

June, 2005



# The Windssock

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## How can we increase the efficiency of Aerial Application?

*By Alan McCracken*

The majority of agrochemical products are applied as liquid sprays, with the concept of distributing the liquid uniformly over the **target area** as opposed to the "**specific target**", be it weeds, insects or fungal disease. (There is only one example from my perspective that requires the product to be distributed over the surface area and that is for herbicides requiring incorporation into the soil.)

The most important step in being "target specific", is the selection of the correct droplet size. We must match the product being applied to the target crop, rather than to specify volumes per acre.

### **Match the Droplet Size to the Target:**

This concept was originally developed by a Mr. E. Bals of Micron Sprayers and termed Controlled Droplet Application (C.D.A.) which means producing only the optimum sizes of spray droplet for the particular application.

This idea became reality with the development of specifically designed spinning disc rotary atomizers in the early 1960's which break up the spray liquid into a narrow range of spray

droplet sizes. Since then many engineers around the world have recognized the advantages of the concept and have developed numerous versions of rotary atomizers for both hand use and for agricultural aircraft.

The manufacturers of the rotary atomizers have scientific models developed from wind tunnel tests to predict the spray droplet size from the inputs of swath width, speed and number of atomizers.

### **Action of the Product:**

When deciding what droplet size to use we should also check on the mode of action of the chemical product to be applied. As mentioned in my previous article, if we are applying a product with only "contact action" then we must recognize that we can only achieve good control if we deliver the product to the target. Any product that is not delivered to the target is product lost, resulting in undesirable environmental contamination.

How do we know where we are delivering the product?

### **Spray Deposition Analysis:**

An analysis of the droplet spectrum is currently done by using horizontal water sensitive paper cards. Subsequent computer calculations determine the actual amount recovered.

From a scientific perspective, ALL product collected on horizontal collection devices (such as these water sensitive cards or other mediums) in the base of the crop is a measure of the product LOST. Lost product results in soil contamination, except in the case of a herbicide for incorporation.

### **Where do we want to deliver the product? To the soil or the foliage?**

One of the best examples I have witnessed was an application of a biological insecticide product in rice. The grower requested my assistance in improving insect control and to increase operating efficiency of a Dromader M18 aircraft. Prior to my visit, he was considering increasing the spray volume from 3 to 5 gallons per acre because of poor results in the past. I asked what was the mode of action and if he wanted the product in the irrigation water or on the rice foliage. He replied that the product was systemic and he wanted it all on the foliage.

### **An interesting experience followed.**

We conducted an application at 3-gallons after placing water sensitive papers horizontally on floating pieces of wood within the crop. We also attached strips of paper to the leaves.

*Cont. on page 2*

## PRESIDENT'S MESSAGE

BY JAMES SPENCE

Wow... as I finish writing this, late as usual, it is practically June already! There is very little to actually report from the 4A's Board at this time of the year. Our next scheduled meeting is still more than 3 months away but all the AGM planning is still moving forward smoothly. Look for interesting speakers, license re-certification credits, fun entertainment and good food and company again this AGM. The Lethbridge Rocketry Association is hosting the LDRS24 rocketry event (<http://ldrs24.com>) July 14<sup>th</sup> to 19<sup>th</sup> and could cause some problems for southern Alberta applicators. The 4A's has made every effort to make sure this doesn't affect your ability to provide application services on the scheduled event days – stay tuned for more information. Weather delayed some CAP clinics, not just in Alberta, but hopefully everyone is calibrated now. Wet & cool weather in some parts of Alberta has now turned to hot summer type days so watch out for those pesky grasshoppers still.

Bugs! "Will there be bugs this year", is the words on everyone's tongue these days. Experts are hedging their bets on insect pest forecasts this year it seems but hopefully we will all get more bug acres than last year! I have heard of some applicators being contacted about customers wanting to book and pre-pay for fungicide spraying and wanting a guaranteed discounted application rate. If only every customer would call us before the start of the season and offer to pay for their spraying beforehand! Unfortunately this is the exception to the rule and many applicators are struggling, after a 'less than stellar' 2004 season, to keep everyone motivated (including their bankers) about the 2005 season.

Personally, Jen and I have been very busy with the early arrival of our son, Ethan David Spence. Ethan was born May 5<sup>th</sup>, nearly 3 weeks early, at 7 lbs 11 ¼ ounces and 19 inches. Thankfully, he is healthy and mom is recovering nicely! What a treat it will be for young Ethan to get flying and spraying tips from both his Grandpa's. Well, I should get back to work now... have a safe and profitable season this year!

*Cont. from page 1*

The technical team observed excellent coverage on the horizontal papers; very few droplets appeared on the vertical paper.

**Conclusion:** The greater part of the spray was falling into the rice water and only a minimal amount on the foliage. That is, a significant portion of the spray volume was being wasted.

**Solution:** My solution to this problem was to significantly reduce the droplet size, permitting a reduction in spray volume to 1.5 gallons per acre. We subsequently repeated the test.

**Outcome:** To the astonishment of the local agronomist, the test demonstrated that with the smaller droplets we had recovered dramatically fewer droplets on the horizontal cards and achieved many more droplets on the vertical cards.

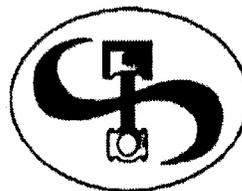
And this reduction in spray volume and in droplet size enabled the aircraft to treat a swath some 15 feet wider with excellent coverage!

Imagine the M18 owner: He was able to treat a significantly larger area per day, reducing his fuel costs per acre, combined with a major economy in the transport of water, plus an improvement in biological control of the target pests.

*This article provided by Yorkton Aircraft Service Ltd. In this article Alan McCracken shares a field experience where he concentrated on droplet size not volume to get superior coverage.*

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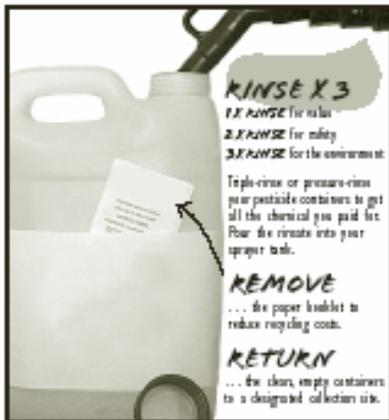
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Thank you for returning your empty pesticide containers for recycling!  
**BUT PLEASE:**

# BRING THEM BACK **clean**

\*pesticide containers up to 23 L



Containers that aren't thoroughly rinsed and drained contaminate all the rest - resulting in significantly higher recycling costs



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Canada leads the world in this recycling initiative, with over 70% of all containers being returned – more than 60 million so far – but there is room for improvement. Not all containers returned are completely clean. Those that aren't rinsed and drained contaminate all the rest, resulting in a 'Hazardous Recyclable Waste' designation and significantly higher recycling costs.

Growers are urged to follow the 3Rs of the

pesticide container recycling program:

- 1) pressure rinse or triple-rinse containers (up to 23 L) thoroughly to eliminate all pesticide residue;
- 2) remove paper booklets, sleeves and caps;
- 3) return the clean, empty containers to your regional collection site.

Please do your part to create a healthier, safer rural environment and **Bring Them Back Clean.**

For more information, visit the CropLife Canada Website at [www.croplife.ca](http://www.croplife.ca) or contact Cam Davreux at CropLife Canada (telephone 416-622-9771, fax 416-622-6764).

### 2005 AGM Scheduled in Red Deer

The 2005 Alberta Aerial Applicators Association Annual General Meeting will be held on November 14 & 15, 2005 at the Red Deer Lodge. Several Licence Re-certification credits are scheduled along with exhibitors and entertainment. Mark the dates on your calendar and watch for more information and registration forms mailed in early fall.



**IT's A BOY**  
**Congratulations to James & Jennifer Spence**

**on the birth of their son Ethan David Spence. Congratulations to the happy grandparents Terry & Beverley Spence and Brian & Shari Kinniburgh.**

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### WEATHERMAX APPROVED FOR AERIAL APPLICATION

Monsanto Canada has notified the CAAA the PMRA approved the pre-harvest aerial registration for WeatherMax. French and English labels are available through the CAAA office. This approval was probably too late to be included in the 2005 label booklets, however the label is the approved text, and can be used to justify pre-harvest aerial applications with the product.

## Dollars & Sense of Aerial Spraying

Field trials completed last year in Manitoba illustrated yields with aerial application are as good as or better than ground application on canola, wheat beans and potatoes. This is the second trial in ten years that illustrated yields were better overall with aerial application. The data from the trials has been compiled and published in a brochure for use by aerial applicators. The brochure provides applicators with an excellent marketing tool to promote their services to producers. The brochure is available through the CAAA office at \$1.00 per copy. The trials were independently conducted by AXYS Agronomics and supported by Manitoba Aerial Applicators Association, BASF Canada Inc., Arty's Air Service, Bestland Agro, Jonair (1988) Ltd., Morse Bros., Roland Air Spray, and Westman Aerial Spraying Ltd. For more information contact the

### Altair ECTM's

For Distribution and/or Sales of Altair ECTM's contact Terry Spence at Bonnyville Air Services (1980) Ltd. at 780-826-6885.

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## Calendar of Events

### COPA Convention

June 24 – 26, 2005

Wetaskiwin Alberta

780-352-5858

email: [airport@wetaskiwin.ca](mailto:airport@wetaskiwin.ca)

AAAA AGM – 2005

Red Deer, AB

November 14 & 15, 2005

CAAA AGM – 2006

Delta Regina Hotel

Regina, Saskatchewan

February 22 – 24, 2006