

# RESOURCE

Engineering & Technology for a Sustainable World

July 2007



***Includes***  
**2007**  
**Guide to**  
**Consultants**

## Conferences and International Meetings

To receive more information about ASABE conferences and meetings, contact ASABE at 800-371-2723 or [mcknight@asabe.org](mailto:mcknight@asabe.org).

### 2007

Sept. 15-19 **International Symposium on Air Quality and Waste Management for Agriculture.** Broomfield, Colorado, USA.

Oct. 20-24 **Eleventh National Symposium on Individual and Small Community Sewage Systems.** Warwick, Rhode Island, USA.

### 2008

June 29-July 2 **ASABE Annual International Meeting.** Providence, Rhode Island, USA.

## ASABE Section and Community Events

### 2007

- July 29-Aug. 1 **NABEC Annual Meeting.** Ohio Agricultural Research and Development Center, Wooster, Ohio, USA. Contact Rebecca Lowry, [rebecca.lowry@oh.usda.gov](mailto:rebecca.lowry@oh.usda.gov).
- Oct. 12-13 **2007 Red River Valley/CSBE, CSBE/ASABE North Central Intersectional Conference.** North Dakota State University, Fargo, North Dakota, USA. Contact Dean Steele, [Dean.Steele@ndsu.edu](mailto:Dean.Steele@ndsu.edu) or Paul Aakre, [PAakre@mail.crk.umn.edu](mailto:PAakre@mail.crk.umn.edu).
- Oct 27 **Nebraska Section Meeting.** Lied Lodge and Conference Center, Nebraska City, Nebraska, USA. Contact Stacy Modelski, [stacy.modelski@ne.usda.gov](mailto:stacy.modelski@ne.usda.gov).
- Oct 30 **Quad City Section Fall Meeting.** Bettendorf Family Museum, Bettendorf, Iowa, USA. Contact Eric Windeknecht, [WindeknechtEricD@JohnDeere.com](mailto:WindeknechtEricD@JohnDeere.com).

## ASABE Endorsed Events

### 2007

- Sept. 30-Oct. 5 **CID 58th International Executive Council Meeting and USCID Fourth International Conference on Irrigation and Drainage.** U.S. Committee on Irrigation and Drainage. Contact Larry Stephens, [stephens@uscid.org](mailto:stephens@uscid.org).
- Oct. 28-Nov. 2 **Second International Symposium on Soil Water Measurement Using Capacitance, Impedance and Time Domain Transmission (TDT).** USDA-ARS Beltsville Agricultural Research Center, Beltsville, Maryland, USA. Paltin International Inc. in cooperation with the USDA-ARS Beltsville Agricultural Research Center. Contact Ioan Caton Paltineanu, [icpaltin@msn.com](mailto:icpaltin@msn.com), [www.paltin.com](http://www.paltin.com).

## Loose Ends and Errata

The February 2007 *Resource* featured an article on the Nebraska Tractor Test Laboratory. Inadvertently, the article failed to mention that the Nebraska Tractor Test Laboratory is a part of the University of Nebraska's Biological Systems Engineering Department, the successor to the Agricultural Engineering Department to which the Nebraska Tractor Test Law assigns responsibility for testing tractors.

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# RESOURCE

Engineering & Technology for a Sustainable World

July 2007

## FEATURED SECTIONS

### AE50 Awards

The winners of this year's *AE50* competition are showcased in a special section with photos and descriptions devoted to 2007's award-winning products. They capture the gleam of *Resource's* spotlight but, best of all, reflect the many gifted and bright engineers and co-workers who creatively harness and manage company resources and talent. Team-playing, company innovators executed new designs and orchestrated innovative manufacturing ventures: machines, components, and systems that enhance and improve agricultural, biological, and food related industries. These *AE50* recipients, who introduced products in 2006, follow in a time-honored tradition of high-tech ingenuity and down-to-earth creativity – and have the singular distinction of being saluted during the Society's celebratory centennial year.

### Guide to Consultants

*Special pull-out section!*

Our annual list of professional engineers and engineering firms can be easily pulled out and saved for handy, future reference. Find the 2007 *Guide to Consultants* in the magazine's center. Be sure to save it – where you can find it again!

## FEATURE

### 3 Multi-Tasking

Ron Knaus

Engineers often “feel the heat” from high-performance agendas. Cool down with refreshingly simple ways to multi-task successfully and eliminate excessive stress.



## INSIDE ASABE

- 5 Headquarters Named ASABE Historic Landmark**  
The location of the Society was honored at a historic landmark dedication April 20 at ASABE's International Headquarters.

## DEPARTMENTS

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## LAST WORD

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John Cundiff

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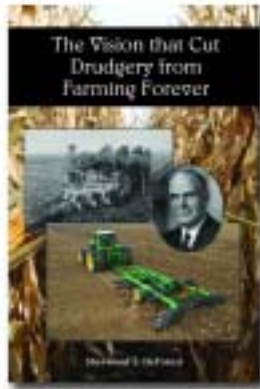
*Magazine staff:* Donna Hull, Publisher, hull@asabe.org; Suzanne Howard, *Inside ASABE* and Update Editor, howard@asabe.org; Sue Mitrovich, Features Editor, mitro@asabe.org; Pam Bakken, Advertising Sales Manager and Production Editor, bakken@asabe.org. *Editorial Board:* Chair Edward Martin, University of Arizona; Vice Chair Suranjan Panigrahi, North Dakota State University; Secretary Jeremiah Davis, Iowa State University; Past Chair Anissa Morton, Enviro Ag Engineering Inc.; Wayne Coates, University of Arizona; Donald Edwards, Retired; Rafael Garcia, USDA-ARS; Mark Riley, University of Arizona; Brian Steward, Iowa State University; Alan Van Nahmen, Farm Buddy; and Joseph Zulovich, University of Missouri.



American Society of  
Agricultural and Biological Engineers  
2950 Niles Road  
St. Joseph, MI 49085-9659, USA  
269.429.0300, fax 269.429.3852  
hq@asabe.org, www.asabe.org

# The Past Revisited: Two New Books from ASABE

**T**his slim, articulate volume chronicles the intriguing life-story of J. Brownlee Davidson who inaugurated the agricultural engineering profession. An enterprising young man, at 26 he chaired the newly established Tractor Mechanics Department at Iowa State College (later University), which, under Davidson's steerage, launched the first four-year agricultural engineering curriculum in the United States. Davidson, with others of like mind, birthed the American Society of Agricultural Engineers in 1907. As a former student of Davidson, ASABE Past President and scholar/author Sherwood S. DeForest lauds his mentor as an "extraordinary man with a vision." Must reading for anyone engaged in the profession and of great general-public interest to those who recognize the vast contributions of agricultural engineering to today's ever-evolving world. 64 pages, 6 x 9 inches, softbound.



**Member Price: \$12.00**

**List Price: \$18.00**

**P**icking up and continuing the saga of ASABE history from the endpoint of Robert Stewart's **7 Decades that Changed America**, this timely celebration-publication encompasses Society history from the onset of the eighth decade in 1977 to the 100th anniversary in 2007. Chapters on Society structure and organization, "the name change," and strategic planning efforts are included. The evolution of the standards program, the move to electronic publishing, and other ramp-ups in the publications arena are succinctly detailed. Developments in meetings and conferences, membership campaigns, section activities, and relationships with other societies are also covered. Useful listings, such as past locations for ASABE Annual International Meetings and conferences, award and scholarship winners, as well as books published during this 30-year period are included. 174 pages, 6 x 9 inches, softbound.



**Member Price: \$17.00**

**List Price: \$22.00**

**To Order:** E-mail your order to [martin@asabe.org](mailto:martin@asabe.org), call 269-428-6324 or fax to 269-429-3852. You can also mail your request to Order Dept, ASABE, 2950 Niles Road, St. Joseph, MI 49085. Payment is by credit card or check. The shipping charge is \$4.95 for the first item and \$1 for additional items. Add 10% for shipping outside the United States. Michigan residents add 6% sales tax.



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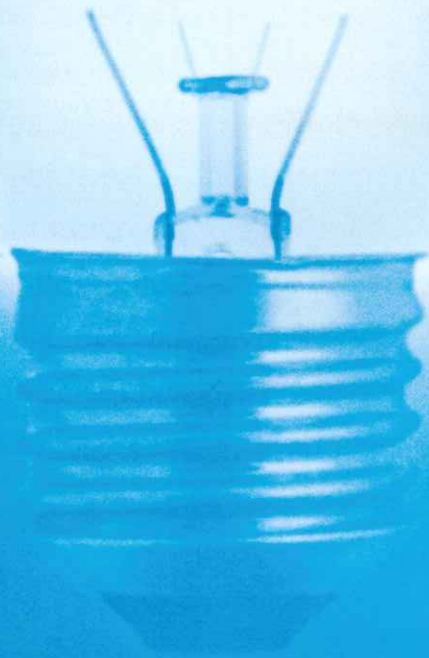


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**RESOURCE Magazine 2007**

**AES**   
**outstanding innovations**



## Congratulations, winners!

The products winning the 2007 *AE50* awards and featured in this issue represent the best and the brightest developed around the globe for the agricultural, food, and biological systems industries.

Award winners include companies of all sizes and varying inventive focus.

The innovative inventions and designs highlighted herein were selected from numerous entries in the annual *AE50* competition sponsored by ASABE's *Resource* magazine. As in every year previous, the judges who chose the winners represent all facets of the agricultural, food, biological, and related systems engineering professions. The expert panel picked the best of products first introduced to the marketplace during 2006. As always, these products are expected to save producers time, costs, and labor while improving user safety.

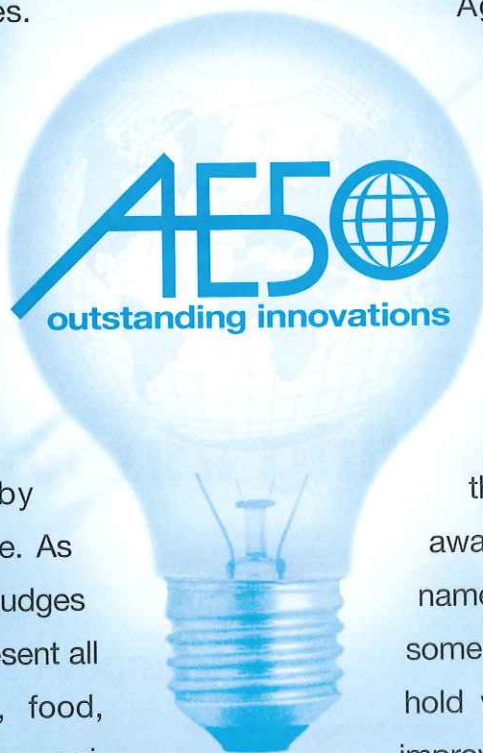
The *AE50* program has been encouraging and applauding engineering achievements for two decades. This year's winners have

the distinction of garnering a prize during the Society's Centennial year – a coincidental but nonetheless delightful reason to celebrate the achievement in 2007!

The American Society of Agricultural and Biological Engineers is proud to sponsor the *AE50*, the only awards program of its kind, celebrating companies for developments in specific areas of agricultural, food, and biological systems. Many of the honored, new ideas given awards are patented and their names trademarked. In the future, some may even become household words. Others will be further improved as technology advances.

But all who achieved the award strived for excellence, and we are pleased to showcase each one.

For information on how to enter next year's competition, please contact Sandy Rutter, [rutter@asabe.org](mailto:rutter@asabe.org) or 269-429-0300 ext. 345. Information on the *AE50* program and *Resource* magazine is also available on the ASABE Web site, [www.asabe.org](http://www.asabe.org).



2007

## Smooth Drive



The Senninger Smooth Drive™ is specifically designed for under-tree and open-field irrigation as well as nursery installations. The unique "Walking Diffuser" delivers uniformity, a gentle application, and no dry areas from bracket interference. The precision-contoured deflector provides greater throw and enhanced distribution. The Smooth Drive's advanced braking mechanism assures consistent rotation speed and minimal riser stress through a wide range of pressures. The user-friendly method of assembly means no tools are required for accessing nozzle. Flow: 277 to 633 L/h (1.22 to 2.79 gpm). Operating pressure: 1.75 to 2.75 bar (25 to 40 psi). Standard base: 0.5 in. M NPT. The Smooth Drive is also available as 1.3-cm (0.5-in.) socket and 1.9-cm (0.75-in.) spigot, vandal-resistant model.

**Senninger Irrigation Inc.**, Clermont, Florida USA;  
407-877-5655, [www.senninger.com](http://www.senninger.com)

# outstanding innovations

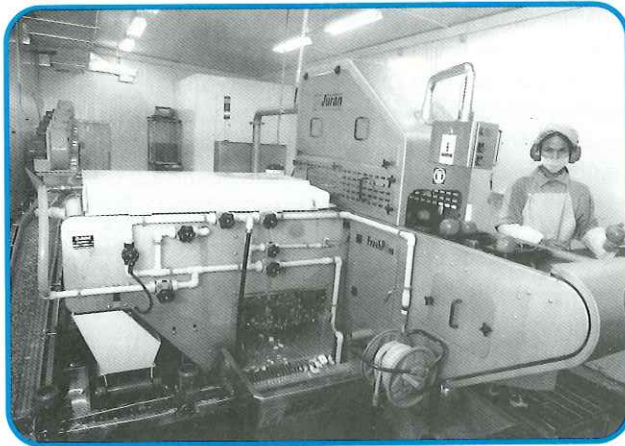
## MacDon M150 Self-Propelled Windrower Tractor

The MacDon M150 Windrower is powered by a 130-hp Tier 3 Cummins electronic engine and is newly designed to improve overall operational efficiencies for hay and grain producers with increased windrowing capacity, reduction of operator fatigue, and increased transportation speeds. Patented Dual Direction™ technology provides for increased transport speeds. A single lever releases the operator's platform, which along with the operating console, rotates through 180° allowing the windrower to be driven in the opposite direction at faster transport speeds. Reel and/or Draper speed indexation (to ground speed) is provided along with other standard features such as "return to cut height" and "float compensation." High capacity pressure-compensated/load-sensing piston pumps are used to drive the headers. Under most conditions, this design allows engine rpm to be reduced while maintaining full hydraulic power to the header resulting in fuel savings and reduced noise levels.

**MacDon Industries Ltd.**, Winnipeg, Manitoba Canada;  
204-885-5590, [www.macdon.com](http://www.macdon.com)



## ArilSystem™



The pomegranate possesses some unique characteristics with potential for diverse applications ranging from fresh to processed products including pharmaceutical and nutraceutical. In spite of its many advantages, it is currently a relatively minor crop with limited marketability. The major obstacles to realizing the fruit's full potential are the difficulties involved in retrieving the internal edible seeds (arils). ArilSystem's™ method and system enable opening the fruit without cutting, extracting the arils with minimum damage, separating the arils from any extraneous materials, and delivering clean seeds to a packaging machine. Test results indicate that it is possible to extract 1.4 to 1.8 tons (1.5 to 2 tons) of arils per day in a one-lane machine operated by one or two persons with an extraction efficacy of 95 percent and less than 5 percent mechanical damage. A local manufacturer who has already sold seven machines to several countries is currently producing ArilSystem™ commercially.

**Juran Metal Works Ltd.**, Rishon Lezion, Israel;  
972-3-964-0377, [www.juran.co.il](http://www.juran.co.il)

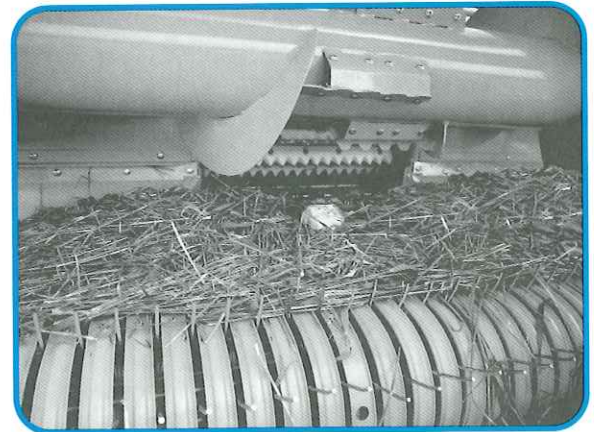


# 2007

## STOP ROCK

CLAAS STOP ROCK is used to detect foreign objects before damaging the self-propelled forage harvester. STOP ROCK prevents damage to the machine using an electronically monitored spring-mass system and sensor. If a rock or large object in the swath passes the front pre-compression roller, it is raised abruptly. The lifting speed of the roller is measured by a potentiometer. The system detects the sensitivity setting by the driver and determines whether it is a small or large rock. Intake stops immediately when the rock is above the set limit. The display on the CLAAS information system screen informs the driver and activates the reversing process in the same way as for metal detection. The rock(s) can then be safely removed from the swath. This new feature significantly increases operating safety and reduces expensive downtimes.

**CLAAS of America Inc.**, Omaha, Nebraska USA;  
402-861-1000, [www.claasofamerica.com](http://www.claasofamerica.com)





# Smart Sieve™ Grain Cleaning System



The New Holland Smart Sieve™ Grain Cleaning System is a patented self-leveling system that allows New Holland CS and CSX combines to separate high volumes of grain with minimum grain loss and maximum cleaning efficiency on side slopes of up to 25 percent, depending on the crop. The system adds a side-to-side pre-sieve and top-sieve movement to keep grain kernels from concentrating on the low side, using a combination of pivoting rods and cranks. An electric actuator positions the rod pivot points to match the degree of the slope, giving equal performance on left and right slopes. The Smart Sieve™ system adapts automatically to different crop types. It uses a variable speed fan to detect grain-kernel size and density, using the fan speed information to adapt the throwing angle and amount of lateral movement for more precise slope correction and amount of sideways shaking action.

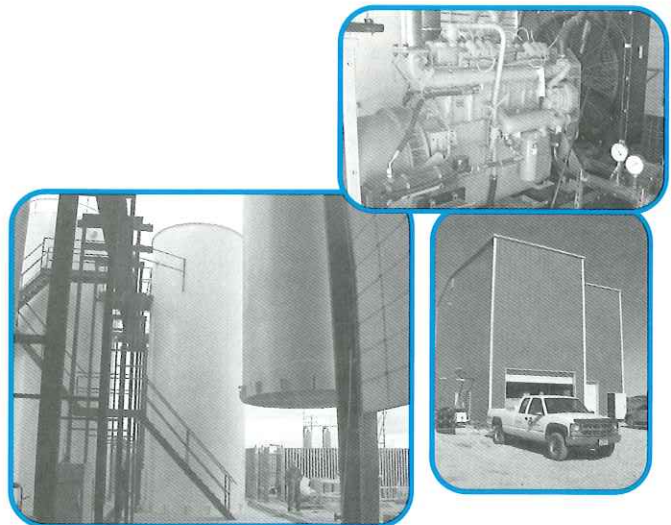
**CNH Belgium NV**, Zedelgem, Belgium;  
011-325-025-3365, [www.newholland.com](http://www.newholland.com)

## outstanding innovations

### Induced Blanket Reactor

The Andigen digester or Induced Blanket Reactor (IBR) is a continuous upflow anaerobic digester capable of treating animal manures and food waste. The digester employs a septum and a rotating apparatus to trap methanogenic bacteria and overcome plugging. The septums, submerged in tanks 10 m high x 4 m wide (33 ft high x 13 ft wide), induce a blanket or bed of living bacteria in the lower portion of the tank. Waste passing through the blanket is converted into methane by the bacteria. The tanks are above ground in a 38°C (100.4°F) enclosure ensuring optimal microbial processing of the waste. This adaptation of upflow anaerobic digestion for use with animal manures and food processing waste results in minimum improvements of five times faster digestion or digester volume sizes of one-fifth compared to other technologies. Andigen systems are modular multi-tank designs, facilitating easy expansion and isolation of tanks for scheduled maintenance.

**Andigen**, North Logan, Utah USA;  
435-760-1973, [www.andigen.com](http://www.andigen.com)



## Module Express 625 Cotton Harvester



The Case IH Module Express 625 cotton picker combines three field operations into one, greatly reducing cotton harvesting cost through use of an innovative on-board packing system. When combined with control software and multiple sensor technologies, the patented Case IH Automatic Intelligent Packing System produces a module that is half the size of traditional modules. In addition to eliminating labor and capital from harvest operations, the Case IH Module Express 625 accommodates existing transport and gin technologies. This eliminates negative and unnecessary effects from adaptation of the technology. Along with introducing on-board module building, the Case IH Module Express 625 adapts cotton harvesting's first use of Tier III engine technology, the first use of outboard planetary drive steering hubs, and increased on-board monitoring of the harvest operation. For the first time since International Harvester pioneered the mechanical cotton picker in 1943, a single-person harvest operation is possible.

**Case IH**, Racine, Wisconsin USA;  
262-636-6011, [www.caseih.com](http://www.caseih.com)



# 2007

## Korvan 7420 Berry Harvester

The Korvan 7420 Berry Harvester selectively harvests ripe blueberries and cane berries, removes debris, and delivers the fruit into a variety of different industry standard containers as dictated by fruit variety and grade. The key to its success is in the flexibility of belt layout and handling choices off a single machine platform while maintaining simple operation and high fruit quality. Featuring pivoting discharge belts, the 7420 allows for effortless changeover between different containers. The 7420 utilizes a two-stage cleaning system. The first stage effectively removes a majority of debris early in the conveyance of the fruit thus reducing the tumbling of fruit and debris together that leads to fruit damage. The harvested fruit passes through only three conveyor belts resulting in a higher level of fruit quality. A four-wheel drive system provides increased stability with the lowest ground compaction of any top-loading berry harvester on the market today.

**OXBO International Corporation**, Lynden, Washington USA;  
360-354-1500, [www.korvan.com](http://www.korvan.com)



## Pre-Spread Device for Grain Spreader



Sukup Manufacturing Co. has developed a pre-spread device that is easier and less costly to manufacture, optimizes the uniform distribution pattern of grain from a spreader, is more securely attached to the bin, and does not interfere with closing of the lid. Rather than the traditional pre-spread funnel, which extends beyond the opening of the bin, Sukup has developed a series of discs that sit inside the spreader cone. The discs form a shelf that helps guide grain toward the center of the opening to provide more uniform distribution. Laser-cut knockouts allow the diameter of the opening to be increased for larger augers. The sections that are broken off can be reinserted if a smaller auger is used in the future. Since the pre-spread rings are located inside the spreader cone, there is no risk of them falling off the spreader and into the bin, and there is no interference with the bin lid.

**Sukup Manufacturing Co.**, Sheffield, Iowa USA;  
641-892-4222, [www.sukup.com](http://www.sukup.com)

## outstanding innovations

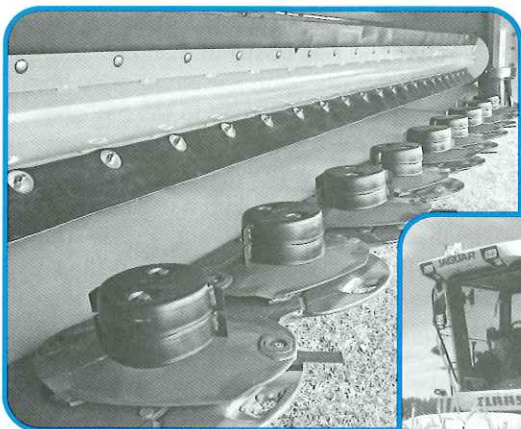
### clearadvantage™ Water Purification System

The patented Aerotech clearadvantage™ water purification system is a safe, efficient, chemical-free water purification system. By improving health, animals will process feed more efficiently bringing more product to market on less feed. Each clearadvantage™ system is designed specifically for each application. After careful analysis, the system is configured to the level of contaminants and peak flow rate ensuring proper treatment. Activated by a flow switch, the system only runs when water is being used, saving money in the process. Ozone is generated on site with no chemicals to buy, store, or refill. There are no chemical byproducts, only a healthy, high level of dissolved oxygen in the water, which is beneficial to animals. The Aerotech clearadvantage™ water purification system is a complete system design providing high quality water without the maintenance and design issues of traditional ozone systems.

**Aerotech, a Munters company**, Mason, Michigan USA;  
888-779-9200, [www.clearadvwater.com](http://www.clearadvwater.com)



## DIRECT DISC 520 Contour



The CLAAS DIRECT DISC 520 utilizes a 5.2-m (17-ft) working width to mow and chop whole crop silage in a single operation. The crop is first mowed with a disc mower, then fed to the intake auger via a paddle roller, and from there goes on to the intake housing of the forage harvester. The crop is cut by

CLAAS DISCO mower bars. The DISCO mower drive, which runs directly from the knife drum, is activated as soon as the intake is engaged. This ensures a constant and powerful speed of rotation for the mower. The feed elements, such as the paddle roller and intake auger, are driven from the chop-length gearbox. The semi-ripe plants are used for animal feed or as biomass for efficient energy production.

**CLAAS of America Inc.**, Omaha, Nebraska USA;  
402-861-1000, [www.claasofamerica.com](http://www.claasofamerica.com)

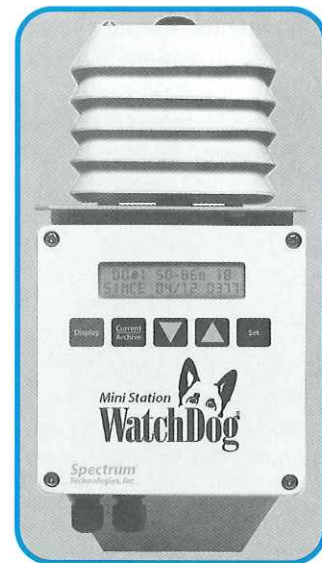


# 2007

## WatchDog® 2000 Series Mini Station

Recognizing the need for affordable weather recording in remote microclimates, Spectrum Technologies developed the WatchDog® 2000 Series Mini Stations as user-friendly devices to capture, process, and store weather history throughout the growing season. These powerful recorders present historical weather data, degree-day calculations, and plant disease alerts on location, without requiring a computer. Knowledge of site-specific weather conditions is important for making objective decisions relative to irrigation and pest management. The station's LCD displays current conditions, degree-days, and daily high/low values for the previous 30 days. The Mini Stations add an integrated data logger with non-volatile memory, external sensor options, and affordable wireless communications to a PC where Spec8 Pro software offers numerous graph and report options. There are four WatchDog® Mini Station models, each with up to four sensors for temperature, humidity, quantum light, rainfall, soil moisture, soil temperature, leaf wetness, or solar radiation

**Spectrum Technologies, Inc.**, Plainfield, Illinois USA;  
800-248-8873, [www.specmeters.com](http://www.specmeters.com)



## KD2 Pro Thermal Properties Analyzer



The KD2 Pro uses interchangeable sensors to measure thermal diffusivity, specific heat, thermal conductivity, and thermal resistivity of porous materials and liquids *in situ*. Sample temperature can range from  $-50^{\circ}$  to  $150^{\circ}\text{C}$  ( $-58^{\circ}$  to  $302^{\circ}\text{F}$ ). Analysis methods conform to IEEE and ASTM standards. Unlike any previous instrument, the KD2 Pro uses the full exponential integral solution to the heat flow equation for both single- and dual-needle sensors. Data are recorded during both heating and cooling phases of the measurement, and a mathematical non-linear least-squares-inverse procedure is implemented in firmware to fit the data to solutions of the differential equations and find the values of specific heat and thermal conductivity. Fitting heating and cooling data minimizes effects of sample temperature drift on the values obtained for the thermal properties.

**Decagon Devices Inc.**, Pullman, Washington USA;  
800-755-2751, [www.thermal.decagon.com](http://www.thermal.decagon.com)

## outstanding innovations

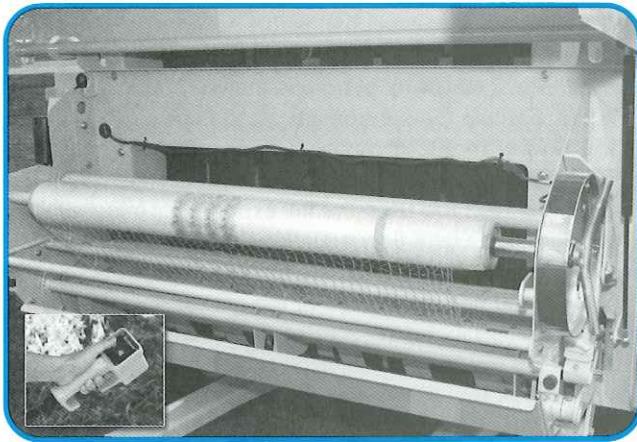
### ProDrive Ground Drive for John Deere Self-Propelled Harvester

The ProDrive system for John Deere self-propelled harvesters is a completely new, electronically controlled drive train featuring full Anti-Slip Regulation (ASR), integrated differential lock, seamless four-wheel drive engagement, and full-range 40-kph (25-mph) ground speed without manual gear shift. ProDrive incorporates variable displacement pump and front- and rear-axle motors operating in conjunction with a two-speed, auto-shift planetary gear set to provide maximum torque to the drive wheels in any field condition. Ground speed ranges of 0-20 kph (0-12 mph) in field mode and 0-40 kph (0-25 mph) in road mode allow effortless operation in the field or on the road without the need to manually change ground drive-gear ratios. The integrated front differential lock functions in field mode and at a steer angle less than  $9^{\circ}$ . When a speed differential of more than 10 percent occurs, the differential lock automatically engages, transferring more power to the ground.

**Deere & Company**, Moline, Illinois USA;  
309-765-8000, [www.JohnDeere.com](http://www.JohnDeere.com)



## Manual Netwrap Control



The manual electric controller operates a net-wrap system for wrapping round bales. This saves time and the costs of more complex monitor systems. Previous manual controllers could only operate the twine-tie function. This new ergonomic design is hand-held for easy operation, has a simple mounting or storage system for the tractor, and net-wrap indicator lights. To start the net-wrap, the operator pushes the extend button. The lights on the controller flash, indicating net-wrap is moving, and when enough net-wrap is applied to the bale, the operator pushes the retract button until the net-wrap is cut. The lights stop flashing indicating net-wrap has stopped. The benefits of utilizing net-wrap to wrap round bales have been well documented, and the new manual electric controller offers the end user a low-cost, simple way to apply net wrap. The same controller can also apply twine using the same extend-and-retract buttons to control the twine arm.

**Vermeer Mfg. Co.**, Pella, Iowa USA;  
800-370-3659, [www.vermeerag.com](http://www.vermeerag.com)



# 2007

## Steiger® AccuSteer™ II System

The Case IH Steiger® AccuSteer™ II system is a redesign of the tightest-turning-radius tractor in the industry by increasing integration of the system into the base tractor systems while improving performance. The tractor's front frame and axle pivot at the front of the cab provide for in-row corrections. At the end of the 10° pivot, the tractor automatically begins articulation at the rear joint. The base steering system on all Steiger tractors is now an Electro Hydraulic Power Steering (EHPS) system developed to add the additional advantages of steering by electric signal to vehicles with conventional hydraulic steering. The EHPS valve can receive input from the new Proportional Valve Electric pilot head, improving the link between the electronics and hydraulics. New control algorithms have improved the transition between front steering and articulation. New non-contact in-cylinder sensors sense steering position. A new non-contact steering wheel motion sensor provides 360° position output.

**CNH America LLC**, Burr Ridge, Illinois USA;  
262-636-6011, [www.cnh.com](http://www.cnh.com)



## Groundsmaster® 7200 Polar Trac™



The Groundsmaster® 7200 with Polar Trac™ winter conversion is a zero-radius-turn (ZRT) rotary mower in summer that converts to an efficient snow removal machine in winter. It is the only track-convertible ZRT mower on the market. The Polar Trac™ is designed to increase productivity by providing excellent maneuverability and a safe and comfortable operator environment. The spacious ROPS-certified cab offers large windows for clear visibility of attachments and surroundings. The twin-stick operation, easy two-pedal attachment controls, and deluxe suspension seat ensure operator comfort and reduced fatigue. The Polar Trac™ is ready for all winter conditions with a heated hard cab, innovative rubber track system, and quick-connect attachments.

**The Toro Company**, Bloomington, Minnesota USA;  
800-803-8676, [www.toro.com](http://www.toro.com)

## outstanding innovations

### VARIANT 360

The VARIANT 360 is a 1.2- x 1.5-m (4- x 5-ft) round baler. It is the first on the market to allow adjustable bale density, bale height, soft-core height, and soft-core density — all from the monitor. This gives the operator the capability to set the baler for varying crop conditions. Adjustable soft-core density and soft-core height let the operator build a bale with the required density in the center. The operator can fine tune the bale so it is not too hard or too soft in the core. The new hydraulic bale-density control system utilizes three hydraulic cylinders with a double tensioning arm, which assures maximum density under all conditions. Four new endless belts with 92 percent bale coverage aid in bale formation and crop retention in the bale chamber.

**CLAAS of America Inc.**, Omaha, Nebraska USA;  
402-861-1000, [www.claasofamerica.com](http://www.claasofamerica.com)



## New Holland Flexicoil SD550 Air Hoe Drill



The New Holland Flexicoil SD550 Air Hoe Drill alters the conventional folding methodology of large air seeding machines. Working widths of 18 or 21 m (60 or 70 ft) — with the capability for larger widths — can be folded into the same 17-ft 8-in. wide x 13-ft 6-in. high envelope with six sets of large flotation tires carrying the machine's weight at all times. Two-piece independent wing frames provide flexibility for field-contour following and dissipate frame stress on the unit promoting durability. Packing pressure is adjustable across the entire width where the depth has been set at a single location near the front of the machine for exact, repeatable seed depth. Tow-behind air carts utilize a steering hitch which allows the air cart to follow the tractor's path in transport and to compensate for side-hill skewing during field operation.

**New Holland North America**, New Holland, Pennsylvania USA;  
888-290-7377, [www.newholland.com](http://www.newholland.com)



# 2007

## AgGPS® EZ-Boom™ 2010 Automated Application Control Systems

AgGPS® EZ-Boom™ 2010 provides both application flow control and automatic boom section control that integrates with the Trimble AgGPS® EZ-Guide Plus™ and/or Field Manager™ display. The combination of the AgGPS® EZ-Boom™ 2010 and EZ-Guide Plus™/Field Manager™ display allows the user to consolidate guidance, flow control, and precision ag functions into one integrated package controlling up to 10 boom sections automatically with GPS guidance. Linked to the Trimble EZ-Guide® Plus or Autopilot™, this innovative system computes speed and coverage from GPS, automatically controlling flow while turning boom sections on and off to reduce the over application of costly and harmful chemicals. The Trimble EZ-Boom™ 2010 system also provides the flexibility to add boom section control to an existing rate controller that may already be in use. This approach allows the option of adding the functionality to an existing investment or the flexibility of reducing in-cab equipment in an integrated solution.

**Trimble Navigation Ltd.**, Westminster, Colorado USA;  
800-865-7438, [www.trimble.com](http://www.trimble.com)





## Mahindra Shaan



The Mahindra Shaan is a versatile tractor used not only for agricultural and industrial purposes but for rural transportation as well. The tractor's distinguishing features are its built-in trolley, capable of carrying a payload of up to 750 kg (1,653 lb), a suspension system for enhanced driving comfort, higher road speed up to 40 kph (25 mph), a soft-top canopy, and windshield with wiper. The tractor has fatigue-free ergonomic features with ease of entry and exit, side gear shifting, better engineered front and rear visibility and access controls.

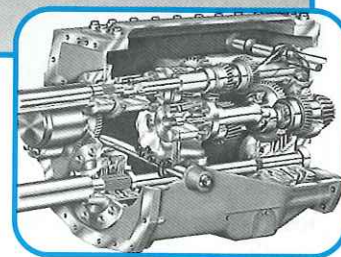
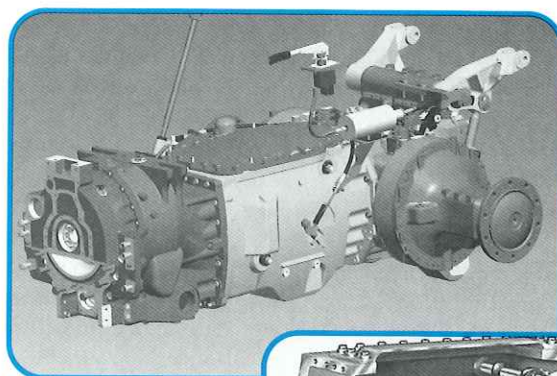
**M/S. Mahindra & Mahindra Ltd., Farm Equipment Sector,**  
Mumbai, Maharashtra, India;  
91-932-357-8582, [www.mahindraworld.com](http://www.mahindraworld.com)

## outstanding innovations

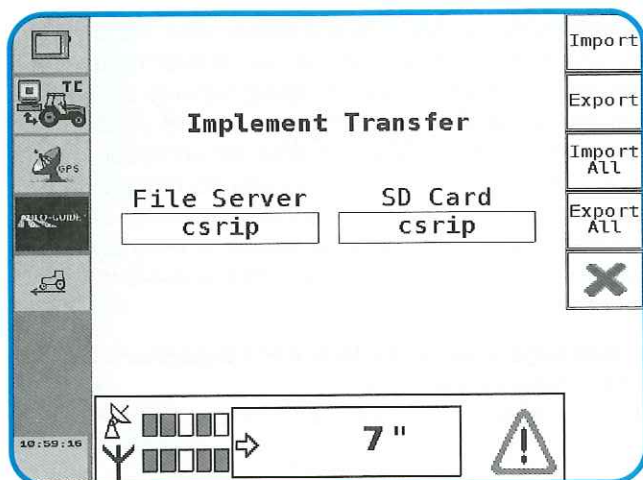
### Dyna-VT Continuously Variable Transmission

Dyna-VT from Massey Ferguson boasts smooth, infinitely variable speed control that offers versatility and precision through innovative technology, sophisticated features, and easy-to-use, straightforward controls. Available in Massey Ferguson 7400 and 8400 series tractors, from 95 to 240 PTO horsepower, this transmission offers two infinitely variable speed ranges for field or transport applications, with speeds as slow as 18 m/h (60 ft/h) and as fast as 50 kph (31 mph), all with optional Quad-Link front suspension. Operators can take a dynamic advantage in the field with Dyna-VT, which allows selection of optimum operating speed regardless of engine rpm, as well as two pre-set operating speed controls in each speed range. Dyna-VT provides operators of all kinds with a tractor that will do more in a day, increasing productivity and efficiency, and strengthen bottom lines day after day.

**Massey Ferguson, Duluth, Georgia USA;**  
800-767-3227, [www.masseyferguson.com](http://www.masseyferguson.com)



## ISOBUS FileServer Software



AGCO Corporation's ISOBUS FileServer is an ISO-11783 conformant file server available on Implement Controller Area Network (CAN) Bus to provide data storage and retrieval service for all implement Electronic Control Units (ECUs) on the bus. By providing a central, common storage for all the implement ECUs on the CAN bus, the File Server facilitates operator convenience, reduces cost of implement ECUs, and eases integration of third-party products. The FileServer has two volumes: one internal, non-movable volume for permanent data storage and an external movable volume (SD card) for data transfer between machine-and-machine or machine-and-farm computers. AGCO's ISOBUS FileServer software was released worldwide on Dec. 1, 2006, and pre-installed in both GTA Console I and Console II terminals, which are optional components available in Massey-Ferguson, Valtra, Challenger, Gleaner, Hesston, White, Rogator, Terragator, and Spra-Coupe brands of products, including tractors, combines, balers, planters, and sprayers.

**AGCO Corporation**, Duluth, Georgia USA;  
620-327-5517, [www.agcocorp.com](http://www.agcocorp.com)



# 2007

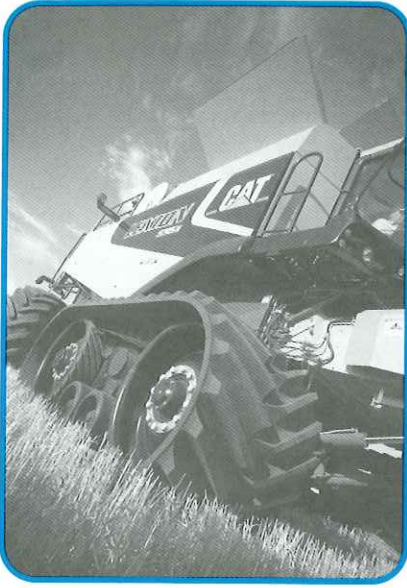
## TH1 High Clearance Tracker

GK took an engineering approach to produce a solution when end users or customers redefine criteria and create an offshoot machine. Slight variances in machines cause difficulties in engineering, service, parts, and repairs. The Tracked High Clearance Tracker's prototype version – TH1 – aimed for low ground pressure, extremely high clearance, great visibility, narrow row profile, and a low center of gravity. With these operational specifications, physical size, and structural layout, the TH1 became the machine for several crop varieties with immediate applications for cane berry, nursery, vineyard, and Christmas tree fields. The TH1 can be the power behind an assortment of implements and configured a multitude of ways. Its primary use is focused toward spraying applications, which require low ground pressure. The first prototype is designed as a beet chopper and separators and suggests other forthcoming opportunities. GK has integrated several current machines' capabilities into this prototype and expects more innovative results – a testimony to farmers and engineers together creating solutions.

**GK Machine, Inc.**, Donald, Oregon USA;  
503-678-5525, [www.gkmachine.com](http://www.gkmachine.com)



## MOBIL-TRAC SYSTEM



The LEXION MOBIL-TRAC SYSTEM (MTS) provides leading flotation (0.724 bar/10.5 psi), more flotation, the capability of road speeds up to 29 kmh (18 mph), and a 14 percent increase over the previous mobil-trac system with the ride comfort of a wheeled combine. Added flotation means reduced compaction and traction when needed. Greater operator comfort is achieved through a new suspension system incorporated into the mobil-trac system design. This unique ride dampening system utilizes high tensile polymer blocks to dampen the track oscillation during ground operation. This system is further enhanced when operated in conjunction with the LEXION's header ride control system. LEXION combines are the only combines designed specifically for tracks, resulting in high performance and longer life in tough conditions.

**CLAAS Omaha Inc.**, Omaha, Nebraska USA;  
402-861-1000, [www.lexioncombines.com](http://www.lexioncombines.com)

## outstanding innovations

### MicroGuide Lightbar

The Farm Works MicroGuide Lightbar is the first low-cost guidance product on the market that allows use of Bluetooth (wireless) technology, thereby reducing "cab clutter" and user error. MicroGuide works in conjunction with Farm Works' Guide Mate software and virtually any hardware device with Bluetooth capabilities such as an iPAQ Pocket PC. The advantage of MicroGuide is having access to a Pocket PC, which previously had to be mounted on the windshield for guidance. MicroGuide focuses on guidance, allowing use of a Pocket PC to concentrate on coverage maps, marking flags, crop records, or variable rate. As the guidance lights on the iPAQ are activated when driving off the swath, MicroGuide simultaneously shows the same number of lights to help fix the driving error.

**Farm Works Software**, Hamilton, Indiana USA;  
800-225-2848, [www.farmworks.com](http://www.farmworks.com)



## Envizio Plus



The Envizio Plus is a compact guidance system which melds guidance technology with boom management functions in a single enclosure. This system utilizes "last pass guidance" which allows an operator to drive according to the "last pass" that was made with the machine. The major modification to the Envizio adds capabilities that enable the user to data log as applied or coverage maps on the fly, as well as performing boom management functions all housed in one simple enclosure.

**Raven Industries**, Sioux Falls, South Dakota USA;  
800-243-5435, [www.ravenprecision.com](http://www.ravenprecision.com)

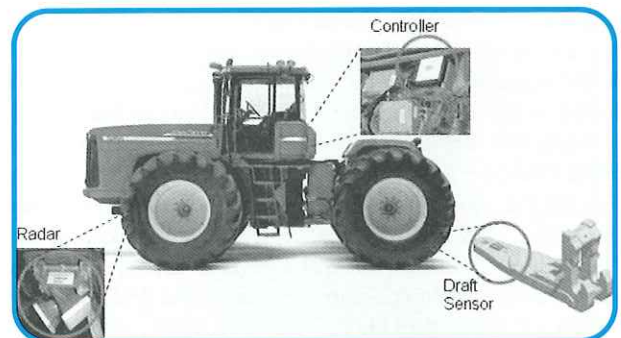


# 2007

## AutoLoad™

The John Deere AutoLoad™ system fully automates the digging operation of pull-behind John Deere scrapers. AutoLoad™ increases the productivity of an unskilled operator to that of a skilled operator after minimal training. Scraper depth-of-cut is controlled through draft sensing and position-control means to keep the tractor working at its full potential. Cab controls allow the operator to adjust aggressiveness of the dig to accommodate for changes in ground conditions or other site-specific needs. The scraper also has two operator-definable scraper positions that can be "traveled to" by a simple detent of the control lever. These positions are often set as transport and dump heights. To help maintain forward motion, AutoLoad™ reduces wheel slip in low traction applications to maintain productivity. To reduce wear of engine components, AutoLoad™ responds to excessive loading minimizing the risk of engine stalls.

**John Deere Product Engineering Center**  
Waterloo, Iowa USA; 319-292-7516, [www.deere.com](http://www.deere.com)



## 6156 Pea Combine Harvester



The 6156 is OXBO's next generation, large-pea combine harvester with an all new CAN-based control system and cab and improved operator controls and hydraulics. The 6156 brings increased threshing capacity with four-motor threshing drum drive and longer threshing drum life for reduced operating costs. The hydraulic system improvements provide improved steering and equal cylinder function performance at any engine speed while lowering total hydraulic system oil temperature for longer component life. Improved monitoring of speeds and functions reduces the chance for component failures. The optional four-camera monitoring system increases operator monitoring of harvester functions and conditions around the harvester. A new pod-separator-belt design increases life and reduces overall cost of operation. The new cab gives the operator more room and better comfort during the 24-hour-a-day harvest, and the CAN-control system gives the operator better control.

**OXBO International Corporation**, Byron, New York USA;  
585-548-2665, [www.oxbocorp.com](http://www.oxbocorp.com)

## outstanding innovations

### 3310 Paralink Hoe Drill

The 3310 Paralink Hoe Drill (PHD) is a one-pass seeding implement utilizing opener assemblies that move independently of each other providing precision seed placement and consistent packing across the entire width of the unit. The unique feature of the PHD opener assembly is the parallel arm arrangement that maintains constant opener angle relative to the soil as the opener contours over variable terrain. This allows for many different styles of soil-engaging tips to be used depending on soil conditions where the implement is being operated – without any adverse effects on performance. A modified version of the Bourgault Mid Row Bander (MRB) fertilizer colter is offered on the 3310 PHD to ensure safe and effective placement of nitrogen fertilizer. Each PHD opener assembly and MRB assembly uses a hydraulic cylinder for actuation and engagement. The 3310 PHD is available in operating widths of 12-15 m (40-55 ft).

**Bourgault Industries Ltd.**

St. Brieux, Saskatchewan Canada;  
306-275-2300, [www.bourgault.com](http://www.bourgault.com)



## Challenger MT500BRM Roadside Mowing System



The Challenger MT500BRM Mowing System is an integral package that combines two of Challenger's most popular tractor models with a specially designed mid-mounted roadside mowing and brush management system. The two-piece boom is fitted with the choice of a PowerAxe flail head or a rotary mowing head to manage roadside mowing or brush cutting without subjecting the tractor and operator to unsafe conditions or steep roadside slopes while improving job visibility. The power head is hydraulically driven via a separate on-board hydraulic system while a single electronic five-function joystick permits precise control of the boom and mower/flail head from the operator's seat. For added safety and visibility in severe conditions, MT500BRM models can be equipped with a Viseo municipal cab that utilizes a one-piece, impact-resistant Plexiglas panel in place of the "B" post, window, and side door on the right side of the cab.

**AGCO Corporation**, Duluth, Georgia USA;  
770-813-9200, [www.agcocorp.com](http://www.agcocorp.com)

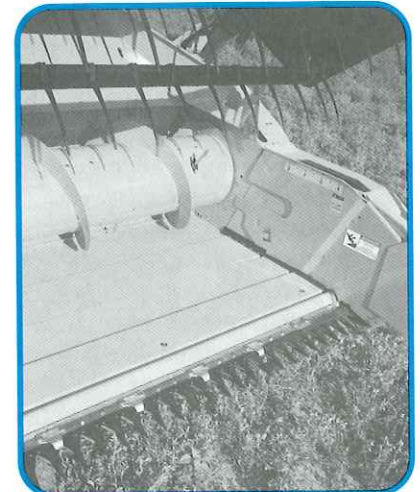


# 2007

## V530 VARIO Header

The LEXION V530 VARIO header is designed for direct-cut canola, wheat, barley, rye, and other small grain crops. In small grains, the hydraulically adjustable table can be extended forward 20 cm (8 in.) or moved back 10 cm (4 in.) on-the-go from its center position, improving the header crop flow as the height of the crop warrants. For direct-cut canola harvest, optional hydraulically driven vertical knives driven from the header cut through the standing crop. Table sections can be inserted by hand, allowing another 30 cm (12 in.) to catch additional canola.

**CLAAS Omaha Inc.**, Omaha, Nebraska USA;  
402-861-1000, [www.lexioncombines.com](http://www.lexioncombines.com)



## AFS Cotton Yield Monitor



The Case IH AFS Cotton Yield Monitor is a unique Controller Area Network (CAN)-based optical sensor that provides precise, real-time cotton flow information on a continuous basis while harvesting. This information can provide yield data — accurate to within 3 percent of gin weights — that lets the operator create yield maps to aid future productivity. On-the-go, the data can be used to make in-field operational decisions — when and how often to cycle the basket compactor and to aid in-field logistics — and when to unload the cotton basket or module based on accurate, real-time data. As a secondary benefit, the sensor is able to provide real-time information about material blockage in the cotton picker's chute, thus alerting the operator of any functional problems. This eliminates waste and improves profitability.

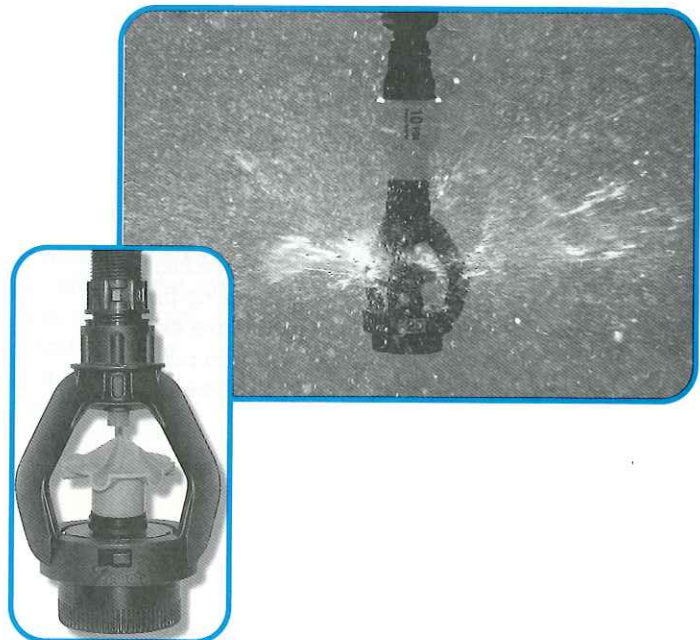
**Case IH**, Racine, Wisconsin USA;  
262-636-6011, [www.CaseIH.com](http://www.CaseIH.com)

## outstanding innovations

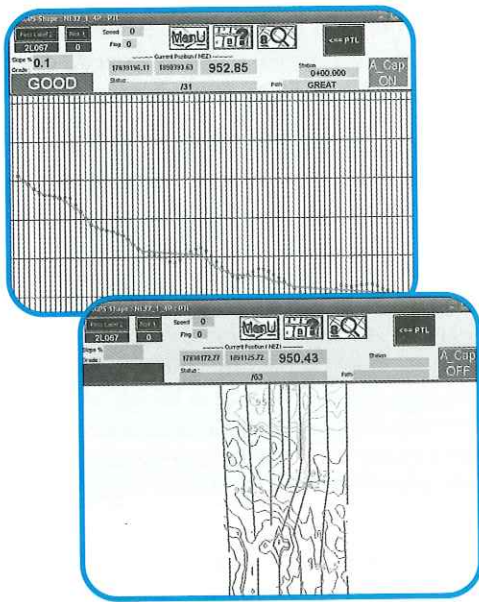
### Xi-Wob

The Senninger Xi-Wob® provides ultra-low application intensity by delivering consistently sized droplets over a large area in a uniform pattern. The Xi-Wob is specifically designed for use on rigid polyethylene or steel drops using a patented counter-balance technology, which eliminates the need for flexible hose on the drop. This same design produces an excellent distance of throw: up to 14 m (46 ft) in diameter. There are two different groove geometries based on the droplet size needed. The 610 model (6-groove blue deflector) delivers a slightly larger droplet size than the 910 model (9-groove grey deflector). Because the Xi-Wob effectively performs at pressures as low as 0.69 to 1.04 bar (10 to 15 psi), it saves energy costs.

**Senninger Irrigation Inc.**  
Clermont, Florida USA;  
407-877-5655, [www.senninger.com](http://www.senninger.com)



## AGPS-Shape Pro™



AGPS-Shape Pro™ is a Windows-based agricultural surface-drainage, land-forming design and control program. It can use any brand of RTK GPS equipment for data input and control. AGPS-Shape Pro™ uses RTK GPS topography data and localized field-balance profiles utilizing Vertical Curve Technology™ to create optimal field-drainage, land-forming solutions that move a minimal amount of earth. Vertical Curve Technology™ utilizes natural grade breaks, the curvature of the Earth, and user-defined parameters to create drainage profile balance plans. A profile is a side view of a surface path. Each profile balance plan is created using numerous grade breaks; the more grade breaks in a design, the less soil is moved, leading to savings in time, fuel, wear-and-tear on equipment, and reduced soil compaction. Cut/fill balances are calculated for each profile balance plan, and the plans are seamlessly joined together to create the final land-forming design plan for the field. The machine control portion of the AGPS-Shape Pro™ can then automatically control earth-moving equipment to achieve the final design. Users have reported moving 50 percent less soil with AGPS-Shape Pro™.

**Advanced Geo Positioning Solutions, Inc.**, Freemont, Ohio USA;  
888-301-2477, [www.agpsinc.com](http://www.agpsinc.com)

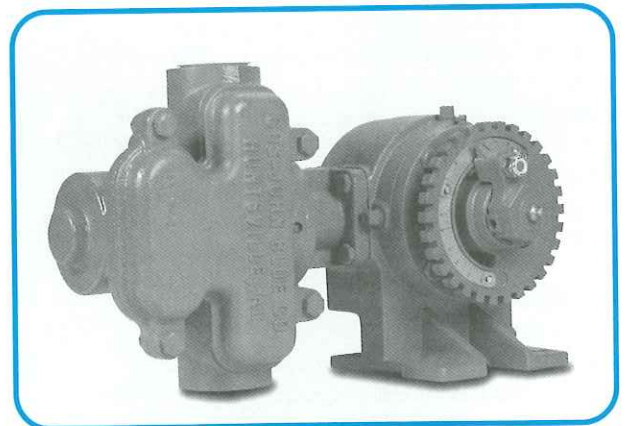


# 2007

## Next Generation Pump

The Next Generation Pump (NGP) line for liquid fertilizer application is completely redesigned to meet all of the liquid fertilizer markets' needs for today as well as future precision ag needs. The NGP introduces new innovations in service ability with its single-valve plate design, reliability with secondary dynamic seals, improved check valves with its elastomeric seal, modular aspect with ability to add a clutch, material wet-end upgrades to stainless with total interchangeability, and future precision ag modules. This is accomplished while maintaining proven accuracy, dependability, and performance of the existing double-acting positive displacement LM piston pump technology, which CDS-John Blue Co. has offered for decades.

**CDS-John Blue Co.**, Huntsville, Alabama USA;  
800-253-2583, [www.cds-johnblue.com](http://www.cds-johnblue.com)





## XERION 3300 Series



The CLAAS XERION is a 357-hp multi-purpose system vehicle designed for a variety of applications. In less than 30 seconds, the entire workspace of the cab can be rotated 180° from the middle to the rear, without the driver needing to leave the seat. Contractors, large agricultural operations, and municipalities that focus on efficiency and maximum productivity can use the XERION as a large tractor, system hauler, or system carrier vehicle. Total weight of the machine is supported by the full frame and is evenly distributed over the four wheels. This even distribution allows heavy implements on the front or rear linkage with available heavy ballasting at the front or back. Full-time four-wheel drive and numerous steering programs provide an extremely small turning circle (12 m/40 ft) and the highest possible stability.

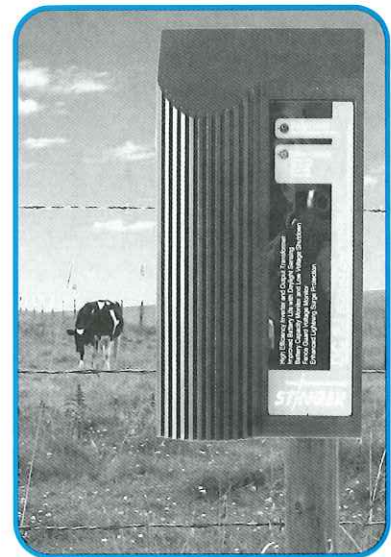
**CLAAS of America Inc.**, Omaha, Nebraska USA;  
402-861-1000, [www.claasofamerica.com](http://www.claasofamerica.com)

# outstanding innovations

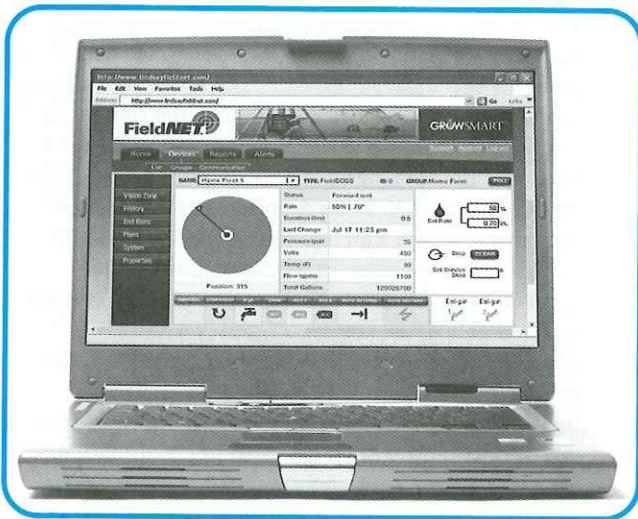
## Stinger DC2J BCM+DLS Electronic Fence Energizer

The Stinger DC2J BCM+DLS Electric Fence Energizer has a new design feature to provide indication of remaining battery capacity and provide improved methods of reducing energy consumption and extend battery life. The circuit has a daylight sensor to detect the dark of night and calculate a 6-hour window for operating at a reduced pulse rate the next night when livestock are not actively grazing, which results in a battery life improvement of 12.5 percent. The circuit has temperature and battery voltage sensors to calculate the remaining battery life and displays the value with a series of blinks by an indicator. When the remaining battery capacity is less than 25 percent, the pulse rate is reduced to half to increase battery life by another 20 percent. If the temperature is below freezing, the available battery capacity is reduced, and the energizer will shut down before the battery is damaged.

**Agritronics**, Edmonton, Alberta Canada;  
780-413-4286, [www.stinger-products.com](http://www.stinger-products.com)



## FieldNET



FieldNET is the center pivot industry's first completely Web-based management system with full control. A pivot's FieldNET Remote Terminal Unit (RTU) transmits via spread spectrum radio to a Bridge that is linked to the Internet. A user-friendly Web portal lets the grower configure irrigation requirements, make adjustments, and provides water and chemical usage reports. Text message alerts keep the grower updated on the status of his pivots. The product is supported with a customer care service. The Web portal, text messaging, and an interactive voice response phone connection means a grower can monitor and control any pivot at any time from anywhere.

**Lindsay Corporation**, Omaha, Nebraska USA;  
800-829-5300, [www.lindsayfieldnet.com](http://www.lindsayfieldnet.com).



# 2007

## FLEXIMASS

FLEXIMASS is a ballasting system for three-point linkage-equipped agricultural tractors. This quick and easy system for adapting the ballast level of a tractor to the task at hand has the potential for significant fuel and labor savings. Agricultural tractors use tires or tracks to transfer power to the surface traveled on. The amount of weight needed on the tire or track to transfer power is dependent on soil or pavement type, moisture content, soil firmness, etc., but in general, adding weight increases the power-transfer capability. Adding solid weights is a common solution and preferred over liquid in tires — “suitcase weights” on the front and bolt-on cast-iron rings for the rear wheels. Both systems are arduous and time consuming. FLEXIMASS provides a solution for adding up to 3,000 kg (6,614 lb) of ballast by using a front and/or rear three-point linkage.

**Laforge Systems, Inc.**, Concord, California USA;  
800-422-5636, [www.fronthich.com](http://www.fronthich.com)



## FD70 FlexDraper®



The MacDon FD70 FlexDraper®, available in 9-, 11-, and 12-m (30-, 35-, and 40-ft) sizes, can increase a combine's productivity by up to 30 percent. The new balance linkage for the three-section frame design now has lower friction, allowing the header to better follow tough ground undulations for improved performance over previous models. The three-section frame and two-section patented PR15 reel maintains a consistent reel-to-cutter-bar relationship for optimum feeding in "rigid" or "flex" configurations. Smooth, gentle, consistent "heads first" crop flows into the combine. The crop is cut and swept with minimal transition to a live moving surface, then conveyed "heads first" into the combine feeder with no hesitation, eliminating crop bunching and shatter loss. When operating in level terrain or cutting off the ground, the header can be locked to a rigid profile in seconds without the use of tools or sacrificing any feeding performance. The FD70 FlexDraper® is available for most Class 6 to 9 current-model combines.

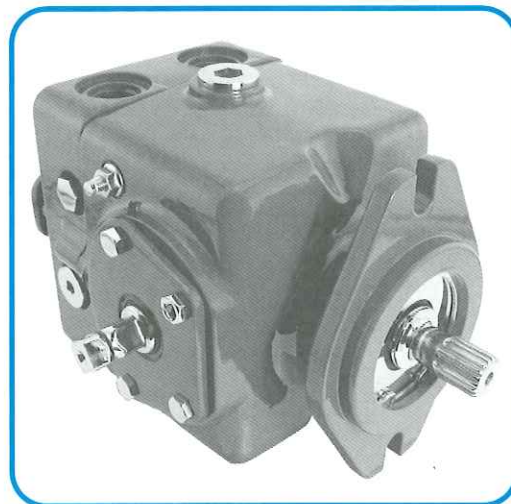
**MacDon Industries Ltd.**, Winnipeg, Manitoba  
Canada; 204-885-5590, [www.macdon.com](http://www.macdon.com)

# outstanding innovations

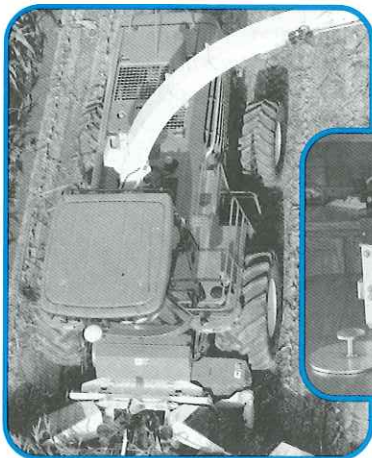
## LPV Direct Displacement Variable Pump

Sauer-Danfoss offers a new direct displacement control (DDC) pump that will reduce installation time, increase overall machine life, add extra flexibility to the vehicle design process, and help lower noise levels. A key feature is the pump's built-in neutral return mechanism (NRM). The NRM is placed inside the pump requiring a minimized installation effort, relative to a solution with external linkages and springs, saving the OEM design time, space, and assembly time. Because the return mechanism is located inside the pump, protected and always lubricated, end users will experience more consistent machine operation and longer service intervals. Being inside the pump housing, the mechanism is protected from environmental issues, such as water and debris, that have traditionally plagued external neutral mechanisms. The pump is the industry's only DDC solution offering three displacements in one housing (25, 30, and 35 cc/rev).

**Sauer-Danfoss Inc.**, Ames, Iowa USA;  
315-329-6000, [www.sauer-danfoss.com](http://www.sauer-danfoss.com)



## HarvestLab™ with HarvestMonitor for John Deere Self-Propelled Forage



The HarvestLab™ with HarvestMonitor system for use on John Deere Self-Propelled Forage Harvesters provides an industry-first, real-time display of silage moisture, throughput, and productivity with unparalleled accuracy while incorporating yield mapping and other management features in an easy-to-use interface. HarvestLab incorporates industry-standard near-infrared reflectance (NIR) technology in the harvest system to enable fast, accurate, and on-the-go feedback regarding silage component makeup, specifically moisture content. HarvestLab™ is part of the HarvestMonitor™ system, which calculates throughput and productivity of the SPFH. A linear potentiometer mounted between the feedrolls measures the crop mat while the feedroll transmission provides the feedroll speed for calculation of throughput. The same HarvestLab™ sensor can be used in a stationary application.

**John Deere Ag Management Solutions**, Urbandale, Iowa USA;  
888-476-7827, [www.JohnDeere.com](http://www.JohnDeere.com)



# 2007

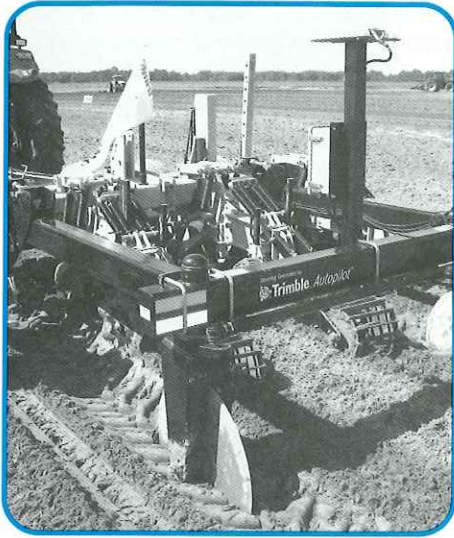
## VeriFlow Regulator

VeriFlow (VF) Regulator is designed for liquid fertilizer applications of varying rates. The VF regulator can be connected to cultivator shanks for subsurface applications of liquid fertilizer and soil fumigants or used for above-ground streaming applications. It offers a wide range of flow rate and is capable of controlling flow rate on-the-go. The VF regulator comprises flexible orifices where metering areas are automatically controlled by a metering assembly in response to changes in liquid pressure. Flow rate of the VF regulator is variable from 0.56 to 5.6 Lpm or 0.95 to 9.5 Lpm (0.15 to 1.5 gpm or 0.25 to 2.5 gpm) as pressure varies from 15 to 75 psi. The VF regulator includes flexible and large orifices, allowing significant reduction in orifice plugging. It is adaptable to conventional spraying systems and compatible to GPS/GIS.

**SprayTarget**, Rosemount, Minnesota USA;  
651-485-2410, [www.spraytarget.com](http://www.spraytarget.com)



# AgGPS® TrueTracker™ Implement Steering System



Using the Trimble® AgGPS® TrueTracker™ implement steering system, it is easy to keep implements on the same repeatable path even on extremely sloped fields and variable soils. The TrueTracker system includes a GPS receiver and T3™ terrain compensation technology mounted on the implement. The AgGPS FieldManager™ display in the tractor communicates the path information to the TrueTracker system, instantly adjusting implements such as tillage tools, strip tillers, drills and planters, cultivators, sprayers, and harvesters to follow directly in the path of the tractor fitted with AgGPS Autopilot™. The new AgGPS TrueTracker design includes components of the Tracker IV implement guidance system from Orthman Manufacturing Inc. of Lexington, Neb. With  $\pm 2.5$  cm ( $\pm 1$  in.) repeatable accuracy, the TrueTracker system improves seedbed and nutrient placement helping to improve crop stands and yields.

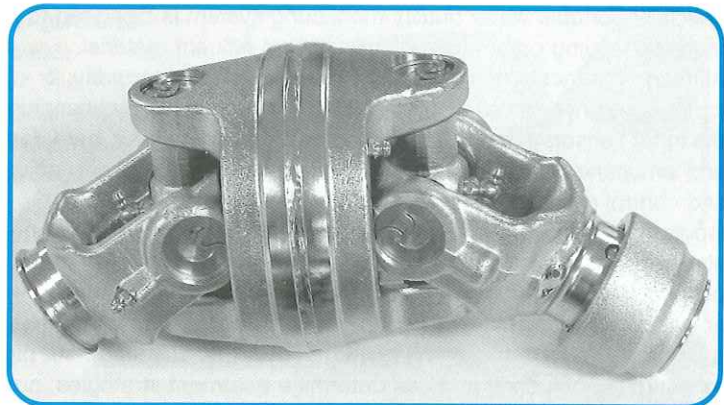
**Trimble Navigation Ltd.**, Westminster, Colorado USA;  
800-865-7438, [www.trimble.com](http://www.trimble.com)

## outstanding innovations

### Extended Lube 80° CV Joints

Weasler Engineering Extended Lube 80° constant velocity universal joints provide smooth power transmission with longer lubrication intervals. These extended lube constant velocity universal joint increases the typical 8-hour lubrication interval to a minimum of 50 hours in severe applications and a maximum of 250 hours in less demanding applications. The extended lube interval is achieved by using extended lube cross and bearing kits, extended lube ball retainers, and extended lube center housings in place of the standard components. The patent-pending extended lube 80° constant velocity universal joints are available in ASABE Categories 3 to 6 with ratings from 15 to 232 horsepower.

**Weasler Engineering Inc.**  
West Bend, Wisconsin USA;  
262-338-2161, [www.weasler.com](http://www.weasler.com)



## SuperSuite™ Compact Tractor Cab



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New Holland, Pennsylvania USA;  
888-290-7377, [www.newholland.com/na](http://www.newholland.com/na)

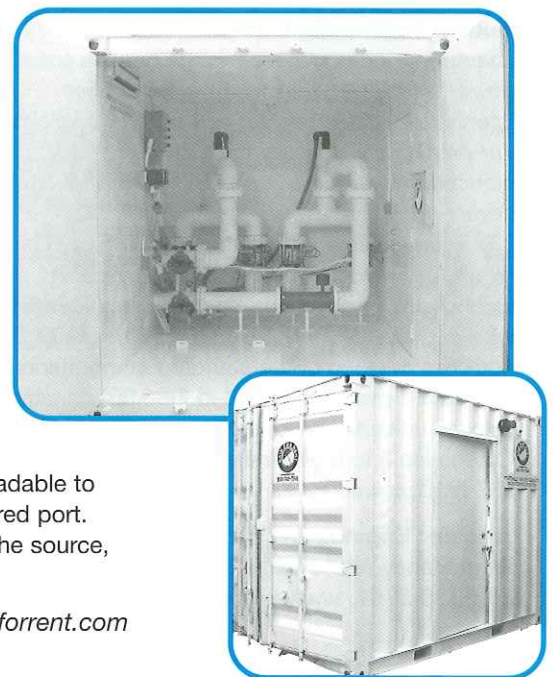


# 2007

## Portable Water Quality Monitoring System

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**Rain for Rent**, Bakersfield, California USA; 800-742-7246, [www.rainforrent.com](http://www.rainforrent.com)





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# Multi-Tasking

## Slow Down to Speed Up

Ron Knaus

**T**oday's employees are under more stress than ever before. A recent Harris Interactive poll found that one-third of workers ages 25 to 39 feel burned out by their jobs. Additionally, doctors' offices are seeing more stress-related illnesses than ever before, including anxiety, depression, insomnia, adult ADHD, backache, and migraines. In fact, primary care physicians report that between 70 and 90 percent of their patients are seen because of underlying emotional stress.

So, what is causing all of this turmoil? Over the past 10 years businesses have become lean, mean machines by reducing personnel and increasing the workload on those "lucky" enough to remain on the job. An increased workload forces the worker into multi-tasking. While multi-tasking may be effective for a short period of time, over the long term, multi-tasking causes excessive stress. In the business world, multi-tasking is a must-have skill for any employee, yet results are showing that most workers feel they are being asked to do too many tasks.

### The keys to multi-tasking success

Why the disconnect between the workday realities and the workers' perception? Because people have never learned *exactly* how to multi-task. That's right, multi-tasking is a learned skill. By learning how to multi-task efficiently, you can dramatically reduce your workday stress, increase your productivity, and enjoy your work once again.



*While multi-tasking may be effective for a short period of time, over the long term multi-tasking causes excessive stress.*

Contrary to popular belief, multi-tasking is not about "piling on the work" to the point of exhaustion. It's about training the brain to channel energy in an efficient and effective manner so you can accomplish more in less time. And believe it or not, one of the hallmarks of learning to multi-task is to actually slow down to accomplish more.



*... one of the hallmarks of learning to multi-task is to actually slow down to accomplish more.*

The following are some techniques that will help you mentally slow down so you can finally learn how to multi-task and master this essential business skill.

### Practice how to multi-task

Whether you're learning how to play the piano, use a computer program, or multi-task, practice is essential to mastering the skill. Why? Because practice makes something seem routine, and when something is routine, it's no longer stressful.

Look at all the things you do in a day. Pick a few routine tasks to start with. As you master doing multiple routine things, then move on to slightly more difficult tasks. Gradually work up to the number of tasks you normally do.

During this process, remember that learning takes time. Very often people jump into a new role or responsibility without gradually gearing up their workload. Then they wonder why they feel stressed and can't multi-task effectively. So if you want to do all the things you do each day in a more efficient manner with less stress, take a step back and teach your body and mind how to work up to the production level





*Shift multi-tasking to single tasking throughout the day to allow your mind to reboot.*

you desire. Such a gradual process will make multi-tasking easier than ever before.

### **Know when a task requires undivided attention**

Switching brain channels (focus) repeatedly actually reduces your memory recall. Think of your brain like a computer. If you are working within multiple programs and have numerous windows open on your screen so you can quickly jump from program to program, you may find that your computer has a higher tendency of locking up. That is, when you have 15 windows open at once on your computer, and you attempt to pull up your word processing document, it's not uncommon for your computer to run slow or to completely freeze up, often causing you to lose all the data since your last "save."

The same thing happens in your brain. When you're performing multiple tasks that require your undivided attention, your brain gets overloaded, as it can only process information from one channel at a time. Therefore, do not multi-task if the assignment requires your full attention. Once that particularly urgent or detailed task is complete, then you can go back to doing the other tasks you normally do. This step will save you lots of rework, as you're more prone to make mistakes when your brain is overloaded.

### **Use a tool to help you multi-task**

To refrain from taxing your brain, write down items you can refer to quickly. For example, if you have a list of items you need to refer to often (such as pricing or shipping information or keyboard shortcuts) put the list next to your phone or computer for quick recall. Not only will others think you are brilliant because of your amazing ability to rattle off information, but you won't have to waste brain energy on such mundane information. You can then use your brainpower for true multi-tasking purposes.

### **Allow your mind to re-boot**

Shift multi-tasking to single tasking throughout the day to allow your mind to re-boot. The human brain uses more

energy than any other part of the body. As such, it needs constant replenishment. Rest is one of the key components to increasing personal energy and productivity. So every two to three hours, stop multi-tasking and allow yourself to do just one thing for 15 to 20 minutes. At the end of this rest period, you'll feel refreshed, alert, and ready to tackle more tasks – and you'll do so with fewer mistakes than if you plowed through your tasks without this reboot period.

### **Take a brain break**

Most employers offer their full-time staff a lunch break and two 15-minute breaks throughout the day. Do you take yours? Most people do not, and as such, they're not giving their mind a true break from the stresses of the day. Use this break time to walk around the building, sit outside, or just close your eyes and meditate. Do whatever you like during these 15 minutes to clear your head and give your brain a rest. If you really can't afford a 15-minute break in your day, then turn off your mind as you walk to the water cooler or restroom. Give your mind some kind of total break from the workday tasks. To function at peak levels on a consistent basis, regular breaks are essential.



*Most employers offer full-time staff a lunch break and two 15-minute breaks... Do you take yours?*

### **Do more with less stress**

Multi-tasking is a part of our business world. If you truly want to succeed, then you need to learn how to multi-task so it doesn't overwhelm you and cause unnecessary stress. By simply slowing down and working up to the performance level you desire, you can multi-task effectively and increase productivity. Simply put, learning how to maintain your highest level of mental functioning is your key to multi-tasking success.

Ron Knaus is a physician, psychiatrist, and sports medicine physician who works within the corporate world and medical profession helping clients reach peak performance levels. He has received board certifications from the American Osteopathic Board of Psychiatry and Neurology and the American Osteopathic Academy of Sports Medicine. For more information contact Knaus at 727-215-8104 or [rknkaus@peakenergyinstitute.com](mailto:rknkaus@peakenergyinstitute.com).

## Headquarters Named ASABE Historic Landmark

The location of the Society was honored at a historic landmark dedication April 20 at ASABE's International Headquarters. The event is one of several that marks the 100th anniversary of the founding of ASABE. This historic landmark dedication is the 47th in a series that began in 1926.

Past ASABE presidents, the ASABE Board of Trustees, headquarters staff, other ASABE members, and local dignitaries attended the dedication. President Charles E. Sukup unveiled the Historic Landmark plaque on behalf of the organization's almost 10,000 members from more than 100 countries.

"ASABE has been in St. Joseph, Mich., since the mid-1920s," says Melissa Moore, executive vice president. "This landmark dedication pays tribute to the men and women who have done everything from improving how we harvested wheat in the 1900s to making discoveries in tissue engineering today that will make our lives better in the future."



Shown with the Historical Landmark plaque in front of ASABE headquarters are (l to r): ASABE Executive Vice President Melissa Moore, Michigan State Rep. John Proos, and ASABE President Charles E. Sukup.

"This landmark dedication pays tribute to the men and women who have done everything from improving how we harvested wheat in the 1900s to making discoveries in tissue engineering today that will make our lives better in the future."

ASABE was founded in 1907 to provide an emerging group of agricultural engineers a forum to exchange technical information. The charter meeting was held at the University of Wisconsin, Madison, with 18 members, including three from Canada. J. Brownlee Davidson, a professor and head of the Agricultural Engineering Department at Iowa State University, became the first president. The founders called the association the American Society of Agricultural Engineers (ASAE).

Raymond Olney was named secretary of the organization in 1925 and established the administrative offices in St. Joseph, Mich. In 1969 the association built its current office building. In 2005, in recognition of the inherent but increasing role of biology in the profession, ASAE changed its name to the American Society of Agricultural and Biological Engineers.

"As we enter our second century we are still carrying out the organization's original charter," says Moore. "But over the century, that forum has expanded to provide technical leadership in all areas of biological, food, and agricultural engineering with a special emphasis on taking the lead in the use of renewable resources."

*See page 6 for another ASABE Historical Landmark Dedication held in May.*

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## Laser Beam Automatic Grade Control System Declared Landmark

The laser beam automatic grade control system was dedicated on May 3 as the 48th ASABE Historical Landmark. The dedication took place at The Ohio State University where the plaque will be displayed.

The first laser grade control was developed by agricultural engineers James Fouss and Norman Fausey of the USDA's Agricultural Research Service at The Ohio State University in the mid-1960s.

The system controlled the precise depth and grade of subsurface drains by regulating trenching and plow-type drainage machines. Photo cells mounted on the drainage machine automatically raised and lowered the digging device, keeping the cells centered on a laser beam set to the desired elevation and grade. The necessary signal processing circuit was designed and fabricated for ARS by Control Systems Co. of Urbana, Ohio, co-owned by Ted L. Teach.

Concurrently, Robert H. Studebaker, of Tipp City, Ohio, began to develop a laser controlled motor grader. Studebaker introduced a rotating prism to create a "plane" of laser light that

could control several machines on a field. In 1967, Studebaker and Teach formed the LaserPlane Corp. in Dayton, Ohio.

Laser control of a trenching machine was first demonstrated in September 1968 at The Ohio State Farm Science Review. Prior to laser control, grades were controlled by a skilled machinery operator using a sight bar with targets placed at 50- to 100-ft intervals. Today continuous improvements and innovations have led to vastly expanded applications of laser-beam control technology to agricultural, construction, industry, and military tasks worldwide.

The Historic Commemoration Committee of ASABE has selected and recognized historic developments in agricultural engineering in the United States for more than 80 years.

As of 2007, 48 of the most significant events in agricultural engineering have been commemorated.

For a complete listing of all the ASABE Historical Landmarks, visit [www.asabe.org/awards/historic2/index.html](http://www.asabe.org/awards/historic2/index.html).



Those who attended the dedication at the Ohio State University included (l to r): James Fouss, Ted Teach, Norman Fausey, David and Terry Studebaker (sons of Robert Studebaker), and Charles Sukup.

## Three Decades of Change

Authors Wayne A. Maley, Robert M. Peart, and Benjamin A. Jones Jr. met at ASABE headquarters in May to check printer proofs of their new book, *Three Decades of Change – ASAE to ASABE*.

The 174-page book continues to record the history of ASABE at the point where Robert Stewart's *7 Decades that Changed America* left off. This latest book covers the Society history from the start of the eighth decade in 1977 and continues though to the 100th anniversary in 2007.

Several years ago, the authors began the difficult task of sifting through numerous ASABE office records, published material, and solicited contributions from others.

"In reviewing the many documents, it soon became obvious that we would never be able to include stories about all the members who have contributed to the Society during the past three decades," says co-author Wayne Maley. "I have gained a much greater appreciation of how ASABE has progressed because of the dedication of many dedicated people."

To order a copy of the book, contact Sandee Martin at [martin@asabe.org](mailto:martin@asabe.org). Member price is \$17 and non-member price is \$22, plus \$4.95 for shipping and handling.



The authors of the latest book documenting ASABE's history for the past 30 years are shown here checking printer proofs. The authors are (l to r): Robert M. Peart, Benjamin A. Jones Jr., and Wayne A. Maley.

## Kansas State Does It Again at 1/4-Scale Tractor Competition

Kansas State University continued its winning tradition in the ASABE International 1/4-Scale Tractor Student Design Competition, taking home the first-place trophy in the 2007 event held in Peoria, Ill., May 31-June 3. This is the sixth time in the history of the competition that the Kansas State team has taken top honors.

Rounding out the top five places were, in order, Purdue University, Université Laval, the University of Kentucky, and the University of Illinois.

The second-place and fifth-place honors for Purdue and the University of Illinois represent the highest finishes ever achieved by each team. Like Kansas State, Université Laval and the University of Kentucky are consistently strong contenders in the 1/4-Scale contest, cracking the top five regularly.

In winning the competition, Kansas State received a plaque for Best Written Design Report, while runner-up Purdue took top honors for Performance in the tractor pull. Iowa State University scored highest among all competitors in the Team Presentation.

The 2007 1/4-Scale Tractor Competition marked the 10th anniversary of the event held at the Peoria Expo Gardens. Competing in this year's competition were 24 full and 10 junior teams of university students from across the



Kansas State University once again took home the first-place trophy in the ASABE International 1/4-Scale Tractor Student Design Competition held in Peoria, Ill.

United States and Canada. Jerome Robillard and Brian Huenink served as co-chairs of the contest.

Sponsors of the 10th Annual International 1/4-Scale Tractor Competition included AGCO, Bridgestone/Firestone, Briggs & Stratton, Case, Caterpillar, Deere & Company, Kubota, New Holland, and SolidWorks.

Additional support was provided by

Campbell Scientific, Inc.; Central City Scale; Claas Omaha; eServ; German Bliss Equipment; Kelly Sauder Rupiper Equipment, LLC; Kentucky Corn Growers Association; Miller Electric; and Read Brothers Equipment.

The complete list of 2007 awards can be found on the ASABE Web site at [www.asabe.org/students/tractor/asacom.html](http://www.asabe.org/students/tractor/asacom.html).

## Ten Universities Enter 2007 1/4-Scale Web Site Design Contest

The seventh annual ASABE 1/4-Scale Web Site Design Competition gave teams entered in the 2007 competition a creative way to showcase their talents on the Internet.

Ten universities from across the United States entered the contest and took advantage of the opportunity to promote their team, the competition, and ASABE. The University of Illinois took top honors with their innovative Web site design. Rounding out the top three winners were Iowa State University in second place with the University of Wisconsin-Madison taking third.

Participants were given a set of basic guidelines to follow, and the rest was up to them. As in years past, the competition was tough. The winning teams were awarded cash prizes and certificates.

This year's contest was judged by Mary Faure from The Ohio State University, Web Designer Steve Ralston, and Joe Walker from ASABE headquarters.

The winning entries may be viewed at these sites:

**University of Illinois**

<http://www.age.uiuc.edu/illinipullers/>

**Iowa State University**

<http://www.abe.iastate.edu/cyclonepowerpullers/>

**University of Wisconsin - Madison**

<http://bse.wisc.edu/badgerpulling>

To view all the competition entries visit [www.asabe.org/students/tractor/asacom.html](http://www.asabe.org/students/tractor/asacom.html).

YOUNG PROFESSIONALS COMMUNITY

## That was the Centennial — Now Look Toward the Bicentennial

With the ASABE Centennial celebration nearing to a close, what will come in the next 100 years? Young and preprofessional members are likely to be the change-makers noted at the Bicentennial. Building upon the great strides made by our predecessors, can you imagine where we will go from here?

We, as agricultural and biological engineers, are and will be largely responsible for helping to create a more sustainable world. The diversity of our Society gives us the advantage over many others. We have the tools to solve even the most challenging problems. Our diversity and tools will have a definite impact on the developments and discoveries of the next 100 years. A few areas that we have potential to greatly impact the world are:

- **Energy.** At the 2006 Annual International Meeting, we learned how ASABE engineers are already making advancements in finding new energy sources and better ways to use them. ASABE engineers will lead the development of new sources of renewable energy and energy-saving devices.
- **Environment.** As environmental regulations increase in every industry, engineers will be needed to develop new techniques and equipment to reduce our impact on the environment. From improving emissions of equipment to improving water quality,

ASABE engineers will be at the forefront of improving the environment.

- **Bio-Resources.** This is an exploding area for ASABE engineers to tap. From developing new foods with greater tolerance to disease and environmental conditions, to new products to reduce food contamination, engineers will undoubtedly help feed the world.

- **Economics of Food Production.** The inputs for food production are becoming increasingly more expensive. ASABE engineers have the ability to develop products and practices to allow the continued production of inexpensive food. Making food economical for all to have and produce will not only affect those in the United States, but worldwide.

None of these areas are independent from the other. Agricultural and biological engineers have the unique know-how, skills, and peer interaction to combine many elements of the profession to develop solutions to feed, clothe, and provide shelter and energy for the world. As agricultural and biological engineers, we have the potential to change the world as we know it for the positive. Just look at our past.

**Betsy Gerwig, YPC Representative**

## SECTION NEWS

### New Mexico Section

Thirty-one people attended the New Mexico Section meeting held April 20.

The keynote speakers, both from New Mexico State University, were Steven Castillo, dean of the College of Engineering, and Tim Nesbitt, assistant dean of the College of Agriculture and Home Economics and director, Business and Resource Planning. The two speakers discussed “what is going on, what is exciting, and what is on the horizon at the University.”

According to Paul Funk, Section secretary, the speakers did an excellent job informing section attendees of the current challenges and opportunities at the University.

Student research projects were presented during the technical session of the meeting. Attendees found the projects very interesting and professionally presented.

The meeting included tours of the Shelling Plant and Stahmann’s “Desert Grove” Pecan Processing Plant.

**Paul Funk, Section Secretary**



Pictured standing (l to r): Sami Al-Haddad, George Abernathy, Mark McKinley, Carlos Armijo, Marvis Gillum, Derek Whitelock, Wayne Maley, Kevin Baker, Dan Spare, Trevor Payne, Michael Fowler, Douglas Bough, Paul Funk, Eric Lopez, Yeliz Cevik, Plant Manager Gustavo Werge, Kate Adams, Randa Hatamleh, Andrea Solis, and Keeley Brown. Kneeling: Murali Siddaiah, Mike Lieberman, Ed Hughs, Aldo Pinon, and Zach Libbin.

SECTION NEWS

## Quad City Section

The Quad City Section recently presented its 2007 Engineer of the Year Award to Roy Harrington for his career accomplishments and lifelong devotion to the profession. In addition, Carol Plouffe was the recipient of the Outstanding Engineering Achievement Award for his instrumental role in introducing and developing new soil and crop modeling technology.

Chad Yagow, who was not able to attend the meeting, was the recipient of the Section's Young Engineer of the Year Award for his service to the ASABE Preprofessional and Young Professional Communities and the Quad City Section.

**Dave Smith, Section Chair-Elect**



Roy Harrington (l) and Carol Plouffe (r) were both recipients of awards recently given by the Quad City Section.

## Minnesota Section

Members of the Minnesota Section, along with biosystems engineering students from the University of Minnesota, toured the District Energy facility in downtown St. Paul on April 12.

This non-profit utility company heats and cools 60 percent of downtown St. Paul and generates enough electricity for 20,000 homes using waste wood from the Minneapolis/St. Paul



Members from the Minnesota Section toured the District Energy facility in St. Paul. (Photo courtesy of John Brach)

greater metropolitan area. Augmented with some coal fired and natural gas operations, this green energy company has served downtown St. Paul since 1983.

Sidewalks in the downtown area labeled "heated walk" are underlain with pipes that circulate 35°C (95°F) water to provide shovel-free winters. The Twin Cities metro area produces more than 600,000 tons of clean wood waste each year. That is double the amount needed to run the wood-fired combined heat and power plant.

**Sonia Jacobsen, Section Chair**

## Central Illinois Section

The spring meeting of the Central Illinois Section was held April 20 at the Department of Agricultural and Biological Engineering (ABE), University of Illinois.

The program began with a lunch presentation by Kaustubh Bhalerao, who spoke on building circuits in bacteria. He explained how engineers use biology to switch circuits "on and off" and provided potential applications of this new field of engineering.

The business meeting included an update on the various activities planned for the 100th year celebration of ASABE and recent highlights of the ABE Department. Following the business meeting, Tony Grift presented an overview of bioenergy work in Europe in the past decades. Xinlei Wang discussed geothermal heat pumps and energy saving.

**Loren Bode, Section Secretary/Treasurer**



Central Illinois Section Chair Sean Landers conducted the business meeting at the Section's spring meeting.

STANDARDS

## Highlighting Agricultural Equipment Companies Who Support ASABE Standards

ASABE has maintained relationships with two major machinery trade associations: the Farm Equipment Manufacturers Association (FEMA) and the Association of Equipment Manufacturers (AEM, formerly EMI). Companies from both trade associations have contributed monetarily to the ASABE Standards Program and have been longtime supporters by providing input and leadership for ASABE Standards.

FEMA member companies are typically those that do not produce a full line of agricultural equipment, but rather a shorter line – hence their oft-used moniker “Shortliners” (also the name of their Association newsletter). FEMA has had ASABE staff as guest speakers on a number of occasions and consistently publishes press releases of ASABE activities in their *Shortliner* newsletter. Many ASABE members are active within FEMA, and both organizations have contributed greatly to the success of each other.

AEM companies often produce a larger line of equipment, from tractors, harvesters, and implements – to those member companies who have their own credit and banking areas. AEM has worked with ASABE to serve the agricultural equipment industry for many decades and has cooperated on many standards development projects. AEM companies are collectively strong supporters of the ASABE Standards Program and were the driving force behind ASABE becoming the U.S. Technical Advisory Group (TAG) Administrator for ISO TC23 Tractors and Machinery for Agriculture and Forestry. Contributions from AEM member companies, both monetarily and by volunteering to work on standards, are greatly appreciated by the Society and especially by the ASABE Standards Program. Members from those companies have participated in and led committee activities and standard projects. They have also served in many leadership capacities, such as helping revise the ASABE Standardization Procedures and driving the Standards Program to expand activities.

Many FEMA and AEM companies have contributed greatly to the ASABE Standards Program. The Standards Department would like to highlight two such companies: Cequent Trailer Group and Alamo Group Agricultural Division.

FEMA member Cequent Trailer Group, headquartered in Mosinee, Wis., makes several products for the agricultural equipment industry but most notably jacks and trailer coupling equipment. Director of Heavy Duty Product Engineering, Frank Drake, has been the leader of ASABE’s PM-23/3/1 Implement Jacks Committee for several years, an advocate for the ASABE Standards Program, and instrumental in the leadership and development of the ASAE Standard S485 Implement Jacks. S485 is not only the standard for implement jacks in agriculture, but it is also the de facto standard for some industries beyond agriculture. The standard’s importance cannot be overstated.

Headquartered in Seguin, Texas, Alamo Group consists of several companies producing and distributing a diverse line of products. These products range from tillage, mowers, loaders, and many things in between, as well as parts and some industrial equipment (separate divisions). Alamo Group belongs to both AEM and FEMA.

Alamo Group’s Vice-President of Technical Affairs, John Fisher, is extremely active in many ASABE Standards activities and says, “We feel standards are essential for product safety, compatibility, and customer acceptance.”

ASABE thanks you — Alamo Group, Cequent Group, and many other FEMA and AEM companies. We look forward to serving your industry for many years to come. Your companies understand the value of a strong standards program and realize that supporting such a program is vital to your business.

If your company is interested in supporting the engineering standards program for the agricultural and biological profession, please contact Scott Cedarquist or Travis Tsunemori of the ASABE Standards Program, 269-429-0300.

For a list of current ASABE Standards Program supporters, please visit [www.asabe.org/standards/contributors.html](http://www.asabe.org/standards/contributors.html).

## ANSI Approves New Technical Advisory Group

The accreditation to ASABE of the U.S. Technical Advisory Group to ISO/TC 234, Fisheries and Aquaculture, was approved by ANSI’s Executive Council, effective June 1, 2007.

## Did You Know International Standards are Administered at ASABE?

ASABE is the administrator for the U.S. Technical Advisory Group (TAG) for ISO TC23 Tractors and Machinery for Agriculture and Forestry. In addition, the United States hosted the international meeting of the Tractors Subcommittee (SC4) of TC23 just prior to this year’s ASABE Annual International Meeting.

Standards for the international community are being worked on and led by people in the United States and internationally, many who are members of ASABE. Your Society is leading the way when it comes to international standards.

For more information about International Standards activities of ASABE and ISO, contact the Manager of International Standards, Ted Tees, 269-429-0300, [ted@asabe.org](mailto:ted@asabe.org).

MEETINGS AND CONFERENCES

## Symposium on Air Quality and Waste Management for Agriculture

The 2007 International Symposium on Air Quality and Waste Management for Agriculture is the result of combining two historic symposiums in an effort to facilitate an increased information exchange and networking opportunities.



The Symposium will be held Sept. 15-19 in Broomfield, Colo.,

just outside of Boulder, and will include the most recent information on technological and research advancements in both air quality and waste management.

Some of the air quality topics to be presented include dispersion modeling, atmospheric chemistry, abatement measures, and uncertainty analysis. Waste management topic areas will include land application, manure storage, anaerobic digestion, and housing systems.

To read more information about this one-of-a-kind conference, visit [www.asabe.org/meetings/airwaste2007/index.htm](http://www.asabe.org/meetings/airwaste2007/index.htm).

To register, visit [www.asabe.org/meetings/meetReg.html](http://www.asabe.org/meetings/meetReg.html). If you have questions, contact the ASABE Meetings department at 269-429-0300 or [mtgs@asabe.org](mailto:mtgs@asabe.org).

## Individual and Small Community Sewage Systems Symposium

The 11th Symposium on Individual and Small Community Sewage Systems will be Oct. 20-24, 2007, in Warwick, R.I.



Information will be shared on a variety of technical topics including the fate of contaminants, standards for on-site sewage treatment, wastewater reuse, constructed wetlands, and educational programs. Professionals

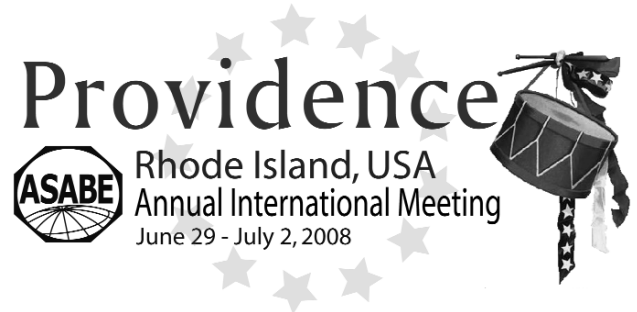
will share the latest research developments and discuss critical sewage system issues in order to continue advancing this industry.

To see the complete list of co-operating organizations, the preliminary program, and details on the conference format, visit [www.asabe.org/meeting/sewage2007/index.htm](http://www.asabe.org/meeting/sewage2007/index.htm).

To register, visit [www.asabe.org/meetings/meetReg.html](http://www.asabe.org/meetings/meetReg.html). If you have questions, contact the ASABE Meetings department at 269-429-0300 or [mtgs@asabe.org](mailto:mtgs@asabe.org).

## Mark Your Calendars Now for the 2008 Meeting

The 2008 ASABE Annual International Meeting will be held June 29-July 2, 2008, in Providence, R.I.



## 2009 AIM Location Selected

The Meetings Council recently selected the Grand Sierra Resort and Casino in Reno, Nev., to host the 2009 Annual International Meeting. This facility will accommodate all ASABE's hotel requirements and provide plenty of necessary space for meeting room needs.

The Grand Sierra Resort and Casino is a spectacular 145-acre mega resort in a 27-story tower. Nestled in the Sierra Nevada mountains, the resort is located less than a mile from the Reno/Tahoe International Airport. Nearby is scenic Lake Tahoe and historic Virginia City. In addition to a casino, the resort also offers shopping, dining, recreation, a waterpark, bowling, and an RV park.

The Meetings Council will begin planning for the 2009 meeting this fall and is looking forward to this venue for the 2009 Annual International Meeting. Plan now to attend!

For more information on the Grand Sierra Resort, visit [grandsierraresort.com](http://grandsierraresort.com).



The Grand Sierra Resort and Casino in Reno, Nev., will be the host for the 2009 Annual International Meeting.



MEMBER NEWS

**ASABE Fellow Lyle E. Stephens, P.E.,** was recently

awarded the Senior Engineer of the Year Award by the Quad City Engineering and Science Council.



Stephens is a staff engineer at the John Deere's Technology and Innovation Center

in Moline, Ill. He previously announced his retirement from the company effective Sept. 30.

With 30 years of service at John Deere, he is an accomplished engineer in the application of soil dynamics to seeding, tillage, and earthmoving equipment, and more recently, in the emerging area of biomass utilization.

A 36-year member of ASABE, Stephens served as the Society's president in 2002-03.

**Darrin J. Drollinger** of the Association of Equipment Manufacturers (AEM) has been named to the Board of Directors of the ANSI-ASQ National Accreditation Board.

Drollinger is AEM's vice president of statistics, and technical and safety services. He has been a member of ASABE for 17 years.

**Michael C. Hirschi, P.E.,** of the University of Illinois Department of Agricultural and Biological Engineering, recently received the University's Faculty Award for Excellence in Extension at the senior level. Hirschi has been a member of ASABE for 27 years.

**Jessica C.L. Olson, P.E.,** was recently featured as "Extreme Engineer of the Month" in the May 2007 issue of *Pre-Engineering Times*, a JETS publication. Olson is an engineer with the USDA-NRCS and an 11-year member of ASABE. To view the article, visit [http://www.jets.org/newsletter/0507/extreme\\_engineer.htm](http://www.jets.org/newsletter/0507/extreme_engineer.htm).

**Bhupinder Singh Farmaha** was recently honored with the Reddy



Award by the Indian Society of Agricultural Engineers. The award was given for best thesis in the field of agricultural engineering. Farmaha

received a bachelor's degree in agricultural engineering in 2002 and a master's degree in soil and water engineering in 2004, both from Punjab Agricultural University, Ludhiana, India. He is currently employed as a research fellow in the Department of Soils, Punjab Agricultural University. He has been a member of ASABE for one year.

**ASABE Fellow Roscoe L. Pershing, P.E.,** recently received the University of Illinois College of Agricultural, Consumer, and Environmental Alumni Association Award of Merit. Pershing has been a member of ASABE for 43 years.

**Megh R. Goyal, P.E.,** was recently declared "Man of Drip Irrigation in



Puerto Rico" by the Secretary of Agriculture, Senate, the Governor, and mayors of municipalities of Ponce, Caguas, and Mayaguez of the Commonwealth of

Puerto Rico. Goyal has been a member of ASABE for 28 years.

**Mark R. Riley,** associate professor in the Department



of Agricultural and Biosystems Engineering Department at the University of Arizona, is the first winner of the "Arizona Innovation Award."

This program recognizes education initiatives, companies, individuals, and government entities that promote innovation, math, and science and/or create a spirit of entrepreneurship that advances Arizona in the global economy.

Riley co-owns RediRipe® LLC, which is developing a device for detection of ripened fruit. Riley's team has taken the concept of a sticker and created a workable sensor device that determines when produce is ripe. Named the RediRipe® sticker, it is applied to fruit to determine whether it is ready for market.

Riley has been a member of ASABE for 10 years.

**ASABE/CSBE Fellow Vijaya Raghavan, P.E.,** recently received



the Proctor and Gamble Lifetime Achievement Award for excellence in drying research. The award recognizes Raghavan's outstanding career in drying technology.

Raghavan is a James McGill professor in the Department of Bioresource Engineering at McGill University in Canada. He is currently involved in the McGill Canadian International Development Agency's Tier 1 Project, "Consolidation of Food Security in South India," with three universities in India. He has been a member of ASABE for 37 years.

**Members ...**

Do you have some member news you will like to share with your peers?

Contact *Inside ASABE* Editor Suzanne Howard, [howard@asabe.org](mailto:howard@asabe.org).

MEMBER NEWS

## Borlaug Endorses GreenSeeker

Norman Borlaug, Nobel Laureate, recently endorsed GreenSeeker, a technology that helps farmers manage nitrogen fertilizer use. He was in Ciudad Obregón, Sonora, Mexico, to speak to farmers about the merits of the technology.

John Solie, one of the developers of the technology says, "I was pleased and honored by Dr. Borlaug's endorsement of the GreenSeeker sensor technology for managing nitrogen fertilizer application. We have always believed that the technology could favorably impact crop production in developing countries. Borlaug's endorsement opens the door to extension of this technology to these countries."



ASABE member John Solie, one of the developers of the GreenSeeker technology, awaits lunch in Ciudad Obregón following Borlaug's endorsement.

Ronald L. Elliott, professor and department head of the Biosystems and Agricultural Engineering Department at Oklahoma State says, "ASABE Fellows John Solie and Marvin Stone have been at the heart of the development of the GreenSeeker technology."

## Sukup Attends Student Rally



Shown here in front of "Old Nancy" are (l to r): ASABE President Charles Sukup, Steve Taylor, and Tom Way. "Old Nancy" is a 1905 Case steam traction engine owned and operated by Auburn University's Biosystems Engineering Department. Sukup attended the 2007 ASABE Southern Region Student Rally at Auburn.

## South Dakota State University Conducts Industry Inspection Trip

The ASABE and AST Student Branches at South Dakota State University went to Wisconsin on their annual industry inspection trip, March 21-23.

Twenty-eight students toured Kohler Industries, John Deere Horicon Works, and Miller Brewing Co. The goal of the industry inspection trip is to meet with previous and potential employers and understand real-world engineering and technology challenges they will face after entering the work force.

The trip is funded through club fundraising activities and from the Gordon Olson Educational Enhancement Fund in Agricultural and Biosystems Engineering at South Dakota State University. The fund was established by Dorothy Olson in memory of her husband.

This year's trip was organized by ASABE Student President Mike Lynch and AST Student President Tyler Gerlach.



South Dakota University's ASABE and AST student branches recently held their annual industry inspection trip in Wisconsin.

## Coming in the August Issue of *Resource*

Look for complete 2007 Annual International Meeting coverage in the August issue of *Resource* magazine. Meeting highlights will include activities held in celebration of the Society's 100th Anniversary.

IN MEMORIAM

**Julia K. Pryde**, 23, of Middleton, N.J., died during the Virginia Tech tragedy on April 16, 2007. She was attending a civil engineering class on hydrology at Norris Hall when she was killed.



Pryde received a bachelor's degree in 2006 from the university and was halfway through a master's program in biological systems engineering. She had hoped to pursue a doctoral degree and become a professor and researcher. She had been a member of ASABE for four years.

As part of the master's degree program at Virginia Tech, Pryde traveled to Ecuador and Peru in the summer of 2006 to conduct research on water purity. Her goal was to help create a more sustainable form of agriculture that would help the poor residents of the Andes.

"She was very passionate about issues, and she would act upon her passions," says her professor and travel partner, ASABE member Mary Leigh Wolfe. "But she saw the other side, too. She had a great laugh. Julia was fun, she was sincere, she was thoughtful, she was very genuine."

ASABE member Brian L. Benham, an assistant professor in Virginia Tech's Biological Systems Engineering, says, "Pryde was an idealist, but she was practical as well. I used to tease her about having an old soul."

Saied Mostaghimi, chairman of the Biological Systems and Engineering Department, says Pryde was an "exceptional student academically and personally. She was the nicest person you ever met."

**John F. Anderson**, 74, of Cannon Falls, Minn., died Nov. 8, 2006.

Anderson graduated in 1962 from the University of Minnesota with the degree of Doctor of Veterinary Medicine. He operated a veterinary practice until 1966, when he joined the faculty of the College of Veterinary Medicine at the University of Minnesota. In 1972, he moved to Cannon Falls to initiate a clinical teaching program in Total Animal Health Care for senior veterinary students. He retired from the University in 1995.

Anderson had been a member of ASABE for 26 years and was an U.S. Army veteran. He is survived by a daughter, Laurie, of Cannon Falls.

STANDARDS

Cooperative Standards Program

*New Standard*

ASABE S578, Yield Monitor Field Test Standard. The purpose of this standard is to provide the requirements for a uniform procedure for measuring and reporting yield monitor accuracy.

*New Revision*

ASAE S327.3, Terminology and Definitions for Application of Crop, Animal, or Forestry Production and Protective Agents. This revision updates terminology used for spray application. Additional terms were also added.

*New Project*

X303.4, Test Procedure for Solids-Mixing Equipment for Animal Feeds. The proposed changes will allow for use of alternate materials, specifically colored iron particles, in lieu of salt, to determine the efficacy of mixing equipment for animal feeds. The holder of patents for the use of colored iron particles for this procedure has submitted a letter to ASABE headquarters allowing free use of said technology for the purposes of meeting this standard.

*Proposed Project*

Withdrawal of ANSI/ASAE S395, Safety for Self-Propelled Hose-Drag Agricultural Irrigation Systems. This standard is being withdrawn because the equipment it is written for is no longer manufactured.

X424.2, Method of Determining and Expressing Particle Size of Chopped Forage Materials by Screening. This standard is being revised to incorporate the Penn State manually operated separator as an alternative for particle size characterization.

X521.1, Method for Determining Peanut Blanchability. Standard revision required to include the use of commercially available equipment.

*Withdrawn*

ASAE S239.1, Hitch and Box Dimensions for Agricultural Grain Wagons. This standard applied to the wagon box dimensions required to enable the unit to be pulled behind a corn picker. There are so few pickers in use today that this standard is no longer required and has no relevance with present day modern equipment.

For more information, contact the ASABE Standards Department, 2950 Niles Road, St. Joseph, MI 49085-9659; 269-428-6331 or 269-429-0300 ext. 315; fax 269-429-3852.

# PERSONNEL SERVICE

*Resource* is published eight times per year; January 1, February 15, April 1, May 15, July 1, August 15, October 1, and November 15. The deadline for ad copy to be received at ASABE is four weeks before the issue's publishing date.

Advertisements are \$125 per column inch length (column width is 3.5 inches) and include free placement on the ASABE Career Center at [www.asabe.org/membership/careercenter.htm](http://www.asabe.org/membership/careercenter.htm). The minimum ad size is two inches — approximately 100 words — to qualify for the free online listing. Ads are posted on the Web site within three business days of final approval and remain there for 30 days. If the insertion order is for two months, the cost is \$110 per column inch per insertion and includes a 60-day free Web listing.

For more details on this service, contact Pam Bakken, ASABE Personnel Service, 2950 Niles Road, St. Joseph, MI 49085-9659, USA; 269-428-6337, fax 269-429-3852, [bakken@asabe.org](mailto:bakken@asabe.org), or visit [www.asabe.org/resource/persads.html](http://www.asabe.org/resource/persads.html).

**Assistant Professor in Bioprocess Engineering**, 2 positions, University of Hawaii at Manoa, College of Tropical Agriculture & Human Resources, Department of Molecular Biosciences & Bioengineering (MBBE), tenure track, 75% research and 25% teaching, 9-month appointment, salary commensurate with qualifications, to begin approximately January 1, 2008.

**Primary Duties:** Establish a strong research program in bioprocess engineering and teach undergraduate and graduate courses in biological engineering.

**Minimum Qualifications:** Ph.D. in biological or chemical engineering or closely allied disciplines, with formal experience in bioprocess engineering. The position requires a solid background in engineering fundamentals as well as working knowledge of modern biological sciences. Priority will be given to applicants with research expertise related to bioenergy and value-added processing, including, but not limited to: 1) design of engineering systems for production and separation of biologically derived materials; and 2) metabolic engineering of microorganisms or protein engineering of enzymes for more efficient bioconversion. **Desirable Qualifications:** Post-doctoral training; proven grant and/or publication records; strong communication skills and demonstrated ability to collaborate with others; engineering licensure; demonstrated experience in teaching.

**Application Procedure:** Send cover letter, curriculum vitae, statement of research and teaching interests, 2 or more representative reprints, copies of university transcripts, and arrange to have 3 confidential letters of recommendation directly sent to: Search Committee Chair, Department of Molecular Biosciences & Bioengineering, College of Tropical Agriculture & Human Resources, University of Hawaii at Manoa, 1955 East West Road, Honolulu, HI 96822. **Inquiries:** 808-956-8384.

**Application Deadline:** Review of applications will begin on August 15, 2007 and will continue until the positions are filled.

Further information on the position and the department can be viewed at <http://www.ctahr.hawaii.edu/mbbe/job.html>.

## FLORIDA A & M UNIVERSITY College of Engineering Sciences, Technology and Agriculture (CESTA)

### Faculty Position in Biological and Agricultural Systems Engineering (BASE)

**POSITION:** Assistant or Associate Professor

**RESPONSIBILITIES:** The program of Biological and Agricultural Systems Engineering (BASE) is currently seeking applications for a 9-month tenure track position in the area of natural resources conservation engineering. This position is part of a growth plan for the young ABET accredited BASE program and at Florida Agricultural and Mechanical University (FAMU). The successful applicant will teach undergraduate courses in water management system design, natural resources conservation engineering, non-point source pollution, and computer applications. Additionally appointee must establish a research program in natural resources conservation engineering and collaborate with faculty in FAMU's Center for Water and Air Quality. The projected breakdown of time commitment is as follows: **teaching duties, 50%; research, 40%; and university service, 10%.**

**QUALIFICATIONS:** Must have a Ph.D. in agricultural, civil, environmental, or related engineering, with emphases in the area of natural resources conservation engineering and/or waste water management.

**ANNUAL SALARY:** Negotiable

**CLOSING DATE FOR APPLICATIONS:** Review of applications will begin August 01, 2007. The position will remain open until filled.

**APPLICATION MATERIALS:** Curriculum vita; statement of teaching and research interests; official transcripts; names, addresses, and phone numbers of three references; and the FAMU employment application: <http://www.famu.edu/employment>.

Submit completed application package to:

Florida A & M University  
Office of Equal Opportunity Programs  
Unit 5 Ardelia Court  
Tallahassee, FL 32307

**ABOUT THE UNIVERSITY:** FAMU is an 1890 historically black land-grant university located in Tallahassee, Florida. Presently the university has an enrollment of about 12,000 students.

**CONTACT:** Questions regarding the position may be address to:

Dr. G Dale Wesson, Professor /Chairman  
Email: [joyce.jackson@famu.edu](mailto:joyce.jackson@famu.edu) or phone 850 561-2198

*FAMU IS AN EQUAL OPPORTUNITY / EQUAL ACCESS UNIVERSITY*

*Applications from women and individuals in underrepresented groups are strongly encouraged.*

# PERSONNEL SERVICE

## GRAIN SCIENCE AND INDUSTRY KANSAS STATE UNIVERSITY

The Department of Grain Science and Industry at Kansas State University is seeking an energetic, visionary, creative, entrepreneurial, and pro-active Department Head and leader to manage this unique and internationally recognized department.

For a complete position description including required and desired qualifications and experience please visit the Department web site at [www.grains.ksu.edu](http://www.grains.ksu.edu)

**RESPONSIBILITIES** of the Department Head for Grain Science: fostering excellence in teaching, research, outreach both domestically and internationally; set goals and align resources to achieve these goals; Recruit and retain excellent and productive faculty, staff, and students; Provide leadership in fundraising for new facilities, and financial support for the department; Foster diversity, collegiality, and enhance teamwork.

For complete description and how to apply visit the Department web site. Minority and women candidates are particularly encouraged to apply. We also encourage nominations of outstanding potential candidates. Application materials and nominations should be sent to: Professor Fred Fairchild, Chair of Search Committee, Kansas State University, Grain Science & Industry, 201 Shellenberger Hall, Manhattan, KS 66506-2201.

For additional information regarding this position contact the search committee chair at [ffj@ksu.edu](mailto:fjf@ksu.edu) Review of applications will begin August 15, 2007, and will continue until the position is filled. This position will be available by January 2, 2008.

**EQUAL EMPLOYMENT OPPORTUNITY:** Kansas State University is an equal opportunity employer. Kansas State University actively seeks diversity among its employees.



The USDA, Agricultural Research Service, National Peanut Research Laboratory in Dawson, Georgia, is seeking a POSTDOCTORAL RESEARCH ASSOCIATE, (Agricultural, Biological, or Food Engineer) for a TWO YEAR APPOINTMENT. Ph.D. is required. Salary is commensurate with experience plus benefits. **Citizenship restrictions apply.** The incumbent will investigate techniques such as NIR, ultrasound, or other electrical and spectral properties to determine peanut quality at the time of harvest. Peanut quality currently consists of moisture content, total kernel content, density, and hull percentage. Other physical/chemical properties that may be used include oil, sugar and protein content, O/L ratio, and aflatoxin contamination levels. Correlations can then be developed to relate NIR and ultrasonic measurements peanut quality parameters. For further information on Postdoctoral Research Associate Jobs, complete application instructions, and the full text announcement (RA-07-017H) please visit [www.afm.ars.usda.gov/divisions/hrd/hrdhomepage/vacancy/07017.htm](http://www.afm.ars.usda.gov/divisions/hrd/hrdhomepage/vacancy/07017.htm). Send application materials and references to Dr. Christopher L. Butts, USDA/ARS, P.O. Box 509, Dawson, GA 39842 or e-mail ([chris.butts@ars.usda.gov](mailto:chris.butts@ars.usda.gov)). USDA/ARS is an equal opportunity provider and employer.

## ASABE Career Center

The ASABE Career Center – the most comprehensive career and recruiting site for the agricultural, biological, and food engineering industries – is now available for your use. The Career Center offers extensive resumé and position databases and powerful, user-friendly searching capabilities, which allow you to find the job or candidate you're looking for!

### Employers

- Post your job to the largest exclusive audience of industry professionals.
- Manage job postings and activity reports online.
- Access a searchable resumé database.
- Receive competitive job-posting pricing.

### Job Seekers

- The ASABE Career Center is dedicated exclusively to the agricultural, biological, and food engineering industries – and it's free.
- Receive automatic notification of new jobs matching your criteria.
- Post your resumé – confidentially, if preferred – so employers can actively search for you.

Visit [www.asabe.org/membership/careercenter.htm](http://www.asabe.org/membership/careercenter.htm) and start using the ASABE Career Center to make *your* career connections!

# Returning to “Normal”

“...even in the aftermath of mourning senseless murders, I am convinced I have the greatest job in the world.

On a sleepy Monday morning in April, evil invaded the Virginia Tech (VT) campus, and 33 people were killed. ASABE member Julia Pryde was one of them – a young woman I had taught in two classes while she was a sophomore and one during her junior year.

Immediately after the shooting spree, all classes were suspended, and I functioned numbly in a “do” mode. Two days later, I started to feel again, emotions returning. Concentration seemed to come and go, but one question continually haunted me: What will I tell my students when I meet with them for the first time after a week of shock, horror, and grief?

One of the directives given to faculty by counselors was “Take care of *you* so you can take care of those around you.” So, the weekend before classes resumed, I spent an entire Saturday doing physical work on my farm. I did it for me before I penned my “return to normal” plan along with these raw, unpolished thoughts ...

1. Begin with short, 10-minute lecture (take it like any normal day); then **deal with the tragedy as a class – as our own community**.
2. **Tell and encourage “Julia stories.”** She sat on the right near the back with her buddies Anthy and Adam – three “hippies.” Anthy is now an engineer with a California firm, and Adam is a Washington State graduate student; both are doing well. I think these people succeed just to spite me. Julia was just beginning her grad program at Virginia Tech. Remember how she wore her hair in dread locks but then in her senior year changed the style? To everyone’s amazement, Julia had absolutely beautiful hair! Who knew?
3. **Deal with loss of innocence.** November 1963: me, a sophomore at VT, walking across the porch of Lane Hall on my way to a calculus class, stunned by news that President Kennedy had been shot. Until that moment, the world had been rational, well ordered – people were nice. Life was “normal.” But no more. At that moment, childhood was behind me; innocence was gone. This has happened to my students. Lives are now changed, their place of safety, nurturing, and learning violated.

4. **Be transparent** so students will be comfortable in coming to me as individuals. Share the times my heart was broken; that God healed my shattered heart each time; that I know He will heal it again this time. How can I get this message to my students? You can’t mention God in the classroom. **Nuts to that** – find a way.

5. **Discuss the hard questions and the ongoing practicalities.**

- **“Why?”** Rational thoughts cannot explain an irrational action. Evil is real. How can God be just? Was “The Referee” taking a break during the massacre?
- **Anger.** I experienced rage on 9/11 but not this time. Why not now after a campus massacre?
- **Fear.** Should we live our lives in fear? Are we going to withdraw from those around us – or reach out to them? Will we let fear win?
- **Loss of ability to concentrate, loss of sleep, loss of or increased appetite.** We struggle with emotions that overcome us from time to time. Discuss the need to be with others who share this experience.

Exactly one week after “getting back to normal,” my students tested their fountain designs, floating brightly colored beach balls on arcing streams of water, endeavoring to hit target buckets placed on a five-meter radius. This test run, the only design experience provided in the course, was highly anticipated.

It was a beautiful spring day. We laughed, sprayed water about, got soaked, and learned something very important: women engineers do not get their hair wet. Finally, one team got their ball stabilized in the fountain and kept it aloft for about 15 seconds. “Normal” was felt – even palpable. Tensions were dissipating.

On a day like that, even in the aftermath of mourning senseless murders, I am convinced I have the greatest job in the world, and I am continually impressed with the strength and wisdom of my students. As an even greater “normal” returns over the summer and into the next academic year, more and more, we will grasp a great truth: good does prevail.

ASABE fellow [John Cundiff](#) first visited Virginia Tech in June 1957 as a high school student attending the state’s Future Farmers of America rally. As a professor in the biological systems engineering department, this marks his 48th year associated with the University; 540-231-3199, [jcundiff@vt.edu](mailto:jcundiff@vt.edu).



**Eleventh National  
Symposium on  
Individual and  
Small  
Community  
Sewage Systems**

Crowne Plaza Hotel  
at the Crossing  
Warwick, Rhode Island

**October 20-24, 2007**

**Preliminary program  
available online at:  
[www.asabe.org/meetings](http://www.asabe.org/meetings)**

*List of speakers available, too!*

**International  
Symposium on  
Air Quality  
and Waste  
Management  
for Agriculture**

Omni Interlocken Resort  
Broomfield, Colorado

**September 15-19, 2007**

**Preliminary program  
available online at:  
[www.asabe.org/meetings](http://www.asabe.org/meetings)**

List of speakers available, too!

