Iowa State University
Corn and Soybean Initiative

Mission

To provide science-based crop production information to Iowa corn and soybean growers to increase their productivity and global competitiveness while also conserving the environment

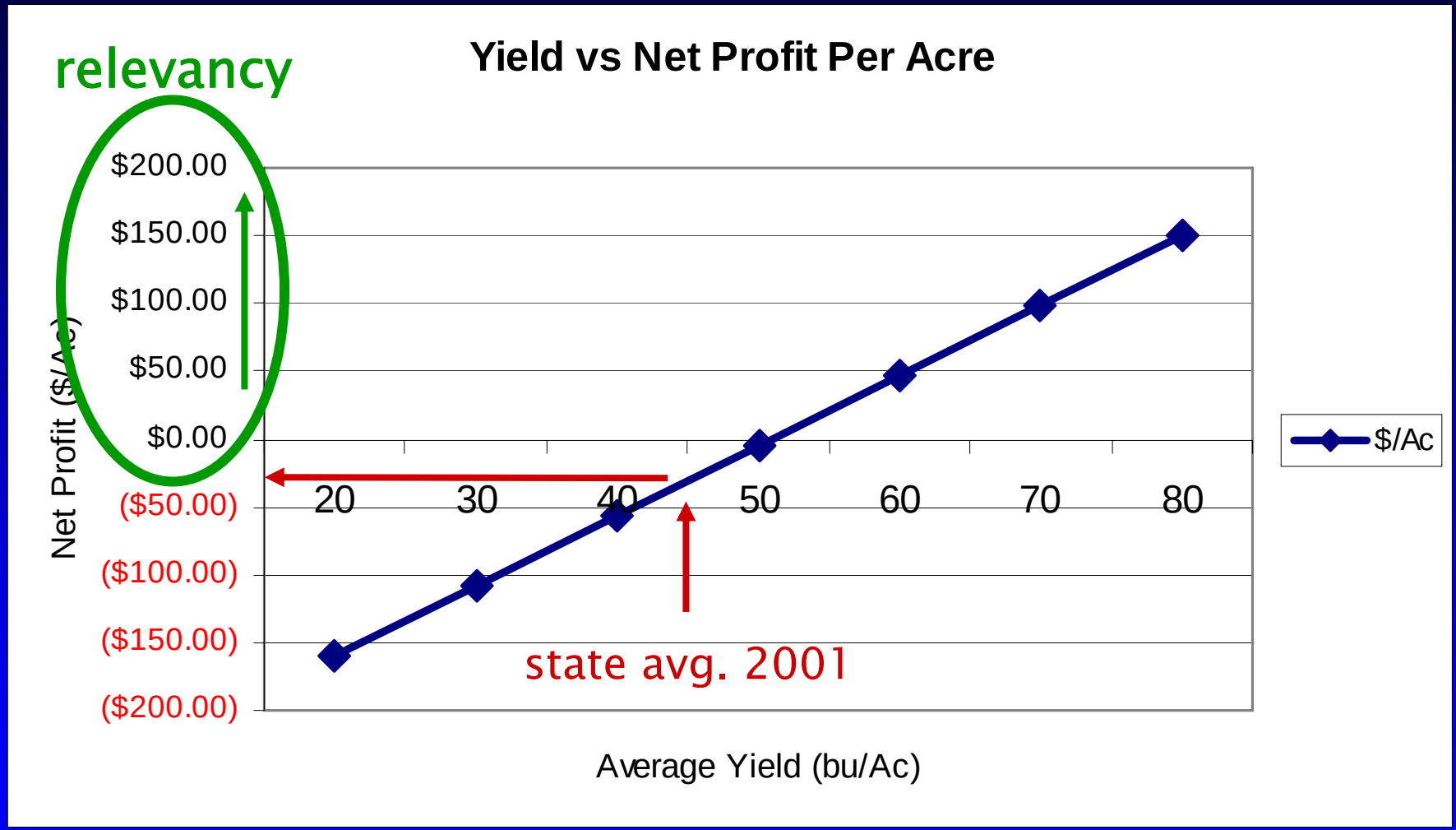
Soybean Production Economics

Gross income from soybean production
(@ 45 bu/acre and $4.30/bu): ← state avgs. 2001
$193.50 per acre

Gross income from soybean production
(@ 45 bu/acre and $5.43/bu – gov't LDP price):
$244.35 per acre

Average cost of soybean production in 2001
(@ 45 bu/acre):
$266.75 to $273.45/acre

Soybean Production Economics



Iowa State University
Corn and Soybean Initiative

Goal

To integrate, coordinate, and brand Iowa State University's applied research and extension activities in corn and soybean production

Iowa State University Corn and Soybean Initiative

Two Facets

- production research
- extension education

Iowa State University Corn and Soybean Initiative

Overall Goal – Research

Develop “research platforms”

- look for gaps
- anticipate future needs

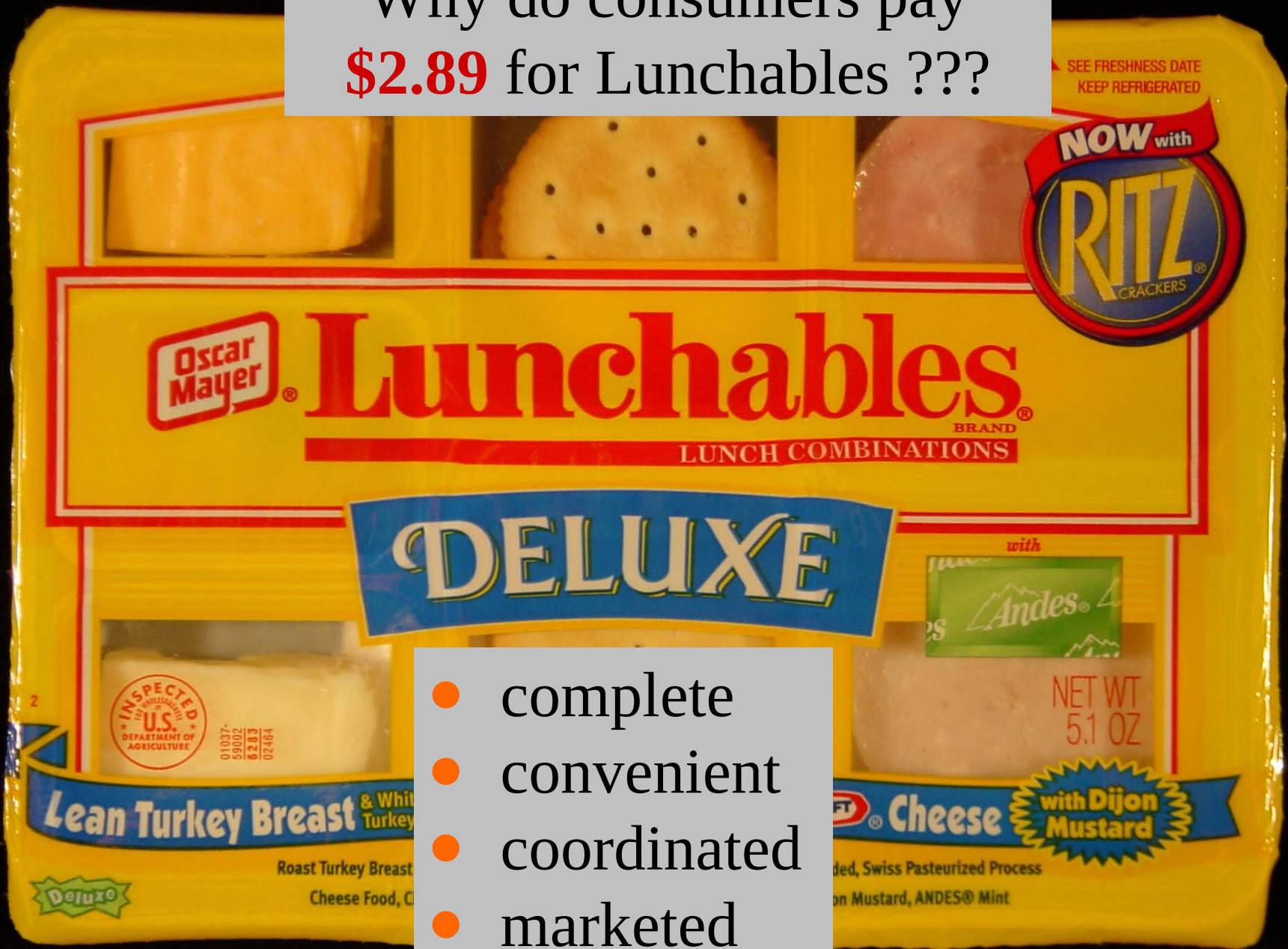
Iowa State University Corn-Soybean Initiative

Overall Goal – Extension

1 oz. turkey:	$0.16
1 oz. ham:	$0.19
1 oz. Swiss cheese:	$0.35
1 oz. cheddar cheese:	$0.31
8 crackers:	$0.32
1 Andes mint:	$0.07
	~~$1.40~~

1 oz. turkey:	$0.16
1 oz. ham:	$0.19
1 oz. Swiss cheese:	$0.35
1 oz. cheddar cheese:	$0.31
8 crackers:	$0.32
1 Andes mint:	$0.07
1 Lunchable:	**$2.89**

Why do consumers pay $2.89 for Lunchables ???



- complete
- convenient
- coordinated
- marketed

Creating the Iowa State University Corn and Soybean Initiative

Step #1

Organize internally

- began in October 2002
- continues today!
- will continue on in the future!!

Iowa State University
Corn and Soybean Initiative
Affiliated Entities

Academic Departments
- Ag. & Biosystems Engineering
- Agronomy
- Economics
- Entomology
- Plant Pathology

Programs
- Ag Quality Systems Initiative
- Agribusiness Education Program
- Grain Quality Initiative
- Integrated Crop Management
- Integrated Pest Management
- Pesticide Applicator Training

Supporting Services
- Crop Management Database
- Field Extension Education Laboratory
- Insect Identification Laboratory
- Outlying Research/Demonstration Farms
- Plant Disease Clinic
- Seed Health Testing Laboratory
- Soil Testing Laboratory
- Weed Identification Laboratory

ISU Extension
- Field Specialists
- CEEDs
- other field & campus staff

Creating the Iowa State University Corn and Soybean Initiative

Step #2

Find out what others think of us

What We Found Out

Confirmation that:

- Iowa corn and soybean growers first turn to agribusiness for information, and agribusinesses first turn to Iowa State University for information

Creating the Iowa State University Corn and Soybean Initiative

Step #3

Organize externally

- began in 2003
- has evolved in the past 36 months
- will continue to evolve

Iowa State University
Corn and Soybean Initiative

Partners Program

Targeted entities will:

- provide in-kind support and promote the Initiative's values and messages

Entities will receive:

- some set of special benefits

Iowa State University
Corn and Soybean Initiative

Charter Organizational and Media Partners
2004

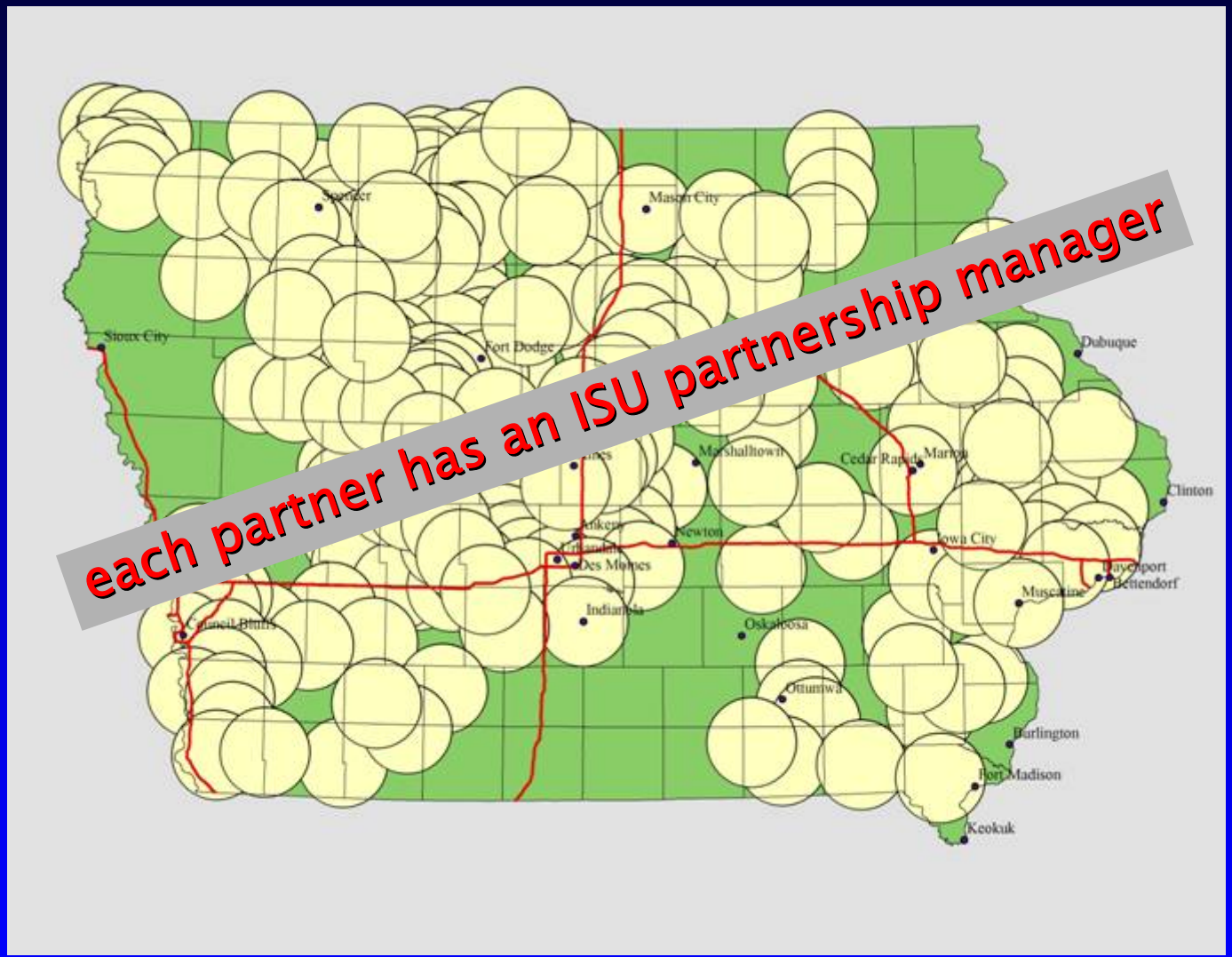
- Agribusiness Association of Iowa
- Iowa CCA Board
- Iowa Corn Growers Association/Promotion Board
- Iowa Farm Bureau
- Iowa Farmer Today
- Iowa Soybean Association
- Wallaces Farmer

Iowa State University
Corn and Soybean Initiative

Retail and Consultant Partners 2004

- AgPartners, LLC
- C-S Agrow
- C^{8}MP LTD
- FC Farmers Cooperative Co.
- Golden Furrow
- Heart of Iowa Coop
- Heartland Cooperative
- MaxYield Cooperative
- NEW Coop
- Nichols AgriService, LLC
- Pelgrow
- River Valley Cooperative
- Stutsmans
- Twin-State, Inc

Corn and Soybean Initiative Partnerships



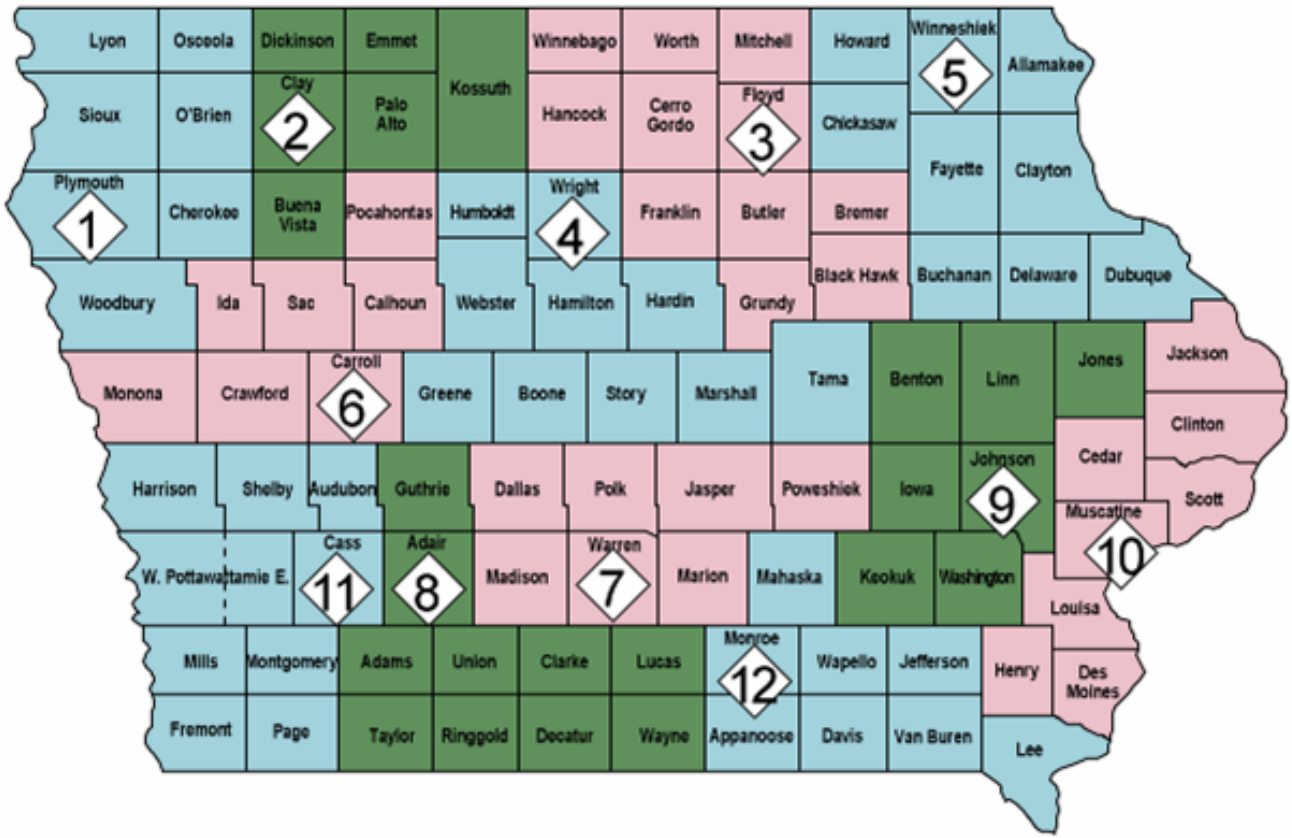
NOTE: These businesses service nearly 70% of the crop acres in Iowa

ISU Extension Field Specialists – Crops

Crops Field Specialists

| Region 1: Joel DeJong | Region 2: Paul Kassel | Region 3: George Cummins | Region 4: John Holmes | Region 5: Brian Lang | Region 6: Todd Vagts | Region 7: Mike White | Region 8: John Kennicker | Region 9: Jim Fawcett | Region 10: Virgil Schmitt | Region 11: Clarke McGrath | Region 12: Mark Carlton |

Please click on map or text links above



Creating the Iowa State University Corn and Soybean Initiative

Step 4

Begin functioning

Iowa State University
Corn and Soybean Initiative

Staff

- Rich Pope (50%) — ISU resource manager
- Malcolm Robertson (100%) — partnership program manager
- Greg Tylka (50%) — coordinator
- FS-Crops & some CEEDs — partnership managers
- college & extension communications specialists

Iowa State University Corn and Soybean Initiative

- building awareness of CSI

Iowa State University Corn and Soybean Initiative

- building awareness of CSI

Iowa State University Corn and Soybean Initiative

- delivering value to CSI partners
- illustrating relevance of ISU research and extension to corn and soybean production in Iowa
- better serving Iowa corn and soybean growers

Partnership Matters monthly newsletter

RESEARCH BRIEF—

New study, old pest

What's new in grape colaspis. The grape colaspis is a historic corn and soybean pest that has caused damage to seed corn in recent years. Larvae feed on the root hairs of seedling crops. Damage is most common in seed corn; however, there have been damage reports in field corn and soybeans. The larvae are small, cream-colored grubs (⅛ to 3/16 inch) with light tan heads. The adults are small, brown beetles about 3/16-inch long (a little shorter than a corn rootworm). The most recent research from Iowa State prior to this study was in 1941 and 1942 in a corn and red clover rotation.

Grape colaspis larva next to a dime *(Ben Kaeb)*

Adult grape colaspis beetle *(Ben Kaeb)*

ISU research. In response to the recent damage, graduate student Ben Kaeb, under the guidance of Jon Tollefson, Department of Entomology professor and chair, has initiated research to learn more about control and sampling methods of the grape colaspis. The objectives of his studies are to: (1) determine the efficacy of available seed treatments and soil insecticide against grape colaspis larvae, (2) evaluate the feasibility of insecticide application in soybeans to prevent injury in seed corn the following season, and (3) examine sweep net sampling in soybeans prior to seed corn as a possible prediction tool.

What's next. Two groups of field experiments will be conducted in 2005. The first is a trial of seed treatments for effectiveness on controlling colaspis beetles, and the other will examine the feasibility of spraying for adult control to prevent egg laying in soybeans.

Learn more. A website on the grape colaspis is in the process of being constructed. It will eventually contain the results of this research. The web address is www.ent.iastate.edu/grapecolaspis/.

RESEARCH BRIEF—

It's a trap!

What's new in soybean aphids. There has been much speculation regarding soybean aphid infestations this summer with expectations that outbreaks may be severe. These predictions are based on large numbers of aphids collected in a network of suction traps during the fall of 2004, when winged aphids were migrating to their overwintering host, buckthorn. Although suggestive of successful overwintering, and thus potential problems during the 2005 growing season, these data are based solely on traps deployed in Illinois. To what extent this network can explain aphid outbreaks in Iowa has yet to be determined.

A network of suction traps used to collect soybean aphids *(D. Voegtlin, Illinois Natural History Survey)*

ISU research. Recently hired entomologist, Matt O'Neal, has joined this network. Beginning in May, the soybean entomology lab at Iowa State University began deploying four traps across the state. The traps will be built at the Research and Demonstration Farms at Floyd, Lucas, O'Brien and Story counties. The 20-foot-tall traps collect aphids from May until September, when winged aphids are active. By collecting aphids well above the plant canopy, aphids are captured moving between their overwintering host and soybeans.

ISU results. These traps are part of a multi-state project, financed in part with soybean check-off funding, that will improve our ability to anticipate soybean aphid outbreaks. Suction trap data from the past four years suggest that large numbers of winged aphids collected in the fall may be predictive of heavy infestations in the following growing season.

What's next. Coupling of suction trap data with in-field population densities will help validate the predictive power of this network.

Learn more. A summary of the current recommendations for soybean aphid management can be found in the updated fact sheet (SP 247, *Soybean Aphids in Iowa—2005*), which will soon be available through ISU Extension. To follow the data collected from the suction trap network (current and archived data from 2001) visit: www.ipm.uiuc.edu/fieldcrops/insects/soybean_aphids/suction_trap_network/index.html.

Partnering for potassium, *continued—*

- to calibrate commonly used soil-test K methods with yield response and study the variation of soil-test K values and yield to determine possible differences for soil types and (or) topographic positions.
- to study variability of soil-test K results over time and its relationship to the capacity of soil tests to predict crop response to K fertilization.
- to study the interaction between K nutrition and incidence of pests and diseases.

What's next. The project will be conducted over two growing seasons. Results will be made immediately available to the research cooperators. After the 2007 season, the cumulative data from the two-year project will be analyzed and production recommendations for various regions will be developed and released to the public.

Learn more. Data will be presented to growers and agribusinesses at extension meetings, in extension publications, and by the partners involved in the research.

ISU PROFILE—

Alison Robertson

Assistant professor of plant pathology and extension field crops pathologist

Origin

Harare, Zimbabwe

Training

- Ph.D., Plant Pathology, Clemson University, South Carolina, 2003
- M.S., Plant Pathology, University of Zimbabwe, 1999
- B.S., Plant Pathology, University of Natal, South Africa, 1991

At ISU

- Joined the Department of Plant Pathology, May 2003
- Research interests include Phytophthora stem rot of soybean and the effects of *Fusarium* fungi on corn
- Member of the Iowa Soybean Rust Team

Notable achievements

- Mother
- Zimbabwe triathalon team, 1996–1999
- Zimbabwe swimming team, 1984–1988
- Zimbabwe swimming team captain, 1985

Personal

- Married to Malcolm and have one daughter, Kirsti, 3½ years

Quotable quote

"Never say 'never.' I said I would never go to grad school. Malcolm said he would never live in Iowa. Now I look back with 20/20 hindsight and am thankful for the opportunities that I was given, and more important, those that I took. I'm here because of those breaks, and I'm happy to be where I am."

ISU BY THE NUMBERS—

Rashelle Matthiesen-Anderson, part-time assistant in the Plant Disease Clinic.

Plant Disease Clinic

Total samples (including telephone, e-mail, plant and soil samples) received, 2005	3,967
Number of field crop samples, 2005	183
County submitting the most samples (Polk)	153
Most distant sample submission, in miles (Huron, CA)	1,907
Plant samples received that were decayed beyond recognition (follow-up sample requested)	21
Peak 2005 month for receipt of samples (August)	625
Lowest month for samples both January and December	5
Samples submitted through the Asian Soybean Rust Fast Track, 2005	4
Samples positive for Asian soybean rust in Iowa, 2005	0
Number of campus-based staff assisting with diagnoses	46

For more information, e-mail sickplant@iastate.edu, visit the website at www.plantpath.iastate.edu/pdc/, or call 515-294-

Partnership Matters is published electronically once a month for partners of the Corn and Soybean Initiative, with funding from the College of Agriculture and support from Iowa State University Extension. Brian Meyer, College of Agriculture, is executive editor of *Partnership Matters*; Kaven Arrowsmith, Continuing Education and Communication Services, is managing editor; and Donna Hallauer, Information Technology Services, Iowa State University, is production designer.

To learn more about the Corn and Soybean Initiative contact

Greg Tylka — gltylka@iastate.edu — 515-294-3071
Malcolm Robertson — malcolmr@iastate.edu — 515-294-7182
Rich Pope — ropope@iastate.edu — 515-294-5899

For questions or comments about the newsletter, contact

Kaven Arrowsmith — karrows@iastate.edu — 515-294-2685

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Jack M. Payne, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

Partnership Perks notifications

Partnership Perk

IOWA STATE UNIVERSITY
CORN AND SOYBEAN INITIATIVE

July 20, 2005

Western Bean Cutworm Scouting Might be Appropriate

Western bean cutworm (WBC) causes damage to corn by entering the ear and feeding on kernels. Economic damage from WBC has occurred in the past 5 years in some cornfields, mostly in Northwest and West Central Iowa. However, the insect may be increasing its range eastward—populations have been found throughout Iowa and into northern Missouri and Western Illinois. WBC has one generation per year, with adult moths emerging in July, mating and laying eggs on corn leaves. The eggs hatch and within a week to ten days, larvae typically move to ears where they feed on the developing kernels, causing direct loss.

For treatments to be successful, insecticide applications must be timed to reach the exposed larvae. Larvae are susceptible to treatment from egg hatch until they enter the ears; once they enter, they are beyond treatment.

The treatment threshold suggested is when 8 egg masses are found per 100 stalks. Egg masses have been found already this season in Pottawattamie, Story, Benton and Buchanan Counties.

Long story short: Insecticides must be applied when WBC larvae are hatched and exposed on the plant prior to entering the ear for successful control. Egg masses have been found in at least four counties across southern and central Iowa. Scouting for egg masses to time insecticide applications should be done now.

Source: Rich Pope and Carol Pilcher, Department of Entomology

Produced by Iowa State University Extension specialists for Corn and Soybean Initiative partners.
Questions and comments may be sent to CSI@iastate.edu.

re-purposing of crop production resources

CSI Partner research roundtable discussions

- conducted annually
- 1 or more representatives per retail partner invited
- to inform partners of on-going corn and soybean research at ISU
- to learn from partners their corn and soybean applied research needs

CSI Partner research roundtable discussion March 4, 2005

main research needs articulated by partners attending the meeting

- information on producing corn after corn
- research on role of soil potassium levels on plant health and pests

CSI Partner on-farm research

- July 1, 2005, $100,000 allocated by ISU for CSI on-farm research in 2006 to address needs articulated by CSI partners
- call for proposals from ISU staff in summer 2005
- in fall 2005, 4 projects selected for funding

On-Farm Research Proposal For 2006

PARTNER IOWA STATE UNIVERSITY CORN AND SOYBEAN INITIATIVE

Field-Scale Assessment of Relationships between Crop Response to Potassium Fertilization, and Incidence of Pests and Diseases

Rationale:

- Frequent potassium (K) deficiency symptoms in corn and soybean may indicate a widespread problem.
- In addition to direct effects on plant health, K deficiency may affect crop diseases and nematode and insect pests of corn and soybeans.
- Rising input costs necessitate wise application of K fertilizer.

Objective:

To develop a cooperative on-farm research project with ISU Corn and Soybean Initiative partner to develop practical solutions for corn and soybean K nutrition problems and the interaction with pests and diseases

Experimental approach:

- The partner will conduct cooperative research with ISU in one corn field and one soybean field in 2006.
- Fields to be used in the research will be identified in fall 2005.
- Simple strip trials will be established in each field in which either no fertilizer or a high rate of K fertilizer will be applied. Each set of unfertilized and fertilized strips will be replicated four times.
- Soil and plant samples will be collected and analyzed to assess plant health and pest and pathogen populations as affected by K fertility.

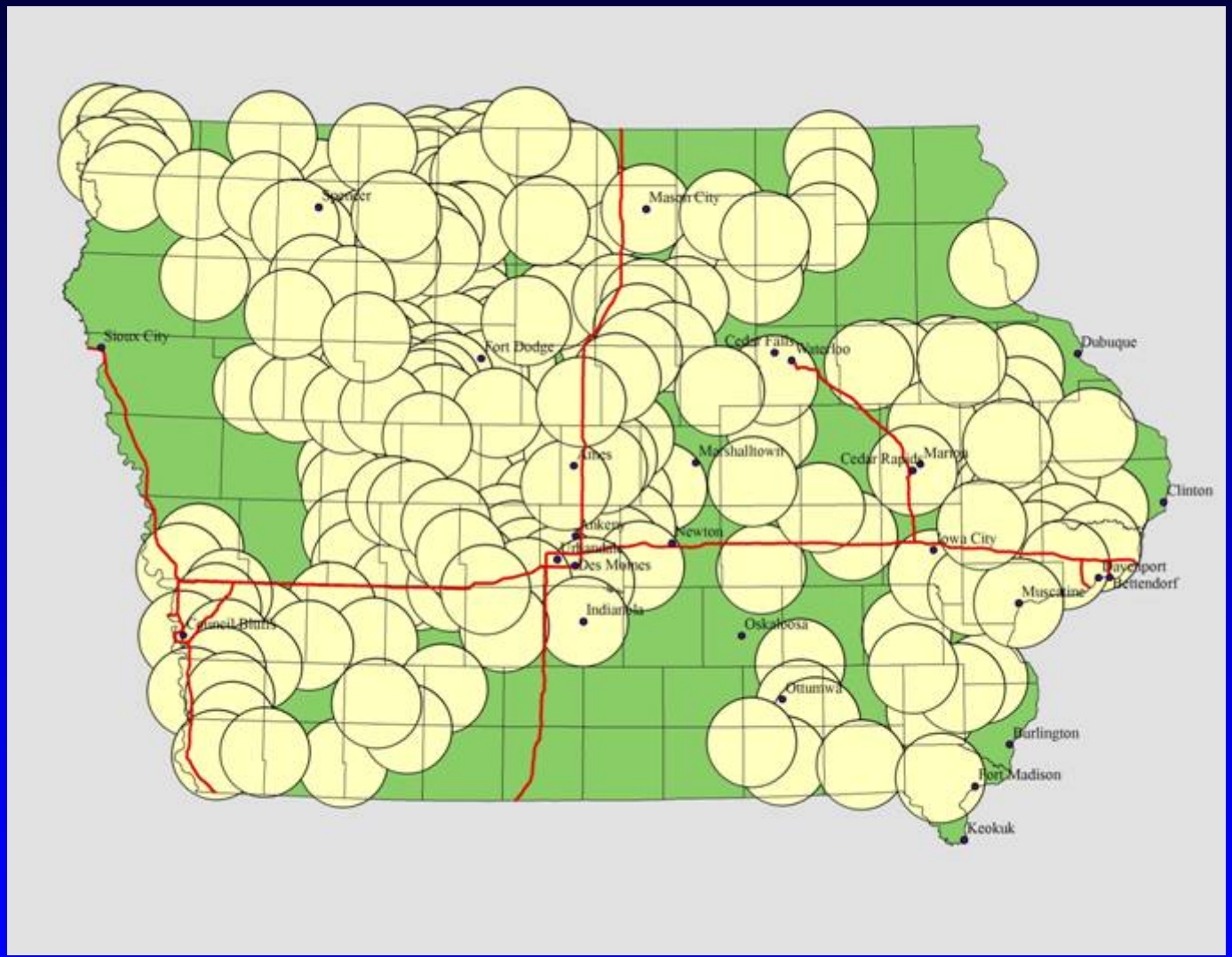
Corn and Soybean Initiative partner will:

- identify growers and fields to be used
- collect soil samples from experimental sites
- provide all fertilizer, seed, herbicide, and any other inputs necessary for normal crop production
- scout fields (training provided by ISU, if necessary) for targeted pests and diseases
- provide yield reimbursement on untreated strips (if stipulated by the farmer)
- collect yield data and end-of-season soil samples
- provide $3,000 support of campus-based activities relating to the research

ISU through the Corn and Soybean Initiative will:

- provide all experimental design, coordination, and protocols
- provide training (if needed) for partner staff to participate fully in the research
- provide all sample analysis for nutrient, pest, and diseases analysis
- conduct data analysis and summarize results
- provide participating partners with all research findings
- provide "ISU Corn and Soybean Partner Research" signage for experimental locations
- provide ISU speakers for limited number of grower field days or winter education meetings as schedules permit
- provide $35,000 support of campus-based activities relating to the research

Corn and Soybean Initiative Partnerships



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