Minimizing Off-Target Pesticide Contamination

Richard Derksen
Agricultural and Biological Engineering Department
Cornell University

There are several paths that lead to contamination. Management of off-target pesticide contamination should include the following components:

**Container Management**

Triple rinsing or pressure rinsing
Proper storage of empty containers
Proper disposal of clean containers

**Loading Management**

Never leave equipment unattended while filling
Avoid overfilling and overflows
Don’t fill near open wells or surface water unless these are protected
Use a fixed air gap filling system or a backsiphon protection device
Use loading and mixing systems to minimize lifting and climbing
Measure pesticides and/or water volume carefully

**Spill Management**

Work on impermeable filling pads (temporary or permanent)
Clean-up spills immediately
When possible, use spill clean-up material as pesticide

**Application Management**

Calibrate equipment frequently to ensure accurate applications
Select nozzles to provide desired spray distribution
Use the largest size spray droplets (nozzle and pressure) that will provide the desired spray coverage
Use directed or banded applications when possible
Use the slowest possible travel speed to provide the desired application rate within time constraints
Use the lowest possible nozzle to target distance
Avoid making applications during high wind conditions
Avoid making applications during high temperature and low humidity conditions
Avoid making applications when temperature inversions may not permit spray cloud dissipation
Use air assistance to keep materials on target without creating additional spray drift
Install wind shields or shrouds to reduce drift problems
Use spray adjuvants to increase droplet size and minimize evaporation
Leave no-spray buffer zones around sensitive areas

**Rinsewater Management**

Rinse equipment in the field whenever possible
Apply equipment rinsewater as dilute pesticide when permitted
Use rinsewater treatment systems when necessary