

### G-MW researcher develops improved sampling technique for herbicide residue trials

Goulburn Murray Rural Water Authority (G-MW), Victoria, Australia in collaboration with CSIRO, Australia (Dr Rai Kookan's group), is conducting an environmental risk assessment of herbicides (2,4-D and glyphosate) used in channels, drains and natural carriers to control aquatic plants. An important part of this program is a field validation experiment of herbicide residue to complement the desktop assessment. This field validation experiment requires an efficient methodology to sample water before spraying, soon after spraying, and during a withholding period. The most important part of this experiment, however, is sampling the first flush as soon as the water is released into the channel, three-to-four days after spraying. Water samples are collected along the channel from several equally-spaced points and must be completed before water flows downstream.

The previous technique raised potential Occupational Health & Safety (OHS) issues as it required people to enter the channel frequently to collect samples. This process was not only time consuming and potentially dangerous, but also disturbed the flow of water and possibly the channel's sediments and organic matter.

G-MW's Dr Golam Kibria devised an innovative solution. His simple set-up addressed both the OHS and sampling issues. The new set-up does not require people to enter the channel, reducing risks from injuries, while still allowing efficient sampling of water moving through post spraying without disturbing normal flows. Simply put, a peg is fixed at the bank of each sampling point to mark the current water level, 1 cm level (first flush) and full supply level. Six nalgene bottles are individually tied with cable ties to a basket and a 2.5 kg weight is placed in each basket to enhance sinking. The basket containing six bottles is then attached to an extended rod, to sample from the centre of each sampling point when water reaches the marked low and high rise points.

The new set-up was tested recently under field conditions. It worked well reducing the time needed to sample at any given point and ensured that the samplers could get to the next sampling point before the water arrived. CSIRO collaborators could also see the benefits associated with the new set-up and commended Golam for this practical innovation. Further information can be obtained by emailing: [golamk@g-mwater.com.au](mailto:golamk@g-mwater.com.au)



Six nalgene bottles tied together to a basket using cable ties



Sampling of six bottles at one time from the centre of the channel without entering into the channel