

IRRIGATION NEWS

Benefits Of Pest Management

The potential for off-site movement of natural material or applied agricultural materials is a central theme for those charged with creating and enforcing water quality regulations. Control of such materials is easy during the growing season as irrigation water applications can be regulated to prevent off-site movement. It is the uncontrolled and unpredictable nature of storm runoff that requires innovative changes to management practices.

Integrated Pest Management (IPM) has been proven to be a successful strategy for the reduction in chemical usage. IPM dictates that the whole production picture be considered before treatment occurs. The pest (and its current stage of development), the stage of crop development, the cost of the treatment versus the value of the crop, the treatment options, and the timing of the treatment must all be considered. Control benefits must outweigh the cost of the control measure. It is a mistake to assume that just because a pest is present, the grower is going to spray. There are times when the presence of a pest species is not economically significant to either the crop or the grower.

Best Management Practices (BMPs) are already in place for many of the crops and crop protection materials in use. The "best" practice is not always the most practical. Regulators recognize this fact and will accept the most practical solution in many cases. Many practices are simply based upon common sense. They boil down to four simple concepts: (1) Mix and load in protected areas away from surface water bodies. (2) Calibrate sprayers so that the rate applied matches the rate mixed. (3) Shut off the sprayer on turns and spray away from surface water bodies. (4) Proper timing of the application to avoid adverse weather.

Agricultural product labels cover many of these concepts. As part of the registration process for regulated materials, each manufacturer has to develop a BMP for that particular chemistry. The basic risks

of offsite movement are outlined, and recommended control measures described. These restrictions range from plant back restrictions (how long before a non-registered crop can be planted within a treated field), to timing restrictions to prevent damage to surrounding crops.

Mixing and loading should be done in an area where the potential of contaminating surface water is minimized. If possible, the site should have a concrete pad and a small sump where spillage can collect. The site should not be located immediately adjacent to a water body. Rather it should have enough distance so that a berm can be placed to prevent the flow of runoff toward the surface water body.

Calibration is possibly the most cost effective task a grower can do to a sprayer. First, new nozzles running at the proper pressure will minimize drift through the reduction in the formation of fine droplets, which are easily carried by the wind. Second, proper calibration ensures that the material purchased is applied at the rate desired, not heavy in one place, missing in another, and thin elsewhere. Under-application leads to pest resistance or poor product performance, and over-application can lead to residue issues.

Shutting off the sprayer during turns keeps the product within the field where it belongs, rather than applying it to roads where there is no benefit to the grower. Have the driver pause at the field end to allow the system pressure to drop off, and then proceed to the next pass. In orchard applications, have the applicator spray into the orchard only, away from any surface water bodies. This procedure should be applied to the two closest rows to the water body to minimize drift contamination.

Finally, the timing of the application needs to be taken into account. Watch the weather closely. Do not apply chemicals in high wind situations, or when rain is

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Free Pump Testing Available

Irrigation pump and system tests remain available for growers within the Kings River Conservation District. However, the amount of available appointments has been reduced for the winter months. Make note that these appointments are scheduled on a first-come-first-served basis. If your system is not performing as well as you would like, please call and schedule an appointment as soon as possible. Contact Eric at (559) 237-5567, ext 117.

Benefits Of Pest Management (continued)

imminent, unless rainfall incorporation of a preemergent herbicide is desired. Storm runoff is a critical concern right now, and if the material applied does not have sufficient time to bind to the vegetation, it will simply run off with the rainfall.

In Irrigation News 17.2, it was proposed that “dry wells” or trenches within hillside orchards be constructed to intercept runoff and percolate the water into the subsoil through a compost filter. One response to this idea pointed out the high cost per acre for such construction. The basic premise remains sound, but the implementation needs to be carefully considered.

So, as an alternative, it is proposed that shallow berms be created that run between the tree rows, parallel to the contour lines on the hill. Again, the water collected between the berms is impounded, and if compost or other organic matter (shredded branches, strips of cover crops) is placed or allowed to collect on the uphill portion of the berm, sufficient soil structure should be retained to encourage higher infiltration rates.

Such berms are intended to slow the movement of surface water downhill, thus slowing the movement of sediments or other dissolved materials.

The key here is that the berms would be low enough to not interfere with cultural operations, and the cover strip would only be one or two feet wide, thus minimizing any negative impacts during frost control. Berm construction would be with a simple blade implement, and perhaps packed slightly. Such berms could be easily removed during harvest, and then rebuilt prior to storm season. Feedback on this concept would again be greatly appreciated.

One concept for controlling runoff from irrigated lands that is frequently referenced is the creation of basins or ditches that contain actively growing vegetation. Within these vegetated strips, water slowly filters through the vegetation (thus leaving sediments behind), and any fertilizers or other crop chemicals within the water could be intercepted by the vegetation or the thick layer of organic material that would be present on the basin bottom.

The water continues to flow through the system and drain away, but the materials of concern could be left behind. Having such a system would not alter the regulation of discharge from irrigated lands, but it would make the justification harder if testing showed that no potentially harmful materials were being introduced into the waters of the state.

Winter Maintenance Tips

Winter is an ideal time to perform needed maintenance on your drip/micro irrigation systems. With the crop in dormancy, your system is easily accessible and any breaks can be seen and easily repaired.

This is a great time to flush your systems clean of any debris, starting with the main distribution lines, and working down to the sub-mains and finally to the laterals. Close valves in some blocks to increase the amount of pressure available in the open blocks to insure good cleaning action.

The use of chemical agents (chlorine, acid) should also be considered at this time as the cooler temperatures will not evaporate the water within the emitters as quickly, allowing more contact time for the chemicals to kill any algae or bacteria within the system, or to dissolve any hard water deposits present within the emitters.

It is a good idea to flush the system first, then run the system normally with the water treatment chemical of your choice. It is also a good idea to check the ties on your drip system to keep the lines as level as possible. This helps put the water where it was designed to go, not simply to the low part of the drooping hose.

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NEWS**

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Irrigation News, a bimonthly
publication of the Kings River
Conservation District

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