

Nikon Offers Brochure on Microscopic Products

The eight-page color brochure *The Scientific Source* highlights the full selection of microscopes, photomicrographic systems, and accessories available from Nikon. Included are details on the Microphot and Microphot FX research systems; the SMZ family of stereomicroscopes; the Alphaphot, Alphaphot-Kt,

Labophot, and Optiphot microscopes; and the polarizing and inverted microscopes. Also discussed are the FX photomicrographic systems, epifluorescence accessory, multiviewing attachment, Magiscan 2 image analysis system, DFX autocinemicroflex attachment, and Multiphot universal photographic system. The final section covers the quantitative microfluorometry and microphotometry system, consisting of microscope, FX

photometer, computer-controlled programmable motorized precision stepping stage, and software package.

Contact: Nikon Inc., Instrument Group, Scientific Department, 623 Stewart Avenue, Garden City, NY 11530; (516)222-0200.

Data-Logging Spectroradiometer Has Dual Camera Capability

Spectron Engineering's field-portable data-logging SE590 spectroradiometer for remote sensing of agricultural, forestry, and geological environments now has the ability to automatically switch between two spectral cameras, allowing nearly simultaneous acquisition of data from either two different or two identical spectral range cameras. For example, one camera could act as a reference and allow for verification of spectral data, such as solar variations in field work. A researcher could take a spectral scan of the 200- to 1,100-nm range with as little as 1.37 nm dispersion per detector element.

The spectral cameras can simultaneously acquire data in 256 bands in as little as 1/60 second. The cameras scan in the range of 200 nm through 2.5 μ m, and output is directed either to the internal tape drive or to an optional communications port for external data manipulation. Once acquired, a spectrum can be displayed on an oscilloscope via the scope output; the amplitude at each wavelength can be displayed on the built-in LED display or recorded onto the

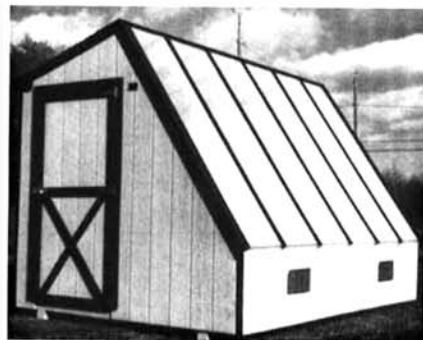
tape. With options, a ratio may be taken of the current spectrum to a previously acquired one and the spectrum or spectral ratio can be printed or plotted. Printer, X/Y plotter, ratio computation, and other computing options expand the self-contained system capabilities to provide hard-copy processed data. The printer can produce a tabular printout of spectral or spectral ratio data, a graphic representation, or a spectral plot on an X/Y recorder. The controller includes an output to transmit spectra from tape to a remote computer system for building the desired data base for analysis.

The system is compact and simple to use. Built-in optics allow aiming the spectral head at the area of interest. The spectrum acquired can be reviewed in the field on the internal LED display or by coupling a portable oscilloscope. The spectrum can be recorded with a single keystroke. The unit operates on internal rechargeable batteries and also can be plugged into a DC external source.

Contact: Thomas Hutchcroft, Spectron Engineering, 800 West Ninth Avenue, Denver, CO 80204; (303)623-8987.

Greenhouse Features Roof Made of Lexan Thermoclear

The Valley Structures greenhouse is constructed of wood, with panels of 8-mm Lexan Thermoclear used for the roof. Each roof panel, measuring 2 ft \times 7 ft \times 4 in., is framed with wood and sealed with silicone caulk. Lexan Thermoclear,



a double-walled polycarbonate glazing material, is produced by General Electric Co. and distributed by Commercial Plastics & Supply Corp. The material—two surfaces joined by ribs—provides a dead-air space for optimal thermal insulation. Tests comparing Thermoclear with glass of the same thickness showed that Thermoclear provided energy savings of 43% in measurements of winter heat loss and of 45% in measurements of summer heat gain. Thermoclear resists yellowing and is virtually unbreakable.

Contact: Greenhouse/Sanford Helmut, Valley Structures, Route 1, Box 389A, Dayton, VA 22821; (703)879-9454. Lexan Thermoclear/James Larkin, Commercial Plastics & Supply Corp., 1620 Woodhaven Drive, Bensalem, PA 19020; (215)638-2630.

Natural Fungicide-Miticide Comes in Ready-to-Use Spray

Safer's all-natural Garden Fungicide-Miticide controls such fungal problems as powdery mildew, black spot, leaf spot, and rust as well as mites and is available in 24-oz ready-to-use liquid spray bottles and 16-oz liquid concentrate.

Contact: Safer, Inc., 60 William Street, Wellesley, MA 02181; (617)237-9600.



New Antibodies Available for Use in ELISA Detection

Boehringer Mannheim Biochemicals has introduced four new antibodies for use in ELISA detection of carnation mottle virus, cymbidium mosaic virus, odontoglossum ringspot virus, and prune dwarf virus. The antibodies are available

Micropods Are Tiny But Powerful Meteorological Stations

Micropods—compact, lightweight, portable members of the ARAX meteorological system—are available in three models, to fill the needs of both the grower and the researcher. The MP-10 and MP-20 use FM radiotelemetry for periodic transmission of data. The MP-20 transmits directly and is an excellent choice for growing areas less than 1 mile (line of sight) from the ARAX base computer. For longer distances, the MP-10 is programmed to relay data to a mother ARAX DCR satellite for subsequent relay to the base computer. The MP-50 features long battery life and mass data storage and operates unattended in remote areas for long periods of time. The MP-50 can store 1 hour of data from 11 different sensors for 6 months with a 64K byte memory card and for 1 year with a 128K byte memory card.

The micropod is constructed of high-impact plastic and is assembled in a cylindrical housing. The top section

either unconjugated or conjugated to alkaline phosphatase. Complete instructions and a full line of reagents that have been designed for use with the antisera are also available.

Contact: Kristen Kinkade, Boehringer Mannheim Biochemicals, 7941 Castleway Drive, P.O. Box 50816, Indianapolis, IN 46250; (800)428-5433.

houses the electronic microcomputer, sensor amplifiers, and telemetry or memory modules. The lower section houses the battery and associated power circuits. No devices protrude beyond the cylindrical dimension. The sensors include air temperature, humidity, soil moisture, soil temperature, rain gauge, digital wind velocity, global solar radiation, leaf wetness, crop temperature, and rain pH probe. Software operates differently for each model. In all models, rainfall and solar radiation are monitored continuously and other sensors are sampled periodically.

The micropod is 5 in. in diameter and 22.5 in. long, weighs 8 lb., and can operate at temperatures of -20 to $+70$ C. For simple deployment in remote areas, the MP-50 is available in an instrument carrying case.

Contact: Barbara A. Kovell, ARAX International Corp., Cedar Valley, Box 489, Vanderbilt, PA 15486; (412)628-6370.

Sample Loss Is Negligible with CentriCell Membrane

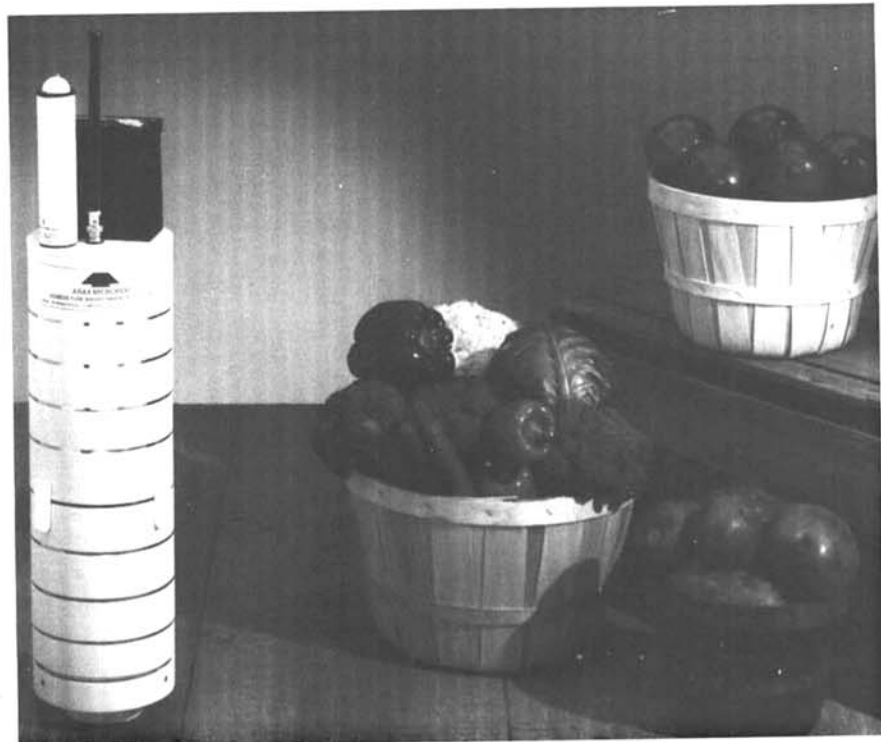
CentriCell is a ready-to-use concentrator for reducing a 20-ml sample to 0.5 ml in 15–60 minutes. With use of a Millipore ultrafiltration membrane, both 10,000 and 30,000 molecular weight cutoff devices require only a standard centrifuge with swinging bucket rotor for 50-ml tubes. The large membrane surface area (13 cm^2) provides rapid processing, even at low centrifuge speeds. Because



the membrane is parallel to the direction of force, sample loss owing to adsorption, shearing, concentration, polarization, and denaturing is negligible. Solute recoveries of 95% or higher are routinely achieved.

Operation is simple. Up to 20 ml of a sample is poured into the filter cup. Centrifugation at $1,000$ – $2,500 \times g$ causes solutes and solvents below the molecular weight limit to permeate the membrane and flow into a receiver tube. Non-permeable molecules remain within the filter cup. After centrifugation, the device is inverted to transfer the concentrate to a sample tube.

Contact: Polysciences, Inc., Department CC, 400 Valley Road, Warrington, PA 18976-2590; (800)525-2575.



No endorsement of the products or services described or of the statements or claims made in these listings is assumed by PLANT DISEASE or by The American Phytopathological Society.

Salute to APS Sustaining Associates

This section is designed to help APS members understand more about APS Sustaining Associates. Information was supplied by company representatives. Each month different companies will be featured. A complete listing appears in each issue of *Phytopathology*.

W. R. Landis Associates, Inc., Contact: W. R. Landis, President, P.O. Box 5126, Valdosta, GA 31603-5126; 912/247-6472. W. R. Landis is a research and development management company that specializes in agricultural products. We have the capability of guiding products through their entire research and development process, with emphasis on the requirements of the U.S. Environmental Protection Agency (EPA) and state regulatory agencies. Because we serve clients from the smallest formulators to the largest multinational giants, our regulatory expertise with the EPA and individual states is broad-based. We keep abreast of and can conduct all federal and state requirements under Good Laboratory Practice (GLP) guidelines. These requirements include formulation development and evaluation, toxicology, environmental chemistry, and nontarget organism studies. Landis takes a project management approach to research and development management and has the disciplines of plant pathology, entomology, agronomy, nematology, and chemistry on staff to bring technical expertise to each project. In addition, Landis expanded its in-house capabilities by acquiring Southern Agricultural Research, Inc., with two research facilities that offer full-spectrum contract field research in Georgia, Alabama, and Florida, and because of the demands of the

midwest and west, we have recently acquired Northwest Agricultural Research, Inc., with the capability of conducting research in Idaho, Montana, Oregon, and Washington. We are also in the final stages of establishing facilities in Ohio and California.

Eli Lilly & Company, Greenfield Lab, Box 708, Greenfield, IN 46140; 317/467-4118.

Loxton Research Centre, Department of Agriculture, Contact: P. A. Magarey, Box 411, Loxton, South Australia 5333; (085) 847 315.

New Sustaining Associate

Fermenta Plant Protection Co., Contact: Dr. Gary L. Eilrich, Vice-President, Technology, 7528 Auburn Rd., Painesville, OH 44077; 216/357-3440. Fermenta Plant Protection Co. (FPPC), headquartered in Concord Township, serves four world business areas: North America, Latin America, Europe/Middle East/Africa, and Asia/Pacific. The Asia/Pacific area includes Australia, New Zealand, and the People's Republic of China. FPPC brings to the world of agricultural chemicals advanced product development, state-of-the-art manufacturing facilities, and sophisticated marketing techniques to serve a growing global market. These basic capabilities have resulted in a line of superior weed and disease control products like Bravo and Daconil 2787 fungicides that significantly improve the health of turfgrass and ornamental plantings and increase the quality and yields of such crops as peanuts, bananas, wheat, stone fruit, and vegetables. FPPC is uniquely positioned to respond to promising new opportunities.

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