Research reveals the truth about spray drift

COLLABORATIVE research into the problem of spray drift has begun delivering practical insights into how spray nozzle and adjuvant choices can affect droplet size.

Initiated in 2006 by Vicchem, Australian pioneer of adjuvant technology, the project is a collaboration involving Dr Andrew Hewitt of Queensland University and a leading agribusiness distributor in the US.

According to Vicchem technical manager, Peter Jones, the research is helping reveal the truth about spray drift which can lead to expensive litigation and even calls to restrict or ban the use of certain chemicals.

"Our research shows a significant variation in particle size and distribution among the adjuvants commonly used to enhance crop protection," said Peter from Coolaroo, Victoria.

"We've observed that wetting agents such as BS1000* and Deluge 1000 generally produce smaller droplets while LI-700* and VC-700 increases droplet size.

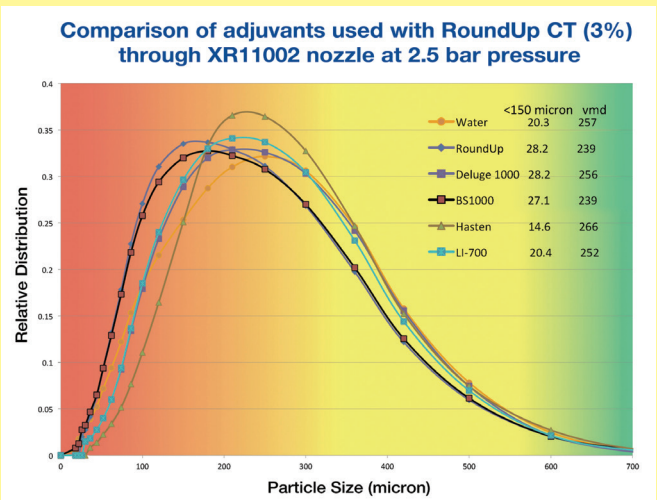
"Encouragingly, our oil-based adjuvant Hasten increases droplet size and produces one of the lowest proportions of small driftable particles (less than 150 micron)."

While the data on product performance is informative, Peter urged farmers and crop advisors not to rely solely on adjuvant choice to manage drift problems as its role in the whole drift equation was relatively small.

"Our research shows that selection of nozzle type and size has a far greater impact on droplet size which can range from very fine to very coarse depending on the combination chosen. It's a much bigger determinant of droplet size than adjuvant type.

"Of course, climatic conditions including wind speed and direction obviously have the largest bearing on spray drift and the potential for negative off-target effects."

FIGURE 1: The graph shows adjuvant choice can influence the droplet size when added to solution containing the herbicide RoundUp* CT



While wetting agents such as BS1000 and Deluge 1000 produce smaller droplets and LI-700 has the effect of increasing droplet size, oil-based Hasten increases droplet size and produces the least proportion of small driftable particles (<150 micron).

Peter said the trial was initiated in response to industry demand for greater understanding of droplet size and its role in spray drift, particularly from Vicchem's reseller partners and their farmer customers.

"This project is a credible way of testing the veracity of the many claims made by manufacturers – as well as our own claims – which has become more important with the rising influx of generic imports.

"As a market leader, we feel it's our responsibility to be at the forefront of technical knowledge with all claims backed by sound science.

"Future research will focus on the effect different adjuvants may have on beneficial insects. Aquatic toxicity is another interesting area, because while adjuvants generally appear to present few environmental concerns, that's not to say there aren't stewardship issues that could be addressed."

Peter said that while Vicchem's research aimed to be economically beneficial, it was often a lengthy process of exploring and refining in order to develop the right chemistry for a breakthrough that benefits the industry.

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Vicchem technical manager, Peter Jones, with research chemist, John Morrison, in the laboratory at Coolaroo, Victoria.