Improving Herbicide Application Accuracy in South Asia[1]

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Abstract: In 1998, Indian regulatory agencies approved the registration of CGA 184927, MON 37500, and fenoxaprop for postemergence control of isoproturon-resistant littleseed canarygrass (*Phalaris minor* Retz.). Herbicides used in rice and wheat prior to 1998 were generally mixed with sand or urea and spread by hand. Foliar pesticide spray applications consisted primarily of insecticides and fungicides that were applied to high value crops. These pesticides were often sprayed to runoff with backpack sprayers that were equipped with single hollow cone or flood nozzles. Applicators walked through the fields, swinging the wands in sweeping motions and uneven pesticide distribution and over-application resulted from these applications. The newly registered postemergence herbicides were applied with the same equipment and in the same fashion. Following these applications, control of littleseed canarygrass was strikingly inconsistent and growers blamed the lack of control on the manufacturers. It was clear that basic understanding of application techniques was lacking. In response to this, an application training workshop was developed and taken to India and Nepal in 2000. The workshops focused on teaching participants how to use and construct multiple nozzle booms, the importance of flat fan nozzles, calibration, drift avoidance, and applicator safety. To date, approximately 3000 farmers, extension agents, scientists, and industry representatives have attended 30+ workshops. The participants have been unanimously enthusiastic about the value of the workshops. Although simplistic, the adoption of this technology will significantly decrease the amounts of herbicides applied and will increase efficacy and efficiency.

Nomenclature: CGA 184927 (proposed common name, clodinafop), 2-propynyl *R*-2-[4-[(5-chloro-3-fluoro-2-pyrdinyl)oxy]phenoxyl]=propanoate propynyl ester; MON 37500 (proposed common name, sulfosulfuron), 1-(4,6-dimethoxypyrimidin-2-yl)-3-[(2-ethanesulfonyl-imidazo[1,2-a]pyridine)sulfonyl]urea; fenoxaprop; isoproturon; littleseed canarygrass, *Phalaris minor* Retz. #[3] PHAMI; wheat, *Triticum aestivum* L.

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[3] Letters following this symbol are a WSSA-approved computer code from *Composite List of Weeds*, Revised 1989. Available only on computer disk from WSSA, 810 East 10th Street, Lawrence, KS 66044-8897.