

Spray Application Management

Phil Hurst, Executive Officer
Aerial Agricultural Association of Australia

Spray Management

- Drift is a reality in all spraying - both ground and air
- The physical act of forcing a chemical through a nozzle or atomizer, either in an aircraft or ground rig, will create fine droplets as part of the spectrum and these droplets are susceptible to drift
- We must **manage** our spray and drift
- Technology is a compromise between:
 - efficacy
 - unwanted impacts - such as drift
- Management must fill the gap created by this compromise
- If it is not in control - it is out of control

Who Must Manage?

- This is now a team effort
- Shared responsibility
- NSW Pesticide Act ensures this
- Qld ACDC Act currently under review
- The team is:
 - the grower
 - the consultant
 - the applicator

Some key policy issues

- Shared responsibility
- Education/training/competency
- Neighbour notification
- Buffer/awareness zones
- Access to chemicals - 'authorised person'
- Record keeping
- All these were part of the endosulfan label last season

What has endosulfan shown us?

- We have the power to manage our spray well
- By good pre-season planning problems can be eliminated or controlled
- Spray and drift management plans are essential
- Communication is the key

What has come out of endo?

- Recognition of the positive role our sectors have played by the NRA and others
- Recognition that last season was different, with low bug pressure, depressed prices
- Efficacy issues with LDP
- Political pressure for the banning of ULV
- This season is another big 'test' for us

Droplet Behaviour

- Aim is to get chemical droplets onto target
 - without other problems e.g. drift
- Droplets form in a spectrum which includes big and small droplets
- Small droplets (<120 μ VMD - volume median diameter) do a great job but are prone to drift
- Large droplets (>250 μ VMD) fall faster and are less prone to drift

Ultra Low Volume

- Uses mostly rotary atomisers to create a fine spray that moves with turbulence to penetrate the canopy well
- Does an excellent efficacious job
- But is prone to drift, especially depending on met conditions (wind, inversions)

Large Droplet Placement

- LDP is a technique using mostly hydraulic nozzles to create larger droplets less prone to drift
- The spectrum still includes fines, but less of them than ULV
- More research is required to consolidate efficacy
- LDP is a key tool in managing spray drift

Technology Update

- RAD Technology are working on a new rotary atomiser that tightens the spectrum
- New aircraft are being produced such as the Australian GA 200, and the new Thrush T 660
- Standard fitout now includes shorter dropped boom (65% of wingspan)

- New nozzles are out that reduce the turnaround time for changes from a coarse to finer spray (e.g. CP 0/30/90)
- Work continues into adjuvants (anti-drift additives)
- Field pattern testing of aircraft is widespread in the industry to ensure an efficient pattern that reduces chance of drift
- Air ag industry invested over \$200,000 last season in a single program for independent checking of aircraft to ensure they met the endo label requirements
- Helicopters are being used more
- GPS continues as a key element of aerial operations
- Research into practical solutions must be stepped up

Real Life

- We still have plenty of tools to do the job
- The real revolution is not in technology but in management
- The two key elements of good spray management and planning are:
 - teamwork
 - communication

Questions for Sustainable Spraying

- How well is your farm planned for spraying?
- Do you have a SDMP for all chemicals?
- Do you have a good relationship with your neighbours?
- Are you and your consultant aware of the risks of pressuring for a spray in marginal conditions?
- Are you on site during sprays?

Next Steps for AAAA

- Spraysafe is under review
- Spraysafe 2000 will include an audit component
- Some aerial operators are pursuing ISO 14001
- AAAA is working on other programs to speed up the adoption of best practice
- AAAA is pursuing research funding for better nozzles and better practices

This Season

- Make farm planning work for better spraying
- Have a good Spray and Drift Management Plan
- Sit down with your applicator and consultant and map out the season
- Spray management is a team effort

