Constant Flow Valve: A New Level of Consistency and Accuracy in Agricultural Spray Application

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Abstract—*Pesticides, irrespective of tremendous potential to pollute the environment, have become an indispensible part of modern plant protection system. Careless application of pesticides creates spray drift and run off that cause damage to neighbouring crops and wildlife habitats. The lever operated knapsack sprayers are most popular among the Indian farmers due to its affordable cost, versatility and design. However, this equipment can lead to misapplication of chemicals as it delivers uneven flow with highly variable droplet spectra and spray pattern. Therefore, assessment of the present day spray practices for technical advancement is the need of the day. Improvement of spray deposition may be achieved by attaching accessories or modifying the commonly used sprayers. Constant flow valves (CFValves) are available in developed countries which controls output pressure and allows an applicator to apply a careful, directed spray at a consistent rate. It is available in 14.5, 21 , 29 and 43.5 psi outputs and helps to maintain a consistent flow rate with ±1.5% accuracy, regardless of input pressure variations. Moreover, this valve can be used for any spray application, from simple knapsack sprayers operated by a subsistence farmer to complex mechanized spray equipment. It will increase the accuracy and efficacy of spray applications by eliminating inconsistencies in flow rate and ensuring ideal swath, droplet size, and application rate (McAuliffe, 1999). So, keeping in mind the present day status of environmental pollution and health hazard due to agrochemicals, research on feasibility of using CFValve in Indian agriculture is highly justified.*

Reference

1. McAuliffe, D. 1999. Flow control of lever operated knapsack sprayers with Cfvalve. International pest control 4(1):21-23.