U.S. Department of the Interior
U.S. Geological Survey

Technology Transfer Opportunities: Patent Licenses

Automatic, Non-Contaminating Water Sampler for Solid-Phase Extraction of Pesticides

About the Sampler

A new portable sampling system for field use maintains sample integrity with minimal human effort. The Apparatus for Sampling Pesticide Residues in Runoff with Control of Sample Pump and Distributor Valve was patented by the U.S. Geological Survey and is available for licensing. This device operates in the field in both cleaning and sampling modes and includes a distributor valve that provides selective connection of a sample pump to a plurality of collection units for collection of up to 24 separate samples. The collection units include a filter for removing particulate matter, a solid-phase extraction column, and a storage bottle. Water samples are automatically collected from a river or other water source. The samples are immediately pumped through the solid-phase extraction column which extracts and retains the contaminants from the water. After the sample collection event, the SPE columns are returned to the laboratory for analysis.

Advantages

Advantages over previous systems include:

* Inert materials in the device prevent contamination in the collection process.

* Once extracted into the solid-phase extraction column, the sample is chemically stable and resistant to degradation.

* Resulting sample stability eliminates the need for special handling during transport to the laboratory.

* Water samples are automatically collected in response to a given condition, such as a preselected time period or when rainfall is detected by a sensor, thus eliminating much of the need for human intervention.

Commercial Applications

Potential commercial uses of this device include:

* Monitoring of pesticide runoff from agricultural areas;

* Monitoring of herbicide or other chemical runoff from urban areas;

* Monitoring and measuring of sewage effluent;

* Monitoring and measuring of industrial discharge into streams.

Patent Status

The U.S. Department of the Interior holds a patent on the apparatus, U.S. Patent no. 5,167,802. A license to use and commercialize the technology is available.

MORE.....

For More Information
For more information about licensing of this and other patents and for cooperative research opportunities with the USGS, please contact:

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