Deere's 240, 250, 260 and 270 Skid Steers Offer Far-Reaching Advancements

John Deere's 46-hp to 77-hp skid steers mark the first time the company has designed and manufactured its own skid steer products. The 240, 250, 260 and 270 models feature a patent-pending lift system, easy servicing, improved stability and enhanced safety features.

The Deere skid steers offer 1,500-lb. (675-kg) to 2,600-lb. (1,170-kg) lift capacities with a lift system that has greater reach for more precise loading and dumping than conventional skid steers. A 45° dump angle and 35° bucket rollback offer more efficient load carrying, and a sloped rear deck provides 360° visibility for safer, more productive work, especially in confined areas.

A quick-lift cab, removable side panels and easy-access rear door allow faster servicing. Safety features include convenient operator controls, an operator presence system and built-in boom safety lock.

John Deere Commercial Worksite Products
Loudon, Tennessee, USA; 423-458-8400

AE50 OUTSTANDING INNOVATIONS 1999

40 Series Air Cart's New Features Make it More User-Friendly

Flexi-Coil's 40 Series air cart introduces new features for adaptability and metering accuracy in planting equipment. The design includes split metering capability and pressurization in the meter box. A variable drive allows in-cab rate setting and eliminates rate charts to provide more precision. The cart can also interface with precision agriculture equipment such as a task controller for automated on-the-go rate adjustments.

A new prime function charges distribution lines with product before the implement moves. Blend technology mixes products from different tanks in the distribution lines.

A user-friendly stairway offers easy access to tank lids, and the top platform has a wrap-around railing for safety.

Flexi-Coil
Saskatoon, Saskatchewan, Canada; 306-934-3500

CropPro's One-Step System Handles Corn Silage in the Field

The New Holland CropPro™ crop processor attachment chops and processes corn silage in one operation with a pull-type harvester. Mounted above and behind the cutter head, the CropPro cracks and crushes corn kernels while shearing and crushing stems and cobs. This system eliminates the time and expense of using a stationary roller mill.

Recent university research shows that cows fed processed corn silage produce more milk per day than those fed unprocessed silage.

The CropPro offers an on-board processor that can be bypassed by removing one baffle plate, which allows an operator to switch from haylage to processing and back without removing the processor.

New Holland North America Inc.
New Holland, Pennsylvania, USA;
717-355-3663

AE50 OUTSTANDING INNOVATIONS 1999

R2000WF Wind-Fighter Sprinkler Minimizes Inputs, Maximizes Production

The Nelson R2000WF Wind-Fighter ROTATOR sprinkler provides a uniform, wind-penetrating water pattern for agricultural irrigation systems. This new wind-fighting device is mounted on sprinkler risers and uses a fine stream calibrated to a special diffuser.

For high uniformity and wide throw distance at 30 psi to 60 psi operating pressures, this patented sprinkler technology combines a rotating action with movement of diffuser fingers that interrupt the stream at the specified time. A modular design includes six color-coded nozzle sizes to meet capacity specific to site and soil requirements.

The R2000WF sprinkler minimizes water, energy and fertilizer inputs, while maximizing crop production and quality.

Nelson Irrigation Corp.
Walla Walla, Washington, USA; 509-525-7660

TR4 Track Sprayer Reaches New Heights — and Widths — for Row and Field Crops

Twelve-inch-wide (30.5-cm) tracks and 65-in. (165-cm) ground clearance make the self-propelled, hydrostatically driven, rubber track GK TR4 Track sprayer suitable for a wide variety of row and field crops. With 5.4-psi ground pressure, growers can spray when it is too muddy for traditional wheeled sprayers. The TR4 rides and handles smoothly using a bogey roller suspension system on the tracks and an adjustable steering wheel control inside a reversible cab to suit field conditions.

The TR4 offers on-the-go 80-in. (203.2 cm) to 120-in. (304.8-cm) tracking width adjustment. Powered by a 115-hp diesel engine, it features a 400-gal. (1,520-L) spray tank and 40-ft. (1,200-cm) to 60-ft. (1,800-cm) spray booms with a pressurized charcoal filtered cab.

GK Machine Inc.
Donald, Oregon, USA; 503-678-5525

AE50 OUTSTANDING INNOVATIONS 1999

InteliTrack Monitors Living Conditions to Improve Egg Production

The InteliTrack™ control system is an agricultural automation product primarily for egg production facilities. Its data collection and control provisions include environmental control, egg flow control, feed and water control and shell egg HACCP.

This system is scalable and cost-effective for areas ranging from a single layer to a 50-house complex. The smallest configuration is a microprocessor unit with LCD back-lit display and numeric keypad. The largest is composed of hundreds of microprocessor units — up to three per house — communicating to a central Windows NT computer with color graphics. Alarm dial-out provisions alert the producer to conditions outside specified parameters. Remote access allows the producer to use a home or other off-site computer to monitor conditions and change the control parameters.

Omnus Inc., A Novus Company
St. Charles, Missouri, USA; 888-296-5307

Accu-Bin Pneumatic System "Reinvents" Dry Flowable Herbicide Handling

Bayer Corp. teamed with Pathfinder Systems Inc. (PSI) to design a delivery method for a dry flowable (DF) herbicide. The result is the Accu-Bin, a customer-designed, pneumatic system that reinvents the way DF herbicides are handled, stored, metered and conveyed.

To use the system, the operator enters a security password then the amount of herbicide to be dispensed. This amount is metered into an air stream created by a small compressor, then the unit shuts off. A hose-within-a-hose creates a closed system with minimal dust. The inner hose carries herbicide to a spray tank and the outer hose returns air to the compressor to be filtered and recycled. Users may start or stop the system any time by pressing a button on the nozzle.

When the job is complete, the hose and nozzle are stored inside the unit, which the grower returns to the dealer to receive credit for unused product. A new unit may be ordered and the old one refilled and recharged.

Bayer Corp., Agriculture Division
Kansas City, Missouri, USA; 816-242-2194

AE50 OUTSTANDING INNOVATIONS 1999

Hesston 8450 and Case 8870 Tractors are Easier to Operate and Control

The Hesston 8450 and Case 8870 self-propelled windrower tractors use 14-ft. (4.2-m), 16-ft. (4.8-m) or 18-ft. (5.5-m) Hesston model 8020 and Case model 625 dual auger headers. Both tractors offer a 110-hp reduced emission diesel engine, hydrostatic ground and hydrostatic header drive. Their large tires improve ride and minimize compaction.

A wide, curved windshield and full-length side glass enhance operator visibility and a seat-mounted control panel allows precise machine control. Service is safe and easy with a tilt rear hood, platforms and hand rails. Sickle guards, hold down, reel bearings and center auger supports add durability to the two auger hay headers. Header end shields combine the enhanced protection of added coverage with the increased durability of non-metallic construction.

Hay & Forage Industries
Hesston, Kansas, USA; 316-327-6216

Stall Filler Provides a Faster Way to Spread Bedding in Dairy Barns

The McLanahan Stall Filler reduces time for adding bedding sand to dairy freestalls. The Stall Filler is towed into a barn and evenly distributes sand down the row of stalls. A sand hopper is mounted on a heavy-duty steel frame with a tandem walking beam suspension system. High flotation tires safely distribute the weight of a fully loaded Stall Filler as it moves over concrete.

A heavy-duty screw conveyor empties sand from the hopper onto a high-speed belt that delivers it at a variable rate up to 10 ft. (3 m) from either side of the machine. The unloading auger is powered by 540-rpm tractor PTO. The sand trajectory is set by adjusting the discharge belt tilt and speed via remote tractor hydraulics.

McLanahan Corp.-Agriculture Machine Systems
Hollidaysburg, Pennsylvania, USA; 814-695-9807

AE50 OUTSTANDING INNOVATIONS 1999

RoGator 1054/1254 Makes Field Work More Efficient

The RoGator® 1054/1254 is a self-propelled, precision application machine for spraying liquid fertilizers, herbicides and pesticides on corn, soybeans, small grains and vegetables. The RoGator's air spring suspension system with rear anti-roll capability provides a more comfortable ride, yet retains roll stability while cornering. Its new cab design has ergonomically positioned controls and instruments. The larger spray liquid product tank capacity, which ranges from 1,000 gal. (3,800 L) to 1,200 gal. (4,560 L), improves operating efficiency by reducing the quantity of refills.

Ag-Chem Equipment Co. Inc.
Minnetonka, Minnesota, USA; 612-933-9006

Sonoma Leafer Puts the Heat on Unwanted Vegetation

"Vineyardists" know that trimming the canopy leaves on grape vines lets sunlight flow in to the fruit to speed maturity and maintain higher fruit acids. Equipment recently developed by Ag Industrial Manufacturing (AIM, Inc.), in cooperation with Gallo Sonoma, economically performs this traditionally labor intensive process.

The Sonoma Leafer dispenses super-heated, deionized steam into vine canopies to wilt the leaves around grape clusters. This causes the leaves to dry and fall while the fruit and top canopy remain unharmed.

The heating process increases steam temperature to roughly 600°F (315°C), which destroys cell structure within leaves without damaging the nearby grapes. Leaves begin curling within 20 minutes, their edges turn brown within four to six hours and they drop off in a few days.

The Sonoma Leafer can also reduce pesticide and herbicide use by destroying pests and unwanted vegetation.

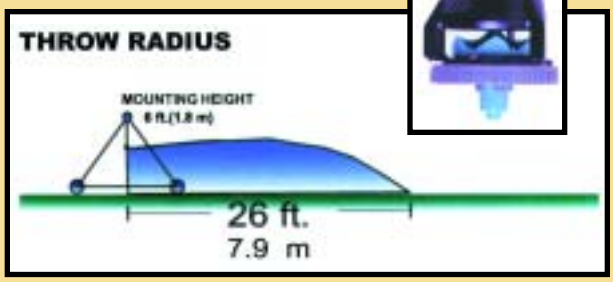
Ag Industrial Manufacturing Inc.
Lodi, California, USA; 209-369-1994

AE50 OUTSTANDING INNOVATIONS 1999

PC-S3000 Sprinkler Keeps Water out of Hardware and Wheel Tracks on Pivot Irrigation Systems

The PC-S3000 sprinkler provides a solution to common tire slippage and wheel-tracking problems associated with mechanically operated irrigation systems. By distributing water in a semicircle, this sprinkler can be incorporated at the towers of center pivots to direct water behind and away from the structure's hardware and wheel tracks.

The Part Circle Spinner provides uniformity and directional spray control at low pressure — 10 psi to 20 psi. Light application and consistent droplet size maintain soil structure and reduce runoff. By eliminating constant streams of water sprayed onto electrical motors and gear boxes, system life and overall reliability are enhanced. The PC-S3000 can be incorporated into any center pivot or lateral move sprinkler package.



Nelson Irrigation Corp.
Walla Walla, Washington, USA; 509-525-7660

Ensiler is Two Machines in One for Wrapping and Forming Bales

In the past, silage baling or "balage" has required two machines: one to form the bale and one to wrap it. The process also required two tractors and two operators.

But Vermeer Manufacturing's Ensiler does both with one machine. The Ensiler bales silage and ties it off with twine or netwrap similar to a typical silage baler. The operator then pulls and holds a remote valve to open the tailgate and the bale falls into the cradle. The bale and a swing arm move to a wrapping position where the bale is wrapped. An alarm sounds when the wrapping is complete and the operator reverses the hydraulic lever, to dump the bale off the cradle. The cradle then returns to its original position and the tailgate closes, ready for another bale.

Vermeer Manufacturing Co.
Pella, Iowa, USA; 515-628-3141

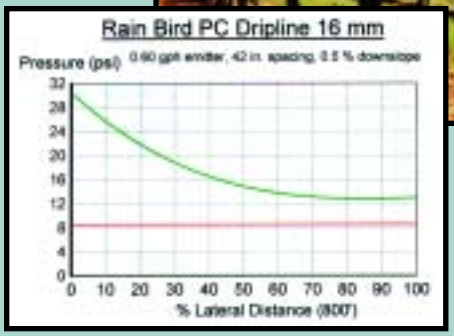
AE50 OUTSTANDING INNOVATIONS 1999

PC-Drip Software Gives Engineers Real-Time Irrigation Data for Evaluating Performance

PC-Drip is a new software program for engineering evaluation of drip irrigation lateral performance in real-world field conditions. It may be used to evaluate drip irrigation tubing by inputting inline emitter flow and lateral diameter parameters.

Enter data for lateral length, inlet pressure and lateral slope conditions to get calculations that provide lateral performance information including lateral uniformity, total flow and travel time. The software specifies non-uniform slope conditions from contour maps or topographic surveys. Slopes or elevations are entered for calculations related to individual emitters along the lateral.

The program predicts pressure variation and emitter discharges along the length of the lateral. PC-Drip creates graphical depictions of lateral performance, which may be viewed on-screen or printed in color. Graphs provide a visual aid to the irrigation system designer and operator.



Rain Bird Agri-Products Co.
Glendora, California, USA; 626-852-7187

VRC MultiCoils Take the Chill Out of Liquids within Seconds

VRC MultiCoils are a series of coiled tubes, in a Coded Pressure Shell, which heat and cool using hot or cold water as the heat transfer media. MultiCoils can heat milk or fruit juices from refrigerated temperatures to sterilizing temperatures in the 295°F (146°C) to 290°F (143°C) range within five seconds.

VRC MultiCoils take advantage of secondary flows developed in the coiled tubes. This means no protrusions in the tubes, including corrugations or dimples, are required to develop turbulence. The units are more sanitary than other heat exchangers and can be easily cleaned because they have no gaskets or seals.

VRC Co. Inc.
Hiawatha, IA, USA; 319-395-7882

AE50 OUTSTANDING INNOVATIONS 1999

PC Dripline Provides Uniform Flow and Reduced Clogging for Drip Irrigation Systems

Rain Bird's PC Dripline is an in-line emitter tubing innovation that combines emitter design with precise extrusion techniques for a drip irrigation product with improved performance.

The PC Dripline offers pressure compensation, uniform flow along a lateral line and clog-resistance over a range of operating pressures with varying water quality. As pressure increases, the emitter flow path is lengthened. Precision extrusion techniques ensure performance consistency. Growers benefit from higher yields, improved products and longer productive life for their irrigation system.

Rain Bird Agri-Products Co.
Glendora, California, USA; 800-HELLO-AG

Accu-Bale Shows Operators Size, Shape and Number of Hay Bales Produced

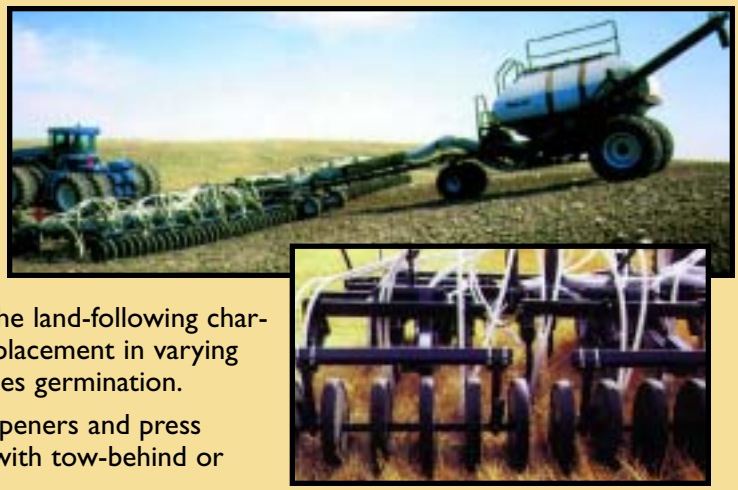
The Accu-Bale control system for round balers consists of a controller, wire harness and sensors mounted on the baler. The controller displays bale size throughout bale growth, plus bale shape, bale count, tailgate status, tie/wrap cycle status and error messages. The system allows tractor seat operation of bale size setting, twine or netwrap selection, twine or net applied amounts, miscellaneous tie/wrap cycle modifications and volume level.

Overfill protection activates before damage occurs. Bale shape is displayed using software logic that combines the inputs of four switches on the baler. Right and left wind guard switches indicate hay entering the chamber on each side of the baler. Right and left belt tension switches indicate hay placement in the chamber.

Vermeer Manufacturing Co.
Pella, Iowa, USA; 515-628-3141

AE50 OUTSTANDING INNOVATIONS 1999

Flexi-Coil 7500 Air Drill's Fold-Up Design Makes Storage Easy and Travel Safer



The Flexi-Coil 7500 air drill includes models up to 70-ft. (21.3-m) wide in field position. But SLIM™ — a trademark of Flexi-Coil — technology enables this large machine to fold to a transport height and width comparable to that of large 4WD tractors. This feature makes inside storage and field access easier and road travel safer.

The 7500 also offers growers improved access to openers for inspection or service. The land-following characteristics provide precise seed and fertilizer placement in varying conditions. Consistent on-row packing enhances germination.

The 7500 air drill accommodates a range of openers and press wheels to match conditions and can be used with tow-behind or tow-between air carts.

Flexi-Coil
Saskatoon, Saskatchewan, Canada; 306-934-3500

FiberView Sensor Targets Food, Pharmaceutical and Chemical Industries

The FiberView sensor measures light backscatter — light reflected off particles in the opposite direction of incidence. Light from an LED is transferred to particulate fluid through optical fibers and transmitted back to a detector.

This sensor capitalizes on the miniature size of optical fibers and uses the latest optical components. The design incorporates these components into a compact, rigid, sanitary corrosion resistant and watertight assembly similar to commercially available RTD sensors. The design complies with 3A Sanitary Standard 46-01.

The FiberView is designed for the food, pharmaceutical and chemical process industries. Potential uses include detecting transitions and monitoring changes in particulate liquids, pastes, slurries and waste streams.

Reflectronics Inc.
Lexington, Kentucky, USA; 606-269-9411

AE50 OUTSTANDING INNOVATIONS 1999

Valley Precision Corner Machine Eliminates Moving Parts Common to Other Irrigation Systems

The Valley® Precision Corner™ increases crop yield and grower income by using irrigation to turn marginal or unproductive acreage into crop-producing land. A swing-out irrigation span attaches to the last regular drive unit of a pivot. An on-board computer with Compu-Spray™ customized software operates the corner arm for uniform water and chemical application.

Horizontal and vertical movement are absorbed by a ball-and-socket joint rather than a span. The unit handles rugged terrain with twice the slope absorption of other corner machines. The simplified design eliminates bearings, track and rollers, oscillating components, mechanical switches and plastic cams common to most corner machines. A Computer-Aided Management System (C:A:M:S™) corner control panel contains customized software that communicates with the swing arm. Diagnostics are displayed on an LED screen and indicator lights display machine status.

Valmont Irrigation
Valley, Nebraska, USA; 800-825-6668

Automatic Grain Dryer Moves Hotter Grain Faster for Better Results

The Sukup Automatic Grain Dryer's main feature is its patent pending quad metering roll system. This system produces more even moisture content as its upper metering rolls move the hotter, inner layer of grain down the dryer column faster than the cooler, outer layer. The process reduces over drying and produces higher quality grain.

The dryer also features incoming and discharged grain moisture sensing. Sensors on the dryer measure grain moisture content, rather than grain temperature variations, to provide more accurate moisture control. A user-friendly microprocessor provides trouble-free operation while an LCD readout supplies system updates and leads the operator through start-up. A self-diagnostics system alerts the operator to problems and suggests corrections.

Sukup Manufacturing Co.
Sheffield, Iowa, USA; 515-892-4222

AE50 OUTSTANDING INNOVATIONS 1999

Super Boom Model Lx985 Skid-Steer Loader offers Vertical Lift for Longer Reach

The Super Boom™ Model Lx985 Skid-Steer Loader is the newest member of New Holland's Super Boom skid-steer loader family in the greater than 2,100-lb. (950-kg) lift-capacity segment. The Lx985 features an 83-hp engine and high-flow hydraulic system. The boom's vertical-lift linkage moves the bucket vertically for increased lift and longer reach at maximum height.

A 51.5-in. (130.8-cm) wheel base and lower center of gravity give the unit a smooth ride and stability. Its low vehicle-weight-to-lift-capacity ratio provides a nimble, maneuverable and fuel-efficient vehicle. Ground speed can be changed between low range and high range up to 12.1 mph.

New Holland North America Inc.
New Holland, Pennsylvania, USA; 717-355-3663

HydroSense Probing Device Takes Guesswork Out of Soil's Water Content

The portable HydroSense™ Soil Water Measurement System consists of a digital display and probe easily inserted into the soil surface. The system's water content measurement mode displays volumetric water content in percentages. The water deficit mode displays a relative water content based on user-chosen lower and upper water content reference levels. The device also displays the amount of water needed to bring the water content to the upper reference value.

The display unit is battery-powered and microprocessor-controlled, housed in a splash-proof enclosure. The soil moisture probe, which is sensitive to the soil property dielectric permittivity, outputs a signal proportional to soil water content.

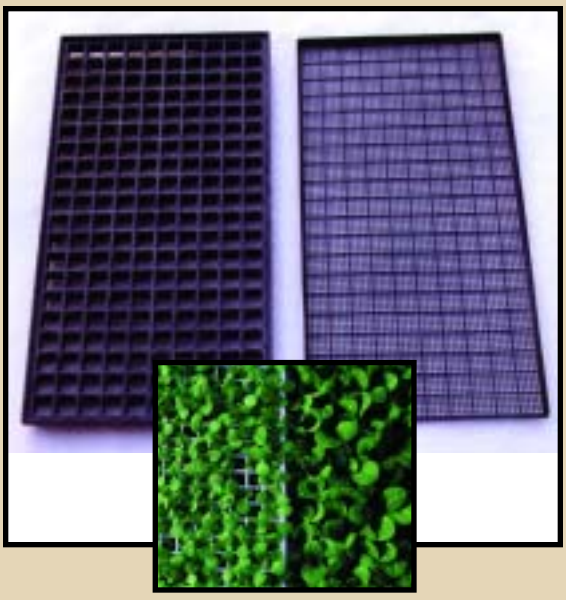
Campbell Scientific Inc.
Logan, Utah, USA; 435-753-2342

AE50 OUTSTANDING INNOVATIONS 1999

Root Air-Pruning Tray Design Increases Plant Production

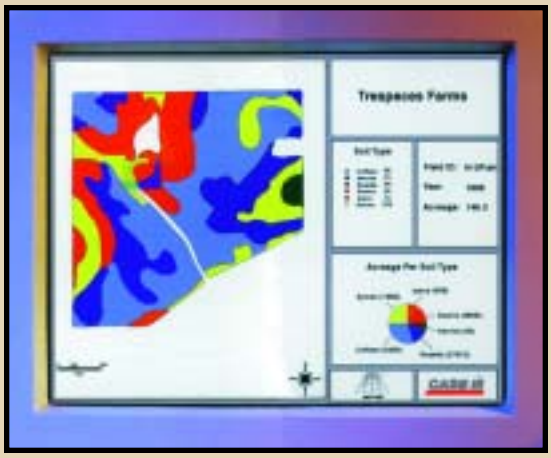
The root air-pruning plant/seedling/cutting/plug growing tray system is a tray with an array of individual plant cells that have open tops and bottoms with a detachable screen bottom.

The cells/containers are small at the top and gradually get larger at the bottom. This shape allows for roots to grow downward for air-pruning, eliminates root binding, spiraling and tangling and promotes root branching. Accelerated root formation provides higher yields and crop quality. Transplanting mechanization is improved because air-pruned plants can be manually/automatically removed from the open tray cell tops or bottoms. Traditional tray cell/container designs are smaller at the bottom and larger at the top, which causes root binding and deters root development, resulting in slower growth and lower yields.



Air-Pruning Technologies
Raleigh, NC, USA; 919-772-8446

Agri-Logic 98 Crop Management Package Covers all the Bases



Agri-Logic™ 98 is a new suite of software composed of four applications: Instant Crops™ 98, Instant Survey™ 98, Instant Yield Map™ 98 and Pocket Survey™ 98.

Instant Yield Map 98 is an application for mapping data collected with grain yield monitoring systems. Instant Survey 98 is a multi-layer mapping application for site-specific farming that enables growers to track spatial data. Instant Crops 98 is a record keeping application that tracks annual farm inputs such as seed, fertilizer, applicator fees and yields. Pocket Survey 98 is a mobile, data acquisition application that runs on handheld PCs. It maps field boundaries, soil sampling locations and crop scouting observations.

Agri-Logic 98 is available in English, French, German and Latin American Spanish.

Case Corp., Advanced Farming Systems
Burr Ridge, Illinois, USA; 414-636-7011

AE50 OUTSTANDING INNOVATIONS 1999

Grizz LSW Tire and Wheel Assembly Operates at Lower Air Pressures

The Grizz LSW low aspect ratio tire and wheel assembly maintains rolling outside circumference while offering improvements over conventional tire-wheel combinations. More vertical and lateral stability reduces vehicle roll and lean. The assembly operates at lower air pressures to reduce soil compaction and at fewer lateral and vertical oscillations to reduce power hop and road lope. This system enhances stability for a tractor, skid steer, telescopic lift or backhoe.

Reduced sidewall height and increased rim diameter provide a larger brake clearance. The combined bead seat angle and low tire section height offer a stable tire-rim assembly that is more resistant to bead unseating and rim slip.

TITAN Tire Corp. of Ohio
Mogadore, Ohio, USA; 330-798-7555

Model LM430 Telehandler Agricultural Materials Handler Takes Pain Out of Heavy Lifting

The Model LM430 Telehandler is a new materials handler for the agricultural market. It features a 106-hp engine and two-section telescoping boom that extends to 22 ft. (6.6 m) for improved reach and lift. A hydraulic joystick controls boom movement.

The 6,000-lb. (2,700-kg) load rating, multiple attachments, improved ground clearance and three steering modes provide better performance and maneuverability. One lever selects two-wheel front steering for normal operation, circle all-wheel steer for tight turns, or crab steer to move in and out of close quarters. A rear-mounted engine and low-mounted boom ensure stability and visibility.

New Holland North America Inc.
New Holland, Pennsylvania, USA; 717-355-1975

AE50 OUTSTANDING INNOVATIONS 1999

Star Logger Wrist-Sized Computer Collects and Stores Field Data

The Star Logger™ is a robust, easy-to-use device for field collecting geo-referenced sensor or field attribute data. This technology offers an alternative to portable computers and other complex data recording devices used in the field.

The Star Logger attaches to a user's wrist or arm to free the hands for operating a sensor or input device. The logger features a nonvolatile memory, LEDs for feedback on battery status, memory capacity and GPS operation. It also provides two RS-232 data ports for the sensor or recording device and GPS receiver.

Spectrum Technologies Inc.
Plainfield, Illinois, USA; 800-248-8873

European Cylinder Tine Separator Combine Meets Global Marketplace Needs

The European Cylinder Tine Separator (CTS) combine uses the John Deere CTSII self-propelled combine as a base to meet harvesting needs and conditions unique to Western Europe. It features a 270-bushel (9,500-L) grain tank with a folding loading auger and steel covers that are electrically raised for maximum tank capacity then lowered to meet Europe's 4-meter transport height limit. To overcome truck transport restrictions, the combine chassis provides a 9.9-ft. (3-m) steel-to-steel width. The European CTS offers a high speed fine cut straw chopper. Its chop-to-drop design allows an operator to convert from straw chopping to windrowing in less than three minutes. Its advanced header control system returns the header to the previous cutting height and ground pressure when turning back into the crop.

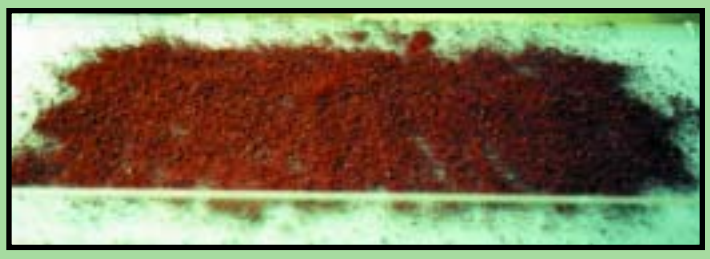
John Deere Harvester Works
East Moline, Illinois, USA; 309-765-2034

AE50 OUTSTANDING INNOVATIONS 1999

OptiCor Guarantees Cattle Take Their Vitamins and Minerals

MoorMan's OptiCor beef range minerals are a breakthrough in delivering mineral supplements to grazing cattle. The fine trace minerals are coated to a portion of the coarse ingredients in the mineral mix and treated with a protective final coating. This method reduces the tendency for the product to segregate during handling or be lost due to wind or rain exposure.

Each cow receives the proper balance of minerals on each trip to the feeder, with little nutrient loss to the environment. The resulting improved use of available forages leads to better animal performance and economic return to the beef rancher.



ADM Moorman's Inc.
Quincy, Illinois, USA; 217-222-9060

MX Series Tractors have Electronically Controlled Transmissions to Improve Shift Quality

The five MX Series Magnum high horsepower row-crop tractor models combine innovation and technology. MX240 and MX270 tractors feature a new Case 8.3L engine with four valves per cylinder, a full authority electronic fuel control system and an air-to-air after cooler. The MX270 offers a 235 PTO hp.

A self-adjusting and diagnosing electronically controlled transmission provides improved shift quality for the machine. A cast iron surround frame moves the engine 20 in. (50.8 cm) forward to provide full isolation engine mounting and a turning radius at 60-in. tread settings. The new models' hitch offers a 16,000-lb. (7,200-kg) lift capacity, and the cab's 68.5-ft.^{2} (63,636-cm^2) of glass provide increased visibility.

Case Corp. Agricultural Tractors
Racine, Wisconsin, USA; 414-636-7854

AE50 OUTSTANDING INNOVATIONS 1999

Korvan Model 3000 Grape Harvester Keeps on Picking

The self-propelled Korvan Model 3000 Grape Harvester harvests tons of produce under the toughest farm conditions or in distinguished vineyards with minimal reconfiguration. This machine is powered by an 80-hp diesel engine with two hydraulic pumps: one for the hydrostatic drive and the other for the picking unit. The second pump uses a load sensing system for increased efficiency.

The 3000 is light, can climb 30% grades and is maneuverable due to its three-wheeled design. Bow rod technology harvests the fruit, which is conveyed in plastic buckets to minimize juice loss. The Korvan Model 3000 is also easy to maintain.

Korvan Industries Inc.
Lynden, Washington, USA; 360-354-1500

DiscPro Mower Conditioner Makes its Debut as a Real "Swinger"

The Vermeer DiscPro Mower Conditioner is a new concept in domestic mower conditioners. One feature that sets the DiscPro apart from other machines is its swing back suspension, which swings away from obstacles in its path. The suspension minimizes lifting force through its range of motion. Other machine suspensions push their headers from behind with suspension arms angled down. When the headers strike an obstacle, they are forced into the ground, which causes undue stress to the machines.

Another DiscPro advantage is its modular conditioner. A common carrier frame that mounts the cutter bar and drive components accepts different conditioning modules. A roller or tine conditioner may be attached to the machine with minimal assembly time. This feature also makes the machine easier to service.

Vermeer Manufacturing Agricultural Division
Pella, Iowa, USA; 515-628-3141

AE50 OUTSTANDING INNOVATIONS 1999

Byron Harvest Tech In-Cab Computer System Yields Wealth of Information

The Byron Harvest Tech System is a harvest management tool that combines four applications on a rugged touch screen PC in the Byron Harvester cab. The system includes YieldCheck, a yield monitor for sweet and seed corn, and TechBook's online operator, service and parts manuals.

Other modules include TechTools, for machine monitoring with diagnostics, and TechTalk, a remote access package for machine monitoring and data transfer. The patent pending yield monitor combines load, angle and speed sensors to determine yield with speed adjusted DGPS location correction for improved yield map accuracy. Truckload monitoring provides fleet management in the field and a database for post-season analysis.

An operator interface provides finger touch interaction and voice output warnings. The Pentium PC can also be used outside the harvester for field mapping or office management.

OXBO International Corp./Byron Equipment
Byron, New York, USA; 716-548-2665

1560 Grain Drill Improvements Allow for Easier Operation

The John Deere 1560 No-Till Grain Drill incorporates customer requests such as a patented feature that allows the opener to float over undulating soft soils for increased depth control without excessive down force. Opener down force is adjusted hydraulically to match field conditions from a single point by 0.25-in. (0.63-cm) increment depth settings from 0.5 in. (1.27 cm) to 3.5 in. (8.9 cm) No tools are needed for depth adjustment or down force settings.

The redesigned opener hub has a sealed bearing to reduce service time, and grain tank capacity has been increased 25%.

Deere & Company Seeding Group
East Moline, Illinois, USA; 309-765-2240

AE50 OUTSTANDING INNOVATIONS 1999

Ethylene Monitoring and Control System Saves Time, Labor Costs

Geo-Centers Inc.'s patent pending Ethylene Monitoring and Control System offers an automated, simple, fast way to monitor and control ethylene concentrations in degreening, ripening and produce storage applications.

Units are optimized for citrus degreening and provide a zero ppm to 20-ppm measurement range, 0.5 ppm (at 5 ppm) accuracy and less than 30 seconds response time per room monitored.

The system is based on a chemiluminescent reaction. A single sample chamber, light detector and processor monitor ethylene levels at up to 12 locations. A metering/sampling system ensures that consistent room gas samples and ozone gas concentrations are introduced into the unit's sample chamber. The unit eliminates the need for manual sampling, manual color analysis and operator expertise currently required for ethylene measurements.

Geo-Centers Inc.
Newton Centre, Massachusetts, USA; 617-964-7070

Flexi-Coil Task Controller Offers a Cure with or without a Prescription

The Flexi-Coil Task Controller allows automated variable rate application of seed, fertilizer or herbicides using GPS control. The Task Controller uses location information from the GPS receiver to adjust rates via FlexControl electronics according to information supplied by the farmer.

Built-in compatibility permits the Task Controller to use prescriptions generated from many popular GIS software packages and to interface with several brands of GPS receivers. The unit keeps a detailed log to create "as-applied" maps. It can also be used without a prescription for data logging and tagging features in the field for record keeping.

Flexi-Coil
Saskatoon, Saskatchewan, Canada; 306-934-3500

AE50 OUTSTANDING INNOVATIONS 1999

TRUCTOR Vehicle is a Tractor and Dump Truck All in One

The TRUCTOR® combines a tractor with a dump truck for tillage and transport tasks in farming and land management. TRUCTOR's "T-Series" are full-chassis tractor-trucks with 49-hp, 56-hp, 66.5-hp and 74-hp diesel engines. They are 4WD with automatic trac-lock differential axles, two-speed transfer cases and hydrostatic transmissions. Their hydraulic PTOs and 3-point hitches can be transferred from the vehicle's rear to front in about 10 minutes, after the optional front loader is removed.

The dump body has a 2,000-lb. (900-kg) load capacity and 2,500-lb. (1,125-kg) hydraulic lift. The T-Series seats three people in a ROPS cab with a windshield. The fuel tank holds 20 gal. (76 L) and the hydraulic reservoir 32.5 gal. (123.5 L). The vehicle's weight is 5,640 lb. (2,538 kg), length is 126 in. (320 cm), width 74 in. (188 cm), height 92 in. (233.7 cm), wheelbase 87 in. (221 cm), ground clearance 16 in. (40.6 cm), drawbar pull 3,800 lb. (1,710 kg) and top speed 24.5 mph.

Tructor Inc.
Marion, Massachusetts, USA; 508-748-1200

Model TV140 Bidirectional: Is this Tractor Coming or Going?

The New Holland Model TV140 Bidirectional™ Tractor can be operated engine-end or cab-end first to provide maximum productivity and loader performance. The redesigned 105-hp machine features a PTO and 3-point hitch at both ends for double capacity to mow, condition, till, plant, cultivate, spray, or push and pull mowers simultaneously.

With the pull of a lever, the exclusive Turnabout™ console rotates the seat, steering wheel and primary controls 180 degrees so the operator always faces his or her work. A spacious cab offers an adjustable air-ride seat, large glass area, wipers and work lighting on both ends. The hydrostatic, articulated steering system provides turning with a 60-in. (152.4-cm) track.

New Holland North America Inc.
New Holland, Pennsylvania, USA; 717-355-3663

AE50 OUTSTANDING INNOVATIONS 1999

BeachMaster Aims to Make Shorelines Safer without Harming the Environment

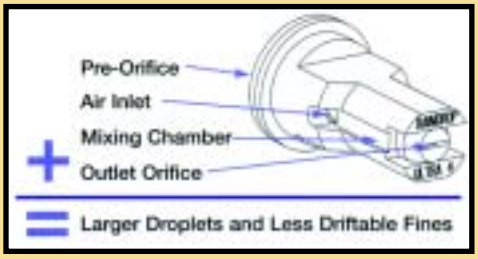
The Gallenberg BeachMaster beach cleaner removes debris from beaches and turf using a patent pending sweeping process. The machine can skim a surface to pick up debris — while protecting fragile ecosystems — or dig 8 in. (20.32 cm) into sand.

On e-coli contaminated beaches, the BeachMaster digs 6 in. (15.24 cm) to 8 in. (20.32 cm) and sand is turned over to bring e-coli to the surface where it is irradiated by the sun. This cleaning process can help destroy dangerous bacteria.

The BeachMaster collects cigarette-butt size to 22-in. (56-cm) diameter debris up to nearly 5 ft. (1.5 m) long. It cleans beaches, playgrounds, volleyball courts, golf courses, ball fields, grass or any sandy area. The BeachMaster also picks up rocks while cleaning.

Gallenberg Equipment Inc.
Antigo, Wisconsin, USA; 715-623-3754

RAINDROP ULTRA's Larger Droplets Make this Spray Nozzle Effective



A RAINDROP® ULTRA nozzle includes a round pre-orifice to meter fluid, an elliptical outlet orifice to form a fan spray and a mixing chamber between the two. The mixing chamber is vented by two side holes near the pre-orifice. A high velocity jet from the pre-orifice causes a vacuum zone near the side holes and air is induced into the mixing chamber. Air and liquid mix in the chamber and axially travel toward the elliptical outlet orifice.

The exit liquid velocity at the outlet orifice is decreased due to energy loss through the pre-orifice and outlet orifice, which is larger than that of a conventional fan-spray nozzle. The fan spray of the RAINDROP ULTRA nozzle produces larger droplets and less volume of droplet compared to a conventional fan-spray nozzle.

Delavan Spray Technologies
Monroe, NC, USA; 704-291-3111

AE50 OUTSTANDING INNOVATIONS 1999

9000 Planting System is a Wide Planter with Narrow Transport Position

Flexi-Coil's 9000 planting system offers a wide planter with narrow transport position. Models up to 60-ft. (18.3-m) wide reduce to 12 ft. 8 in. (3.9 m) in transport. In the field, the 9000 with InterRow™ technology offers precision and efficiency for planting corn and soybeans. It combines an air cart with row unit singulators and FSO disc openers.

The air cart provides high capacity and central fill efficiency, row unit singulators deliver precision and the InterRow concept adds versatility for planting soybeans or banding fertilizer. Variable rate row unit drive control offers convenient precise in-cab rate-setting and the option to alter rates on-the-go.

Flexi-Coil
Saskatoon, Saskatchewan, Canada; 306-934-3500

AFS Concord Air Seeder Monitors Planting and Fertilization from Inside the Cab

The AFS Concord Air Seeder provides an integrated system for controlling seed, fertilizer and anhydrous ammonia application from an in-cab display unit. Besides application rates, the system controls and monitors the hydraulic fan. It also monitors individual run blockages and product status can be viewed through a four-level bin sensor system.

This variable rate control for the seeder compartment and anhydrous flow control system, along with run blockage monitoring, is achieved using three or more in-cab displays that are connected to the seeder. The new AFS Concord system integrates all functions into a single controller area network (CAN)-based infrastructure. Variable rate control is at the touch of the display or works automatically through a new prescription generation software package called Instant Application Map.

Case Corp.
Fargo, North Dakota, USA; 701-298-5927

AE50 OUTSTANDING INNOVATIONS 1999

Rain Bug PC Emitters Keep Drip Irrigation Flowing Smoothly

The Rain Bug PC Emitter pressure compensating drip irrigation product's patented 3-D turbulent water passage improves compensation during operation. Its pressure-compensating diaphragm delivers uniform flow at varying pressures.

Rain Bug PC Emitters overcome uneven terrain and long lateral lines to operate at lower pressures, which reduces pumping costs and saves energy. A self-piercing inlet barb option used with the Bug Gun installation tool provides fast, leak-free installation and reduces labor costs.

Rain Bird Agri-Products Co.
Glendora, California, USA; 800-HELLO-AG

Glacier-Guard Programmable Cooler/Wash Control Improves Milk Quality

The Glacier-Guard programmable cooler/wash control regulates milk cooling and storage tanks on dairy farms. This microprocessor-based system combines two controls into one.

The cool mode is programmed with selected refrigeration prestarts and/or time-delayed starts to cool and maintain milk temperatures and protect milk quality. The wash mode cleans and sanitizes the milk tank by automatically adding water and chemicals at specified times while operating the wash pumps, agitators and drain valves.

The Glacier-Guard control can be programmed to collect and store milk temperatures, compressor, agitator and wash system parameters in its on-board memory. This information is shown on an LCD display or may be downloaded to a computer for storage and diagnostics. Milk temperatures can be printed in real-time using a strip chart recorder instead of a conventional circular chart recorder.

Bou-Matic, a division of DEC International
Madison, Wisconsin, USA; 608-222-3484

AE50 OUTSTANDING INNOVATIONS 1999

AFS Planter's Touch Screen System Lets the User Control all Functions from One Place

The hydraulically controlled Case-IH Advanced Farming System (AFS) Planter allows tractor cab control of input rates for seed, liquid fertilizer and granular chemicals. All planter control and monitoring functions, including frame-fold, marker control and air pressure sub-systems, are integrated into a single network. Farmers can control individual rates for each product independently or turn sections on and off for planting point or side rows.

While other available planters offer variable rate seed or chemical control, the AFS Planter puts all rate and machine control in one place. User interface is through an AFS Universal Display, which provides a touch-screen system for control and monitoring functions.

Case Corp.
Burr Ridge, IL, USA; 630-887-2345

Model 365W Windrow Pickup Attachment
Follows Field Contours

New Holland's extra-wide Model 365W Windrow Pickup Attachment harvests volumes of crops quickly, its 15-ft. (450-cm) pickup handling bigger, wider windrows. It picks up two windrows at once and sweeps field corners for complete pickup in one pass.

Lateral float control, which is exclusive to North America, enables the unit to follow field contours for cleaner pickup with no operator assistance. Optional flotation rollers for better ground gauging are also exclusive to North America but reversible tine guard bands are available worldwide. The Model 365W windrow pickup has a 14 ft. 11.5 in. (4.5 m) working width and 15 ft. 18.5 in. (60 m) overall width. It is designed for use only on New Holland FX self-propelled forage harvesters.

New Holland North America Inc.
New Holland, Pennsylvania, USA; 717-355-3663

AE50 OUTSTANDING INNOVATIONS 1999

AquaLab Series 3 Measures Water Activity Faster in Food, Cosmetics and Pharmaceuticals

The AquaLab Series 3 uses the chilled-mirror dew point method to measure water activity in food, cosmetics and pharmaceutical samples.

In the AquaLab, a sample is equilibrated within the headspace of a sealed chamber. At equilibrium, the relative humidity of the headspace is the same as the water activity of the sample. A thermoelectric (Peltier) cooler precisely controls the mirror temperature. The exact point at which condensation first appears is observed using a photoelectric cell. A thermocouple attached to the mirror records the temperature at which condensation occurs.

AquaLab also uses an internal fan to control the vapor boundary layer and an infrared thermopile to measure the sample's surface temperature. Using both temperatures eliminates the need for thermal equilibrium and reduces measurement times to less than five minutes.

Decagon Devices Inc.
Pullman, Washington, USA; 509-332-2756

Advanced Farming Systems Universal Displays
put Agricultural Equipment at Fingertip Command

Case IH Advanced Farming Systems (AFS) Universal Displays are in-cab units that control and monitor crop production equipment such as planters and air seeders. They also provide an interface to a crop harvesting yield monitoring system.

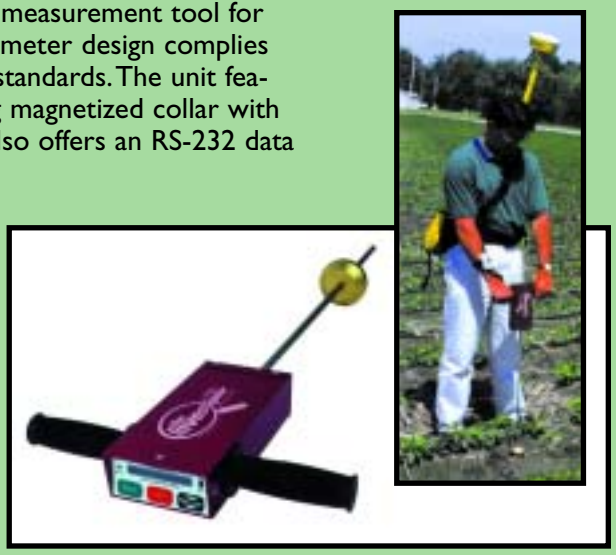
The AFS Universal Display allows farmers to perform everything from basic seed monitoring to full, one-touch hydraulic equipment variable rate control. The AFS Universal Display Plus allows farmers to apply crop inputs by prescription and record data. When used with a differential global positioning system (DGPS) receiver, it also marks field observations such as weeds, wet spots and field boundaries. Application software is loaded at the factory so displays automatically configure themselves to connected equipment.

Case Corp.
Burr Ridge, IL, USA; 630-887-2345

AE50 OUTSTANDING INNOVATIONS 1999

Investigator Soil Compaction Meter Gathers Data in the Field

The Investigator™ Soil Compaction Meter is a versatile measurement tool for capturing site-specific soil quality data. The cone penetrometer design complies with American Society of Agricultural Engineer's S313.2 standards. The unit features a load cell for sensing cone resistance and a sliding magnetized collar with internal shaft reed switches for depth measurement. It also offers an RS-232 data port and a control panel with LCD display.



Soil compaction prevents moisture penetration, reduces fertilizer and chemical utilization and hinders plant growth. Compaction reduces soil nutrient and water carrying capacity by decreasing the pore space between the soil particles. Research shows that soil compaction reduced corn stands 20% to 30%, plant vigor 30% to 50% and yields up to 60%. Also, compacted soils can require up to 92% more power for tillage. The Investigator helps alleviate these problems.

Spectrum Technologies Inc.
Plainfield, Illinois, USA; 800-248-8873