



NAICC NEWS

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The Voice of the Professional Crop Consultant

May 1996

PLANNING PAUSE

Due to a series of requests from President **Don Jameson's** *ad hoc* committee on contract research, a temporary hold has been placed on the strategic planning program adopted by the Executive Board in the fall of 1995.

It had been previously decided that a planning committee would be created, to include the 1995, 1996, and 1997 presidents, two former presidents, three "rank and file" members, at least one of which was to be a contract researcher, two state association presidents, one sustaining member, and the executive vice president. This group was to meet two to three times throughout 1996 with a professional planner to identify goals for the organization and determine appropriate courses of action to achieve them.

The *ad hoc* committee, chaired by **Roger Musick**, met in Dallas on March 9 and subsequently submitted a list of goals and suggestions to the NAICC Board as to how better to meet the needs of the contract researcher portion of the membership.

The committee listed two primary goals: to integrate contract researchers into the organization whenever possible and appropriate; and to recognize the unique needs and identity of contract researchers.

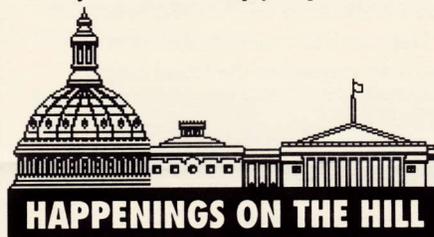
Their suggestions as to how to accomplish these objectives included a specialized certification program for contract researchers; modifications to membership categories and committee structures; a proposed membership campaign directed toward contract researchers, with a unique brochure and display materials; and public relations efforts directed toward agricultural chemical companies.

Also on the wish list was a Contract

Researcher of the Year Award, as well as strengthened relationships with organizations such as the Society for Quality Assurance and American Crop Protection Association.

Although eager to attend to the important business of mapping out the future course of NAICC, Board members also understand the vital role contract researchers will play in that future, and accordingly wish to include the needs of this segment of the membership in the strategic planning process.

The Board is expected to act on the committee's suggestions at their meeting on May 31. We'll keep you posted.



by Allison Jones, Executive Director

EPA Recommends CPCC for WPS Exemption

The WPS exemption for crop consultants went into effect May 1, ending the grace period that allowed consultants to become certified in order to be exempt from WPS requirements, with the exception of pesticide safety training.

EPA has determined that the CPCC program meets all requirements established for exemption of certified consultants, and recently recommended to the state lead enforcement agencies that the CPCC program be recognized to satisfy this requirement. It is the responsibility of each state, however, to choose which certification programs it will accept. States also have the flexibility to establish their own programs if they so wish.

To date, we have received status reports from 23 states, listed in the

column below. If your state is not listed, it has not responded to our requests for a ruling. If you are interested in obtaining a copy of the letter received from your state, please contact the Memphis office.

Please remember, the sooner you send in your renewal fees, the sooner you will receive your certification card for verification of certification.

ALASKA—*Must be licensed in Alaska.*

ARKANSAS—*No official word yet. Received verbal indication that they will accept CPCC.*

FLORIDA—*Initial letter stated they will most likely accept CPCC.*

GEORGIA—*Will accept CPCC.*

IDAHO—*Will accept CPCC if consultants are licensed in Idaho.*

INDIANA—*Will accept CPCC.*

IOWA—*Will accept CPCC.*

LOUISIANA—*Will accept CPCC if consultants are licensed in Louisiana.*

MAINE—*Will accept CPCC.*

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PRESIDENT'S MESSAGE

A SHIFT OF FOCUS

by Don Jameson, CPCC

At the beginning of this year, I appointed three ad hoc committees, with Board approval, to address three important issues: the needs of contract researchers and how this organization can best serve them; resistance management, particularly transgenic crops; and policy and education efforts that NAICC should focus on in the area of precision agriculture.

Under **Roger Musick's** direction, the contract research committee got started with a special dynamic meeting in Dallas the weekend of March 9 (see lead story). Our Executive Vice President, Daney Kepple, participated and a tremendous volume of ideas and sound thinking occurred. Highlights of their thoughts were presented in our Board's April phone conference, and will be reviewed in detail at the May Board meeting. For the moment, allow me to say that there were many substantive ideas and recommendations on how the Alliance can move forward in the current era to meet the professional needs of both crop and research consultants.

The needs and challenges recognized by a professional organization such as NAICC do vary and increase, just as your own business needs vary to meet your farmer or industry client's requirements. The examples below are based on personal experiences, but no doubt many of our production consulting members can relate.

Twenty years ago our firm was one of only two in central Washington offering scientific irrigation scheduling services. Today, there are several other consulting firms offering Neutron Probe technology services, and several fertilizer/chemical dealers are offering monitoring. Even more noteworthy may be the large number of farm operations managing their own in-house "scientific irrigation scheduling" service.

Similar change has rapidly evolved among the segment of our membership that offers contract research services. Many of these individuals started out in production crop consulting and did

contract research "on the side." Then, as companies saw the advantages of contracting independent research, amid an era of new product development, FIFRA, and EPA requirements of GLP, this component of consulting greatly changed, matured and became a unique specialty.

Contract research has grown to provide more than just jobs for our members (and others that we hope will become members); it has spun off a variety of allied support industries of its own, such as specialized types of equipment and software. I think this may be surprising to some of our production consultants who don't work under GLP regulations.

Here are a few more of the specialties that have evolved in the broad range of contract research services:

1. Development of products for the agricultural industry.
2. Variety and hybrid testing of different cultivars.
3. Environmental fate studies for chemicals in both water and soil, to answer the question, "What happens to a product placed into the environment?"
4. Carbon 14 testing.
5. Educational training seminars for industry.
6. Transport of residue materials from field to laboratory via freezer truck vehicles.
7. Laboratory analysis of plant and animal residue materials.
8. Management services firms for development of products through a contract researcher network.
9. Farm equipment and development research.
10. Custom sampling and research for Universities.

The contract research profession has definitely come a long way in recent years, and it is a vital part of the agricultural industry as well as an ever-growing sector of the NAICC membership. As the organization continues to mature, we hope to retain the ability to recognize the need

for an occasional shift of focus, such as the one we are currently undergoing, so that we will never lose sight of one of the most important functions of the Alliance—serving the needs of its members.

("Happenings On The Hill" continued from page 1)

MICHIGAN—Will accept CPCC.

MINNESOTA— Will accept CPCC.

MISSISSIPPI—Received verbal commitment to accept CPCC.

MISSOURI—Will accept CPCC.

NEW YORK—Will accept CPCC.

OREGON—Will accept CPCC.

PENNSYLVANIA—No word yet; Pennsylvania Certified Pesticide Applicators have been approved.

SOUTH CAROLINA—Will accept CPCC.

TENNESSEE—Will accept CPCC.

TEXAS—Received verbal indication that they will accept CPCC.

VERMONT—No word yet; Vermont Certified Applicators have been approved. State has reciprocal agreements with NY, MA, RI, and PA.

VIRGINIA—Initial conversations indicated CPCC approval. Awaiting official letter.

WEST VIRGINIA—Private or Commercial Applicator/Agricultural Plant Pest Control have been approved.

WISCONSIN—Will accept CPCC.

PROMOTION= PROGRESS

What has NAICC done for you lately?

How about participation in the USDA's IPM program, including representation at the recent IPM Symposium? Or what about involvement in legislation and regulatory issues, such as WPS and NELAP? Or the creation of task forces to tackle important issues, such as resistance management, new technology, and the needs of contract researchers?

The benefits of membership in NAICC are almost endless, but those on the outside don't know that. There may even be a few new members out there who are thinking, "so what can NAICC do for me, anyway?"

Even though the Alliance is becoming more visible and more accepted by Washington, the media, and related industries, we certainly can't afford to forget that there are potentially contribu-

tive prospective members who don't know us. The NAICC staff has recently sent out a prospect mailing, which means there are hundreds of folks out there who are now getting their first introduction to the Alliance. Let them know about the advantages membership can offer. Shall we name a few more?

1. Public relations through article placement and regular columns in several agricultural publications.
2. A certification program which shows legislators we are professionals, and clients we are qualified.
3. Education on legal and regulatory issues, technology, business practices, etc., through the annual meeting, the newsletter, and soon, a page on the World Wide Web.

So, what are you waiting for? Get out there and start talking! And don't forget to take advantage of the NAICC membership brochure, available free, from the Memphis office.

BE A BUDDY

Volunteers are needed for the New Member Buddy System, a program recently introduced by the Membership Recruitment, Retention and Rules Committee. Each new member, upon joining NAICC, will be assigned an NAICC buddy. Buddies will be asked to contact their new members at least three to four times throughout the year to answer questions and encourage the new members to get involved. It's a great chance to make a new friend, gain information about how your profession is practiced in a different area of the country, and make an important contribution to the Alliance. Please contact the Memphis office to volunteer.

OPINION

If It's In Print It Must Be True

by Earle Raun

The monthly flood of farm and ag related magazines arrived this week. I read the well-deserved laudatory remarks of Judy Ferguson's editorial-ship, at her retirement. In that same issue came the announcement of the "purchase" of the *Ag Consultant* publication by the CCA program. Yes, they intend to continue the comment page for the National Alliance of Independent Crop Consultants.

This got me to considering the stack of magazines, all coming "free" to ag related subscribers. *Ag Consultant*, *Farm Chemicals*, *CPM Magazine*, *Agri Finance*, *Farm Family America*, *Soybean Digest*, etc. There is a lot of excellent information printed in those hundreds of pages. Who's paying for it? Of course the users of the advertised products and applications are paying for it.

Some of those "free" publications are totally supported by an ag chemical company. But almost all of them are full of chemical advertising. Many of the articles contain subtle, subliminal suggestions to use the products produced by a chemical company. This is particularly true in those totally supported by the chemical industry. And we generally tend to believe what's in print as "truth."

Is it any wonder that biological control of insects and weeds has difficulty in establishing a foothold? Except for Bt products I have yet to see any advertising for biological control. There "ain't no money in it." As readers, it is up to us to analyze what we read, and discriminate. It's the American way.

CONTRACT RESEARCH ROUNDTABLE

This month's Contract Research Roundtable is a collection of presentation highlights from researcher Breakout Sessions at this year's annual convention in Orlando, Florida.

CURRENT EXPERIENCES WITH EPA INSPECTIONS

Roger Musick, *CROP GUARD RESEARCH, Inc., Eakly, Okla.*

Points to consider when preparing for an EPA audit:

1. Make a good first impression by being neat and organized.
2. Make sure your equipment is clean and in good working order, this includes computer system.

The scope of the audit usually consists of a facility audit, 1-3 pre-selected studies, one randomly selected study from the current Master Schedule, and field visits to test sites. You do have the option to delay the inspection date, under special circumstances. If you have multiple inspectors, it is important to know who has the authority. If you have summer technicians in your employ,

make sure their responsibilities are limited to their areas of training.

Be careful how you use the words "random" and "unbiased." "Random" can be defined, but "unbiased" is better since it makes you the expert. Be specific with your documentation of raw data. Proper documentation is still the key!

Tips on logs and records:

1. Fill in all the blanks, but think before you make entries.
2. Have a vehicle for documenting what you say. Document specific limitations included in protocol or SOP.
3. Revise forms to fit use. Do not record excess information on a form that is not designed for it.
4. Complete entries are preferred. The use of ditto marks and arrows vary.
5. Keep logs chronological.
6. There may be intense inspection of maintenance and calibration logs.
7. When to sign and date the bottom line found on most FTN pages is mostly a company preference. The important thing is to initial and date all entries.

In addition, be sure the test substance arrival date and storage date match. EPA dislikes contractors "archiving" test substance materials. They prefer them shipped back to the sponsor. Use only certified weights, and do not offer unsolicited information since the auditors are obligated to investigate anything they are aware of. A proposal has been discussed requesting a one page "EXIT" document at the conclusion of the audit to list any findings during the inspection.

QA AND QC: PROGRAMS OR CORE VALUES

Maureen Barge, *FMC Corporation, Princeton, N.J.*

The advent of Quality Assurance has changed our vocabulary and standardized procedures. It's made us learn to plan, increase our documentation, and improve our products.

Building GLP programs is like building a house; you can't simply focus on just laying the brick. It has to look like a whole house, or you will lose your ultimate goals of integrity, validity, and accountability.

Quality Control is precision and accuracy of procedure. Quality Assurance is inspection and audits of quality control. A QA person has to be separate from those engaged in doing a study.

Recommendations include: demonstrate leadership, commit to your organization's values, be attentive to customer satisfaction, and provide training; know that if people understand why they are doing something, they will do a better job.

PRICING METHODS FOR BIDDING CONTRACT RESEARCH

...from Steve West, *Research Designed for Agriculture, Yuma, Ariz.*

Work on an hourly rate, 40 hours a week and 50 weeks a year. Payroll will be 45-50 percent of your total expenses, and overhead is usually in the same range. The real key is how much time you can bill. If you can, bill 50 percent.

...from Larry Emerson, *South Texas Ag Research, Sealy, Tex.*

In pricing, work from a base cost as a starting point. Adjust upward a little each year rather than a more significant increase each five years. Add to your base considering the number of plots, applications, and samples. Charge more for high-management crops, i.e. rice and vegetables. Calculating cost per hour is different. Here, you would look at the total expense divided by the number of hours.

...from John Gruber, *Ag Consultants, Inc., New Holland, Ohio.*

Consider personnel, equipment, land and crop maintenance, number of applications, number and size of sample, number and method of shipments, and reporting procedures.

MANAGING FIELD VARIABILITY

GPS/GIS/IDI Technology in Production Agriculture

by Joseph K. Berry
Berry & Associates / Spatial Information Systems, Inc.

The following is excerpted from Dr. Berry's presentation at the 1996 NAICC annual meeting in Orlando, Fla.

WHAT PRECISION FARMING IS (AND ISN'T)

In essence, precision farming is about doing the right thing, in the right way, at the right place and time.

It involves assessing and reacting to field variability and tailoring management actions, such as fertilization levels, seeding rates and variety selection, to match changing field conditions. It assumes that managing field variability leads to both cost savings and production increases. Precision farming isn't just a bunch of pretty maps, but a set of new procedures that link mapped variables to appropriate management actions.

ELEMENTS OF PRECISION FARMING

Precision farming consists of four basic elements: global positioning system (GPS), data collection devices, geographic information systems (GIS) and intelligent implements. Modern GPS receivers are able to establish positions within a field to about a meter. When attached to a harvester and connected to a data collection device, such as a yield/moisture meter, these data can be "stamped" with geographic coordinates. A GIS is used to map the yield data so a farmer can see the variations in productivity throughout a field. The GIS also can be used to extend map visualization of yield to "map-ematical" analysis of the relationships among yield variability and field conditions. Once established these relationships can be used to derive a "prescription" map of management actions required for each location in a field. The final element, intelligent implements, reads the prescription map as a tractor moves through a field and varies the application rate of field inputs in accordance with the precise instructions for each location.

SMART FARMERS, DUMB MAPS

This "map-ematical" processing involves three levels: cognitive, analysis and synthesis. At the *cognitive level* (termed desktop mapping) computer maps of variables, such as crop yield and soil nutrients, are generated. These graphical descriptions form the foundation of precision farming. The *analysis level* uses the GIS's analytical toolbox to discover relationships among the mapped variables. This step is analogous to a farmer's visceral visions

of relationships, but uses the computer to establish mathematical and statistical connections. The *synthesis level* of processing uses spatial modeling to translate the newly discovered relationships into management actions (prescriptions). The result is the prescription map needed by intelligent implements in guiding variable rate control of field inputs.

TECHNICAL ISSUES

Data collection for precision farming can be divided into two broad areas: continuous data logging and discrete point sampling. *Data logging* continuously records measurements, such as crop yield, as a tractor moves through a field. *Point sampling*, on the other hand, uses a set of dispersed samples to characterize field conditions, such as phosphorous levels. The nature of the data derived by the two approaches are radically different- a "direct census" of yield versus a "statistical estimate" of phosphorous. In data logging, issues of accurate measurement, such as GPS positioning and material flow adjustments, are major concerns. In point sampling, issues of spatial interpolation (estimating between sample points), such as sampling frequency/pattern and interpolation technique, are the focus of concern. In both cases, the resolution of the analysis grid used to geographically summarize the data is a critical concern. If the analysis grid is too coarse, information is lost in the aggregation over large grid spaces; if too small, measurement and positioning errors are influential. The technical issues surrounding mapped data analysis and spatial modeling involve the validity of applying traditional statistical techniques to spatial data. For example, regression analysis of field plot data has been used for years to derive crop production functions, such as the corn yield versus potassium curves you might recall from college. In a GIS, you can regress a entire map of corn yield on a map of potassium (they're just spatially organized sets of numbers) to derive the production curve relating the two mapped variables- but should you? Technical concerns, such as variable independence and autocorrelation, have yet to be thoroughly addressed. Statistical measures assessing results of the

analysis, such as a spatially responsive correlation coefficient, await discovery and acceptance by the statistical community. The issues surrounding spatial modeling are similar to data analysis and involve the validity of using traditional "goal seeking" techniques, such as linear programming or genetic modeling, to generate maps of the optimal actions (prescription maps). At present, the full "map-ematically" based approach to precision farming is in the hands of the researchers.

LEGAL ISSUES AND IMPACTS

Four important social issues surround precision farming:

- *Intellectual property rights* are a major concern from the vendor's point of view. The issuance of broad patents to individual companies, such as linking GPS to GIS and variable rate control, reward innovative thinking, yet generate market uncertainty and stifle open development of an emerging technology.
- *Intellectual property wrongs* refer to the validity of precision farming systems. They all generate pretty maps, but whose map is best? And what recourse do you have if you follow a bum prescription map and lose the farm?
- *Who owns the data* derived through precision farming is another important issue. If a farmer pays for the collection, analysis and synthesis of precision farming data about his farm, who owns, and possibly even more importantly, controls access to these data? Can the analyst use or sell the information without the farmer's consent?
- Or, as with *data haunting*, can the data be used in court against the farmer- sort of a high-tech self-incrimination?

As with any new technology, precision farming is pushing at the envelope of our traditional social beliefs and legal doctrine.

EXTENDED ISSUES AND TRENDS

Precision farming is pushing, as well, at current definitions of agricultural research and markets. Historically, agricultural research involved controlled studies on a few plots in a couple of fields at a university or experiment station hundreds of miles away, involv-

ing different soils, climatic conditions and plant varieties. The data was analyzed and the findings published. With the advent of precision farming, a farmer has access to thousands of "plots" in his own backyard (the analysis grid used in establishing yield and field condition maps). What is needed is a switch in emphasis from publishing research findings to transferring research methodologies so farmers can apply them to their own extensive data sets. Changes in the agriculture marketplace and the *private/public sector's use of GPS/GIS* are just as dramatic. A clamor for digital mapped data is causing mapping agencies, such as the USGS and the NRCS, to change data collection, map preparation and distribution procedures. Downloading digital map products over the Internet is already a reality. A booming cottage industry has sprung up for developing the data bases needed in precision farming, such as soil nutrient maps. A growing array of options for the tractor, such as GPS and notebook computers mounted in the cab, are rapidly appearing. Consulting services specializing in the analysis of precision farming data are forming. To date, however, the justification of all this excitement has been on cost efficiency and crop productivity. More recently, the value of GIS is viewed as not only making more efficient and well-informed management decisions, but as a "revolution" in the decision-making process itself. With the advent of the environmental movement, a farmer can't harvest a single crop without a thorough analysis of its environmental impacts. As increasing environmental regulations loom in agriculture, such as the T-factor in soil loss and nitrogen allocations by watershed, the spatial technologies in precision farming might become as much a necessity as a tractor.

CONCLUSIONS AND SOME GOOD ADVICE

Common sense leads us to believe the efficiencies in managing field variability outweigh the costs of the new technology. However, the enthusiasm for precision farming must be dampened by reality consisting of at least two parts: empirical verification and personal comfort. To date, there have not been definitive studies that

economically justify precision farming. In addition, the technological capabilities (cart) appears to be ahead of scientific understanding (horse) and a great deal of "spatial research" lies ahead. That brings us to personal comfort. If you are skeptical of precision farming and/or feel "cyber-challenged," you should wait to fully adopt the technology. However, keep in mind that if precision farming proves to be more than a passing fad, its most important ingredient is a robust database- each year that data collection is postponed it puts a farmer farther behind. Like the natural resource experience, a farmer's ability to spatial reason and report might become an integral part of survival and growth on tomorrow's farm.

NAICC WWW

NAICC is in the driver's seat on the information highway! Effective June 15, NAICC members can go online and cruise straight to the NAICC Home Page on the World Wide Web.

This project, sponsored by **American Cyanamid**, will provide information to non-members about NAICC, as well as provide members with up-to-date information on weather, governmental issues, and Extension updates. Members will also be able to communicate with each other through e-mail prompts on the Home Page.

Discussion groups will be available to members on such topics as regional crops, Contract Research technical talk, small business concerns, GLP issues, and precision agriculture, just to name a few.

Best of all, members will be able to read this newsletter online!

If you have an e-mail address that is not in the 1996 Membership Directory, please e-mail the Memphis office at dkepple@aol.com.

Global Food Supply and Demand in 2020: A Synthesis

by David Nygaard, Director of Country Programs, International Food Policy Research Institute, Washington, D.C.

The following is excerpted from Mr. Nygaard's presentation to the 1996 NAICC annual convention in Orlando, Fla.

INTRODUCTION

About two years ago as a result of concern over declining support for agricultural development and agricultural research, the International Food Policy Research Institute (IFPRI) launched an international initiative which we call "A 2020 Vision for Food, Agriculture, and the Environment." We have held some 18 expert consultations and seminars on the international food situation which led to a conference in Washington, D.C. in June of last year.

The result of the overall initiative is clear: we cannot afford to be complacent about the world's ability to feed some eight billion people by the year 2020. Today we have some 800 million people who are malnourished and hungry and 1.1 billion people who live on less than a dollar a day. Although there is an adequate supply of food globally, it is poorly distributed and the hungry are poor people who cannot afford to buy the food even if it were available.

Perhaps the most interesting finding of our global analysis was the paradox posed by the emerging world food situation. Findings from IFPRI's global food projections to the year 2020 show that the world will continue to have two distinct and contrasting situations. On the one hand, wealthy countries, together with a number of rapidly growing developing countries, will enjoy low food prices and food surpluses or affordable imports. On the other hand, poorer, slowly growing countries will, if present policies continue, make little progress on improving food security or in reducing malnutrition. Fortunately, the projections also indicate the potential for significant improvement in food security in most developing countries if national and international institutions

increase their efforts on behalf of broad-based agricultural and economic growth.

THE 2020 VISION SEMINAR ON PEST CONTROL

We held three seminars on the use of chemical inputs in third world agriculture. We brought together representatives of six different environmental advocacy groups; six representatives of private, for-profit firms; eight academics and researchers; and four IFPRI staff members.

This was, I think you will agree, a potentially explosive group. It will not be of news to you that many environmental groups would like to simply ban pesticide use. However, I think there was acceptance, albeit reluctance, that strategies to decrease pesticide use, including IPM, will still depend on their use where and when necessary.

IPM, which received much attention in the seminar, was introduced by the environmentalists as an alternative to pesticide use. But there are problems implementing IPM in developing countries where farmers are often illiterate, lack proper equipment, and have poor storage facilities.

As the environmentalists documented cases where pesticides were misused in the Third World, it was clear that using IPM and other crop protection technologies in the developing world is not a simple matter of transferring the technology; rather it included transferring knowledge, and this is a much more difficult process. Yet estimates of crop losses in these countries are enormous, shockingly so.

Finally, as many of you know, fertilizers, herbicides, and pesticides are often subsidized sometimes heavily so in these developing countries, and one of the recommendations from the seminar was to policy makers to remove these subsidies.

Environmentalists deliberately and pointedly hold up agrichemical firms and those who recommend pesticide use to collective responsibility for any wrongs in pesticide use. Returning to the example of promoting chemical use to farmers who are not sophisticated enough to use them properly, who bears the responsibility when such farmers use chemicals incorrectly?

It was suggested that the answer is for the industry to clarify responsibility and set industry wide standards, including standards for middlemen, and develop the process for enforcing them.

There is an obvious lack of focus and research on crops important to the Third World and to problems in developing countries by the for-profit sector, and understandably so, because it is difficult if not impossible for private firms to capture acceptable returns for their effort. This was most obvious in the seminar on biotechnology. There is a danger, we feel, that the Third World may be left behind in the biotech revolution much the way some developing countries are suffering from being left out of the electronic communications revolution.

It is a mistake to assume that the private sector will tackle all problems of Third World agriculture. They won't. The solution is to capture the opportunity for collaboration between the private sector, ag industrial firms and international and national development institutions, both public and private.

We are dealing with important issues today, and they will clearly be important tomorrow and until 2020. The challenges are enormous: to produce more food, to reduce poverty and hunger in developing countries, to feed another two billion people who will join us over the next 25 years. If the challenges are enormous, so are the opportunities.

New Sustaining Members Come on Board

NAICC has welcomed several new sustaining members recently, among them two cottonseed producers, **Stoneville Pedigreed Seed Company** and **Delta and Pine Land Company (D&PL)**.

Stoneville, founded in Stoneville, Miss., in 1922, was purchased by Calgene, Inc., in 1986. In 1991 the company purchased the germplasm and facilities of Cohen Pedigreed Seed Company. As a result, the company's research program increased dramatically in scope and size to develop

cotton varieties such as BXN™ cotton, a recently developed herbicide-resistant variety meant to be used with the **Rhone-Poulenc** product Buctril® 4EC. Stoneville was the first cottonseed company in the U.S. to market genetically-engineered seeds. The company will add additional BXN varieties in 1997 and will release a BXN/Bt variety in 1998.

Delta and Pine Land Company, founded in 1911, is headquartered in Scott, Miss., and has seven research facilities and eight operations facilities located throughout the South and Southwest. D&PL is the largest producer of cottonseed in the U.S., and in the 1980s added soybeans to its product line. D&PL cottonseed varieties include the Paymaster® and Lankart® varieties. The firm recently purchased the cottonseed division of Jacob Hartz Seed Company and is actively involved with pima varieties and supports the SUPIMA™ association. This season, D&PL began marketing NuCOTN varieties which incorporate **Monsanto's** Bollgard™ gene to control bollworms, pink bollworms and budworms.

Other new sustaining members we are delighted to introduce include **Deere & Company**, **CPM Magazine**, and **ISK Biosciences Corporation**.

Deere & Company, which began in 1837 with the development of a plow in John Deere's pioneer blacksmith shop, is now the leading manufacturer of agricultural equipment as well as a major supplier of construction and forestry equipment, lawn and grounds care equipment for homeowners and grounds care professionals, service parts, and engines. In 1956, the company became a multinational corporation with expansion into Mexico and Germany. In 1958, the industrial equipment division was established. John Deere Credit was also established in 1958, providing financial services including credit and insurance. Deere & Company entered the lawn and grounds care business in 1963, in 1987 began offering products for the golf and turf equipment market,

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MEMBERS IN THE NEWS

David Hydrick and one of his grower clients, **Rodney Jackson**, were featured in a February **Fiber** article, where they discussed measures taken last season to maximize Jackson's cotton yield.

An article by **Chuck Farr** about cutting crop management costs appeared in the March 15 issue of **Delta Farm Press**.

Ron Seward appeared in a photo in the March 8 issue of **Delta Farm Press**. The photo was taken at Cotton Focus '96 in Jackson, Tenn.

For a recent issue of **Crop Protection Manager**, **Grant Pearson** and **B.B. Singh** contributed articles based on their experiences with corn weed control and corn pest control, respectively.

Harold Lambert's comments on privatization were included in a recent **Delta Farm Press** article which discussed the expanding role of the consultant due to the privatization movement.

NEW MEMBERS

VOTING

George Post, B.S. (Pomology)
Agricultural Advisory, Inc.
3975 E. Butts Road
Live Oak, CA 95953
Office: 916/674-1255
Home: 916/673-3898
Fax: 916/674-1907
Mobile: 916/747-2710

Crops: All tree crops, especially peaches, plums, prunes, almonds, walnuts.
Services: Nutrition, pest and disease control, irrigation, pruning, thinning, variety selection, other cultural practices.

John Nordgaard, M.S.
(Plant Pathology)
AGVISE Laboratories
Box 510, Hwy. 15
Northwood, ND 58267
Office: 701/587-5343
Home: 701/746-8045
Fax: 701/587-5345
Mobile: 701/739-3819

Crops: Potatoes.

Services: FIFRA and GLP research, efficacy and demonstration projects, consulting and training on irrigated potato production.

Michael McHugh, B.S. (Entomology)
Southwest Texas Ag Consultants, Inc.
P.O. Box 1431
Uvalde, TX 78801
Office: 210/278-3900
Home: 210/278-3634
Mobile: 210/591-6655

Crops: Cotton, spinach, cabbage, southern greens, onions, carrots, cucurbits.

Services: Pest management, fertility, water, cultural recommendations.

PROVISIONAL

Pat Halbe
Centrol, Inc.

714 Atlantic Avenue
Morris, MN 56267
Office: 612/589-4293
Home: 612/563-0503
Fax: 612/589-4301
Mobile: 800/519-7022

Crops: Corn, soybeans, wheat, navy beans, barley, alfalfa, oats, sunflowers.
Services: Scouting and recommendations.

STUDENT

Matthew T. Henry
Georgia Agri-Scientific, Inc.
P.O. Box 390
Hawkinsville, GA 31036
Office: 912/892-2366
Fax: 912/783-0525

*("New Sustaining Members..."
continued from page 7)*

and in 1994 acquired Homelite, a leader in hand-held and walk-behind power products. John Deere is also actively engaged in managed health care activities. Headquartered in Moline, Ill., the company does business in more than 160 countries, manufactures products in 10 countries, and employs 34,000 people worldwide.

CPM (Crop Protection Manager) Magazine is a trade publication distributed to 250,000 commercial growers who are customers of independent and United Agri Products-owned ag chemical retailers. According to publisher Jeff Powell, CPM's readers farm approximately 82 percent of U.S. corn acres, 79 percent of U.S. soybean acres, 71 percent of U.S. cotton acres, 66 percent of U.S. wheat acres and 87 percent of sorghum acres. CPM is published five times annually, from January to May in the Midwest, South, and Northeast; and from January to September in California, Florida, and the Northwest. Specialty publications include three annual Cotton Editions,

four annual Potato Editions, and a Fall Midwestern Post-Harvest Edition. CPM also produces Canadian and Mexican editions. The editorial offices are in Eugene, Ore.

ISK Biosciences Corporation is a manufacturer and marketer of agricultural and specialty chemical products with headquarters in Mentor, Ohio, sales offices worldwide, and manufacturing facilities near Houston, Tex. ISK Biosciences primarily manufactures and sells agricultural fungicides under the Bravo® and Daconil® brand names. ISK Biosciences also produces

preemergent and postemergent herbicides. The turf and specialty product line includes weed and disease control products for turf grasses, including golf courses and residential areas; and ornamentals, including greenhouses and nurseries. The Industrial Biocides division researches, develops, and distributes products for the coatings and wood preservation industries. Their newest product line is treated wood for deck construction known as Kodiak™

NAICC greatly appreciates the support of these leading U.S. agribusiness firms.

CALENDAR OF EVENTS

MAY 31-JUNE 2, 1996

NAICC Executive Board Meeting, Memphis, Tenn. For more information call 901/683-9466.

JUNE 10-14, 1996

Twelfth International Congress of the International Society of Quality Assurance, Yokohama Convention Center, Yokohama, Japan. For more information call 919/467-7778.

OCTOBER 18-20, 1996

NAICC Executive Board Meeting, New Orleans, La. For more information call 901/683-9466.

JANUARY 22-26, 1997

NAICC Annual Meeting, San Antonio, Tex. For more information call 901/683-9466.

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