

Gauging Farmers' Water And Pesticide Use

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Heping Zhu and Adam Clark at the Agricultural Research Service (ARS) Application Technology Research Unit, Wooster, Ohio, have developed an easy-to-use and easy-to-build portable instrument so that farmers and greenhouse growers can test the accuracy of their pressure gauges.

Farmers rely on the accuracy of pressure gauges to ensure that desired rates of pesticide sprays or irrigation water are

is an accurate factory-calibrated gauge. In the middle is a small canister of water attached to a pistol-grip handle.

Squeezing the handle generates pressures to the two gauges for comparison. If the farmers' gauges don't match the factory-calibrated gauge, farmers have two choices. If the gauges aren't off by much farmers can keep using their gauges, but mark the actual location where the dials should be for their de-



To help growers measure pesticide spray and irrigation water pressure more accurately, ARS scientists assembled an instrument for checking pressure gauge accuracy. Above, a grower's gauge (left) is screwed into a threaded port to be tested against a calibrated gauge (right).

Image courtesy Heping Zhu, ARS

applied. But the pressure gauges on pesticide spraying equipment or irrigation lines often fail after a few years.

So Zhu, an agricultural engineer, and Clark, an engineering technician, developed a tester that can be assembled by any do-it-yourselfer. The main body of the tester is commercially available. Farmers go to the field with this handheld tester, remove a pressure gauge from their equipment and screw it into a threaded port on the left hand side of the instrument. On the right hand side there

sired readings. But if the gauges are too far off or farmers want to use a number of different pressure settings, they would buy new gauges.

Extension personnel are already using a tester based on Zhu and Clark's design. They find the tester a very useful and inexpensive tool for checking the accuracy of farmers' pressure gauges. This saves farmers money, saves precious water, and helps keep unneeded pesticides out of the environment. Δ