

Environotes from TVA

By John E. Culp

SEVERAL ENVIRONMENTAL technologies are being introduced by TVA to agricultural retailers. Our work includes sponsoring model site demonstrations to develop and introduce secondary containment structures. Structures included are load-in, load-out, storage, mixing and rinsing. Demonstrations are active in 17 states.

TVA is also working with 35 retail dealers in 20 states on individual technology demonstrations. These demonstrations include site assessments to determine the impact of a retailer's facility on the environment.

TVA has worked with the industry to develop and introduce an environmental manual, videotapes and environmental checklist. These identify strategies and structures dealers can use to install safeguards at their sites.

Later this year, TVA will release a self-evaluation environmental package. It is being tested at this time. The package consists of a videotape, a comprehensive questionnaire, and a customized report generated by an expert system which analyzes a retailer's responses. The report will help dealers identify problems and corrective actions based on regulatory compliance and best management practices.

Remediation

TVA is field testing solar remediation technology. Scientists are also conducting research to develop a number of remediation technologies.

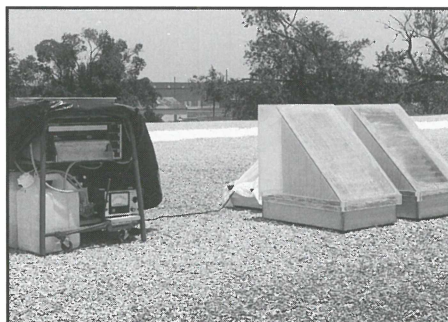
The field testing under way is on a low-cost passive solar evaporation unit. This technology is designed to reduce the volume of aqueous waste-containing pesticides. A demonstration unit costs about \$4,000 and can evaporate 900 to 1,200 gallons of water annually based on

Alabama climatic conditions. We have field tests under way on this technology at a metal plating company in Tennessee and at agricultural retailer sites in Idaho and Washington.

Researchers are also exploring this technology in TVA laboratories and experimental sites. The objective is to develop a simple and economical process to reduce the volume of, and where possible to destroy pesticides in, dilute aqueous waste streams. Research will continue on the solar evaporator technology. The field testing in Idaho and Washington will contribute to the further development of this technology.

TVA is also conducting photocatalytic oxidation studies to test the potential application of catalyzed solar-light driven photooxidation as a means for destroying pesticides in dilute waste water streams. Early experiments have shown promise in destroying atrazine, metolachlor and metribuzin under both solar and artificial UV light irradiation.

The objective of these technologies is to provide the agricultural retailer with low-cost remediation technology through solar evaporation and destruction capabilities. ■



SOLAR REACTORS for studying the TiO_2 catalyzed degradation of pesticides.

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