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Assessing spray coverage with water sensitive spray cards

A spray card is a strip of water- or oil-sensitive paper. The cards are produced in a range of sizes. They were developed for use in the field for quick evaluation of spray coverage and droplet size.



Water sensitive paper

These strips are made of specially coated yellow paper which turns blue when exposed to water droplets. The paper will also change colour when exposed to high humidity or even sweat from your fingers and hands. When not in use the paper strips must always be stored in the foil packet, in dry conditions.

Oil sensitive paper

These strips are made of a black card coated in a white oil soluble wax. The waxy surface is dissolved when contacted by oil-based droplets leaving permanent black marks on a white background.

This paper, however, is not sensitive to all oils.

Using spray cards

Spray cards are one of several tools you can use to assess spray coverage. They allow you to see where the spray is going in your crop and what sort of spray coverage you are getting with your spray equipment.

The spray cards can be placed in the crop using staples, pegs or paper clips prior to any spray operation. Be sure to use bright coloured pegs as the water sensitive spray cards turn blue when wet, and can be difficult to see in green foliage. The cards should be collected as soon as they are dry.



The cards can also be used to give you an indication of droplet size and density. However, once the spray liquid hits the paper, the droplets expand so they may appear slightly larger. For assessing droplet size and density, the cards were originally designed to be viewed using a microscope or hand-lens, then the droplets were counted and compared to pictures showing different droplet densities per cm².



Spray cards are a good tool for evaluating both your spray equipment and your spraying operation. They can be used to check where your spray is going in the crop or whether it is getting inside the canopy and to the top and bottom of the trees. This information is useful when calibrating your spray equipment especially with regard to nozzle size, placement, direction and the travel speed.

Limitations of spray cards

- The cards don't work under very humid conditions as the water-sensitive paper turns blue at about 80% relative humidity.
- Droplets smaller than 100 microns are not visible on the cards. Remember there is often a large percentage of spray droplets smaller than 100 microns (100 microns = 0.1 mm). This is especially the case with spray equipment such as airblast sprayers and misters designed to produce droplets smaller than 100 microns.
- You need to wait until the plant foliage is dry before placing the cards in the crop. Wait until fog has lifted or dew has evaporated.
- Once used, don't collect your spray cards from the crop until they are dry.
- Wear gloves when handling the cards so that they do not become stained from your perspiration.

Other spray assessment tools

The other main method used to visually assess spray coverage is by using ultra violet (UV) fluorescent dyes. The liquid dye is placed in the tank of your sprayer and a normal spray operation is undertaken. To see the UV droplets you need to use a UV sensitive light at night to view the area sprayed.

This method of assessment is far superior than using spray cards but is a lot more difficult to organise. This method has previously been demonstrated at workshops and field day events.

Where to purchase spray cards

TeeJet Australasia Pty Ltd is the only company in Australia supplying spray cards, Phone 03 5223 3020. For local distributors go to www.teejet.com or contact your local spray equipment retailer or agricultural supplier for more information.