush of air from the main rotors will blast the still suspended droplets for a considerable distance laterally from the direction of flight. Most experienced helicopter operators are aware of these characteristics and take the necessary precautions to avoid these dangerous pit falls. Again let me stress: **KNOW YOUR PILOT. KNOW HIS BOSS.**

THE INVERSION

Seldom is it noticeable to those not actually engaged in flying, but an inversion spells trouble for the uninformed aerial applicator. An inversion is a weather condition which exists occasionally in small isolated areas. It takes place when the cool evening air spills into low lying areas and causes the warm moist air to be displaced above it; thus causing an inversion. These conditions are most pronounced when light patches of early morning ground fog are evident. The experienced pilot will recognize this

condition and immediately cease spray operations for a few hours until normal weather prevails.

Herbicides should never be applied when an inversion exists as particles of spray are caught up in the warm moist air above (which usually is 20 to 30 feet above ground) and sometimes carried three to four miles by upper air currents before being released. Needless to say, this is certainly not desirable when applying herbicides.

This is not a complicated business. It is difficult, it requires an average degree of intelligence, a look at the

job, and a reasonable price upon which both parties can agree is profitable and economical.

It is absolutely stupid, (and I realize the implication of that adjective), to allow herbicides to be applied by incompetent, inexperienced, ill equipped applicators. Every little droplet of herbicide, when applied properly, will return a savings that far exceeds the best blue chip stock on the market. Take advantage of these dividends and enjoy their returns.