

Rice Water Seepage Management: Voluntary Guidelines

What is seepage?

Movement of water through a rice field levee to an adjacent area.

Why is seepage water a problem?

Seepage water can contain high concentrations of molinate, carbofuran, and potentially other chemicals as well, during the holding periods. If this water is allowed to reach agricultural drains, it could impact efforts to meet performance goals and result in toxicity in aquatic organisms.

What evidence is there to indicate seepage water contains pesticides?

Molinate was detected in rice seepage water from six out of six sites with concentrations ranging from 44 to 1300 parts per billion (ppb). Carbofuran was detected in rice seepage water collected from three out of three sites with concentrations ranging from 0.4 to 11 ppb. (Water samples were simultaneously collected from adjacent fields and carbofuran concentrations were as high or higher than in seepage water.) The current performance goal in the agriculture drains for molinate is 10 ppb and for carbofuran is 0.4 ppb.

Two demonstration sites were set up with tarps covering the seepage area to prevent molinate deposition from drift. Concentrations of molinate from these sites ranged from 37 to over 700 ppb (corrected for background concentrations).

Why are growers being asked to make voluntary efforts to control seepage water?

The Central Valley Regional Water Quality Control Board and the Department of Pesticide Regulation believe it is important that the rice growing community become aware of the potential impact of contaminated seepage water reaching the agricultural drains and have the opportunity to voluntarily address the problem. *If these voluntary efforts are sufficient to minimize the impact of seepage water on the agricultural drains, no future regulatory action will be needed.*

VOLUNTARY GUIDELINES

1. Prevent seepage water from leaving the rice field during the holding period through loosely constructed levees by:
 - Running a tractor tire or track on top of existing border levees, and
 - Ensuring that newly constructed levees are built with mineral soils (not organic matter and plant residues), adequate width, and soil cores (when building levees, run tractor tire or track on top to firm up core of check). Double berming is another method of containing seepage.
 - Using technical recommendations for levee construction offered by the USDA in a handout entitled "Closed Rice Water Management Systems," available from your county agricultural commissioner.
2. Prevent water in seepage areas from reaching the drains during the holding period by:
 - Directing or pumping seepage water to fallow land, and
 - Blocking the exit of water from the seepage ditch to agricultural drains.
3. Communicate with applicators to establish the common goal of keeping drift away from seepage ditches, drains, border levees, and roads. Dry material on roads and dry ground is considered to be environmental contamination with the applicator liable for a civil penalty. This material remains viable and any runoff from these areas during wet weather should be held on your property to avoid contaminating agricultural drains.
4. Prevent leakage from levees by inspecting and repairing rodent damage during the holding periods.