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Trading of Rice Straw Burn Credits

Costs and cost savings generated by the Sacramento Valley’s unique market-based program to restrict rice straw burning are reflected in a study to be published by the AIC.

In 1991, in response to air pollution concerns, the state legislature mandated a 10-year phasedown of rice straw burning in the Valley. The goal is to eventually restrict burning, which growers use to combat rice disease, to no more than 25% of planted acreage. The original plan was relaxed in 1998 by further legislation that allowed a pause in the phasedown schedule, but that is scheduled to end in 2001. On their no-burn acreage, growers must dispose of stubble and straw by alternative methods, primarily by working it into the soil to promote natural decomposition during the winter months. This process combined with the increased threat of rice disease significantly raises straw disposal costs for most growers. To ease this burden, growers have been allowed to trade burn credits with each other until the end of the phasedown period.

In an upcoming *AIC Issues Brief*, “Economics of Tradable Credits for Rice Straw Burning,” by Marc Carey, Daniel Sumner and Richard Howitt, the UCD economists point out: “Imposition of the rice straw burning restrictions...has increased not only the expected cost of straw disposal for most grow-

ers, but also the variation in straw disposal costs among growers...Cost savings are potentially available when growers who face different disposal costs buy and sell burn credits with each other.” The variation in costs from farm to farm arises from differing decomposition techniques, differing yield losses to rice diseases, differing soil types and even differences in grower expertise.

In addition to estimating the overall costs of the phasedown program, the research project asked:

- What have been the cost savings of burn credit trading for the rice industry so far?
- Assuming that burning for disease control will be allowed on 25% of the planted acreage after the phasedown period, how much cost savings could be gained by the continued trading of burn credits?
- Would additional reduction in burning be achieved by continuing the burn credit market at the same aggregate cost to the industry as a 25% burned-acreage maximum without trading?

In their economic model, the researchers estimate costs under two scenarios—no trading allowed and an observed level of trad-

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ing that is based on actual air quality district data. Straw decomposition costs, farm shares and other inputs to the model were based on 1997 data from a grower survey administered by the authors.

The model indicates that:

- Total Valley-wide costs of rice straw disposal from 1992 through 1998 under the observed trading scenario are about \$28.8 million. Without trading, costs would have been about \$33.7 million.
- Savings from burn credit trading increased as restrictions on burning tightened over the seven-year period. In 1998, the model estimated that burn credit trading at the observed level resulted in a cost savings for the industry of roughly \$900 thousand.
- Assuming the continuation of observed trading levels, the indefinite extension of burn credit trading after the phasedown would be worth \$22 million to the Valley rice industry. (The present value of the annual cost savings was calculated at a 4% discount rate.) Besides the savings resulting from the trading itself, permitting the market to determine who burns how much acreage would save administrative costs.
- For the same cost to the industry as a 75% phasedown of planted acres without the burn credit market, a phasedown of about 82% of planted acreage could be achieved with trading. ■

Carey finishes his Ph.D. in UC Davis Department of Agricultural and Resource Economics this winter and is now an economic consultant in Denver, Colorado. Sumner and Howitt are professors of agricultural economics at UC Davis, and Sumner is AIC director. *AIC Issues Brief No. 12*, "Economics of Tradable Credits for Rice Straw Burning" will be available shortly from the Center.

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First Step in Saving Regional Farmland

In some parts of California, agriculture and open space still provide immense economic, environmental, and quality of life benefits even in the face of an expanding metropolis. In these areas, maintaining farmland pays off for both city people and their rural neighbors. The six counties of the lower Sacramento Valley (El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba) are one of these crucial regions.

A coalition of business, agricultural and environmental interests (the Green Valley Initiative) is studying alternatives for open space conservation in the Sacramento region, and the first step in the process is to understand the forces shaping local agriculture. With this in mind, the Center provided background information for a joint workshop at UC Davis in February organized by Associate AIC Director Al Sokolow. Results will be published under the title “Agriculture in the Sacramento Region: Commodities, Farm Value, Markets, Land, Policies.”

The publication, still in the editing/review process, briefly summarizes the workshop and provides detailed background information on:

- Commodities and farm production values in the Sacramento region.
- Farm commodity export markets.
- Farmland and land use trends in the region, including maps.
- Farmland protection policies.

Among the points made by speakers at the workshop:

“We must treat this as a long-run quality of life issue, rather than just holding open space for future urbanization.”—Gail Ervin, co-chair, Green Valley Initiative.

“I think most owners of our best farming soils don’t link their land with today’s market values. They are looking forward to values 100 years from

now.”—Dave Scheuring, walnut grower and president of Yolo Land Trust.

“In the Sierra foothill counties, most new urban development is coming on non-irrigated grain land, grazing land and other low-density rural acreage...in Yolo County, urban growth is taking place on some of California’s best quality farmland...”—Greg Poseley, Farmland Mapping and Monitoring Program, California Department of Conservation.

“One way to deal with both public and private interests is to reframe agriculture as another form of environmental management. If environmental outcomes are viewed as commodities, we could find a way to attach a public value, and buy those outcomes. This would allow farmers to contribute permanent or semi-permanent open space.”—Al Medvitz, Solano County sheep and dryland farmer.

AIC Reports at AAAS

AIC work was featured in two sessions of the American Association for the Advancement of Science (AAAS) meeting held in Washington, D.C. in February.

Organic market is growing

Although sales of organic foods still account for only about 1% of total food purchases, they are booming at a rate of 20% yearly. About 10% of consumers now regularly buy organic food, and the potential market is half of all consumers, according to a paper delivered by Karen Klonsky, UC Davis Department of Agricultural and Resource Economics. The market’s rapid growth rate reflects food safety and environmental concerns by consumers. Future growth of organic sales and numbers of commodities marketed, Klonsky said, will depend on regulation and consumer acceptance as well as the entry of mainstream producers, manufacturers and retailers into the organic market. The AIC will update data on California’s organic agriculture industry to 1998,

in a forthcoming publication by Klonsky. Still available from AIC is her previous “Statistical Review of California’s Organic Agriculture, 1992-95.”

Keys to ending global hunger

Increased global productivity, open markets and economic growth seem to be essential to end hunger among the world’s poorest populations, AIC Director Daniel Sumner said in concluding a panel at the AAAS conference. Seven panelists, including Associate Professor Scott Rozelle, also of Agricultural and Resource Economics, UC Davis, took part in the panel titled “Food Security: The Contributions of International Trade and Policy.” The economists and agricultural scientists discussed (1) whether international market forces can protect resources and increase productivity to meet future global food needs and (2) whether policy-makers should be concerned with the potential conflict between national and global food security. Sumner and Professor Shu Geng, Agronomy and Range Science, UC Davis, organized the panel. Rozelle’s talk was based in part on work presented at the AIC cosponsored China trade symposium held last summer. (See draft research papers on the AIC website.) ■

Ag Labor Meeting is Slated May 4

The third annual Agricultural Labor and Employment Summit will be held Thursday, May 4, 8:00 a.m. to noon in the Garden Ball Room, Harris Ranch, I-5 and 198, Coalinga.

Speakers will be attorneys Michael Saqui and Mark Hanna; Ray Madrigal of the CHP’s SAFE Program; Gil Molina, U.S. Wage Hour Officer; and George Daniels of Farm Employers Labor Service (FELS). Among other topics, they will discuss (1) the Social Security mismatch dilemma, (2) farmworker transportation liability and new rules, and (3) changes in overtime, sick leave administration and new hire reporting. Sponsoring organizations are the CSU Fresno Center for

Ag Business; AgSafe; the law firm Barsamian, Saqui and Moody; FELS; and the UC Agricultural Personnel Management Program.

To pre-register, send name(s), firm/organization, address, and phone number to CSUF Center for Ag Business, 2910 E. Barstow Ave., M/S OF115, Fresno, CA 93740-8009. The fee for sponsoring members is \$30, payable to “CSUF Foundation.” Registration after April 28 is \$5 more. For information, call (559) 278-4405. ■

E-Commerce Poses Challenge to Ag

A new generation of entrepreneurs is driving agriculture and agribusiness into the uncharted rapids of e-commerce. Like white-water rafting, this new development is exciting but not entirely under control, rewarding for those who stay on board, and a problem for those who can’t hold on. But e-commerce is not a spectator sport and farmers and agribusinesses may not have the option to sit on the side and watch.

Rolf A.E. Mueller, professor at the University of Kiel, Germany, who is an AIC collaborator on issues of the Internet and agriculture, reports on a forum: “E-Commerce: The Net Effect on Agribusiness.” Organized in February by Iowa State University’s Center of Agricultural and Rural Development, the forum addressed key questions about emerging e-commerce: What are the impacts on the structures of firms and of agriculture itself? Who is capturing the value? What are the implications for agriculture, agribusiness and for rural America? Those are questions that we also are addressing at AIC.

Here are highlights of presentations by speakers from industry and from academia at Iowa State. (For details, visit <http://www.agforum.org/home.html>.)

- Agriculture fits many of the requirements for business-to-business e-commerce, but speed and flexibility are decisive. New market places for farmers and agribusiness com-

panies have been created on the Internet, and some already report sizable turnover and patronage. These agricultural dot-com firms are evidence that e-commerce does not drive all middlemen out of business, but it does loosen long-established relationships between buyers and sellers—and customer retention is a key to success.

- The new economy is not friction-free, but it provides entrepreneurs with new opportunities for smoothing out e-commerce markets. (One nonprofit firm develops and promotes common standards to facilitate e-commerce in agriculture.) However, e-commerce will need fewer intermediaries. Industry representatives agreed that only a small number of players will survive the shakeout that is bound to follow the current rush of new entrants into the agricultural e-commerce industry.
- From the viewpoint of rural sociology, there is concern that e-commerce will accentuate the rural-urban divide and that the rural poor and unskilled, in particular, will be left behind. Speakers warned that e-commerce reduces business opportunities in rural America, as farmers take their business away from local companies. ▣

Publication on Exotic Pests and Diseases Now Available


With global marketing and the World Trade Organization (WTO) remaining in the news as crucial public policy issues, one associated regulatory dilemma is particularly important in California: How can this state continue to play a leading role in world-wide trade and travel and simultaneously guard against foreign pests, and plant and animal diseases?

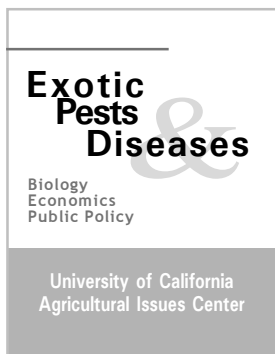
That problem is one of those addressed by the Center publication *Exotic Pests and Diseases*:

Biology, Economics, Public Policy, which is now off the press. An output of the Center's major project of the same name, the 252-page summary report of a conference held last May, is primarily concerned with biological and economic aspects of current and potential invasive threats. However, it also provides the viewpoints of closely involved regulatory officials such as Richard Rominger, deputy secretary of the USDA, and Isi Siddiqui, trade advisor to the U.S. secretary of agriculture.

Two historic changes have re-shaped the outlook for California's world-renowned state/federal programs that intercept, eradicate or control invading pests and diseases. These changes are old news to frustrated regulators, but not widely enough appreciated by agricultural industry and the public:

- The threat of exotic pests and plant and animal diseases has radically increased in recent decades. The challenge, regulators point out, is today's enormous increase in travel and in international trade, both legitimate and contraband.
- The rules have been changed—in effect, globalized. No longer are WTO members free to arbitrarily restrict imports of suspect products. After GATT's Uruguay Round in 1994, the WTO has required that member countries treat all trading partners equally and the same as domestic producers.

In the concluding chapter of *Exotic Pests and Diseases* titled "Major Policy Issues and Questions: Perspectives," Siddiqui is quoted: "There's a requirement under WTO which you have to comply with; you can't just say we don't have this pest and so we don't want these agricultural imports. You have to do the risk assessment and all the required analyses. Even if the answer is to not allow certain agricultural commodities to come in, you still have to reach that decision by a thoughtful and legal process. We simply cannot continue doing business as we did before 1994." 



Exotic Pests and Diseases: Biology, Economics, Public Policy is available from the Center for \$20. A companion 13-minute video is also available for \$15. The book and video package is \$30; all prices include tax and postage. ■

AIC Events of Note

- For only the second time in recent years, on March 7 agricultural scientists from North Korea visited the UC Davis campus. The six visitors had been invited to the San Joaquin Valley as a humanitarian gesture by Kern County farmer Howard Yu, and requested a meeting with UC entomologists and plant breeders. The

AIC made campus arrangements and hosted the group of visiting scientists and Valley growers at a dinner meeting, at which Director Dan Sumner gave a talk on the interaction between agricultural science and economics.

- At a luncheon and symposium on March 2, Nobel prize-winning economist Gary S. Becker of the University of Chicago talked on the relationship throughout the world between social status and distribution of income.
- About 100 scientists, students and others attended a luncheon on February 4 at which Per Pinstrup-Andersen, director of the International Food Policy Research Institute, highlighted the role of agricultural research in dealing with problems of food and income distribution in less developed nations. Advances in biotechnology and other disciplines will be crucial in combating world hunger over the long run, Pinstrup-Andersen said. ■

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