

PULSE WIDTH MODULATION FOR DROPLET SIZE CONTROL. Troy C. Kolb, Dr. D. Ken Giles and Jeffrey J Grimm, Field Engineer, Capstan Ag Systems, Topeka, KS 66603, Professor and Associate Development Engineer, Biological and Agricultural Engineering Department, University of California, Davis, CA 95161, Field Engineer, Capstan Ag Systems, Topeka, KS 66603.

Chemical pesticides are traditionally applied using electronic rate controllers to maintain application rates while allowing operators to vary the speed of the spray equipment. Traditional rate controllers vary the flow to match speed changes by varying the pressure, which in turn cause changes in droplet size, changes in efficacy and changes in drift potential.

Blended pulse spray systems utilizes an individual solenoid valve at each spray nozzle and uses the pulse width modulation technique to vary flow independent of pressure and speed. When coupled with a conventional rate controller, target application rate, pressure and droplet size can be set and maintained through an 8:1 speed range. Chemical efficacy is improved since the pressure and droplet size is maintained throughout the entire field. Operators can also minimize their drift potential, since they can adjust pressure and droplet size independent of rate and speed while applying.