

Irrigation plays major role in worldwide food production

By Dennis Pollock

Irrigation will prove vital to feeding the world's population in the decades ahead.

That probably does not come as a bulletin to most growers, but it could be an important bit of realization for others, said Michael Dowgert, agriculture market manager with Fresno-based Netafim USA.

Dowgert spoke on "Feeding the World in 2050: Irrigation and Crop Management" at the 2010 Water Technology Conference in Clovis.

The event, presented by Fresno State University's International Center for Water Technology, drew more than 300 researchers, farmers and water industry professionals.

Dowgert, at the outset, acknowledged that his message was different from others presented by several specialists in agricultural irrigation in that he did not promote a particular form of irrigation or associated technology.

Instead, he looked at the broad spectrum of irrigation with whatever form, and its role in helping feed a world population expected to grow by 2.4 billion people to reach a total of 9.2 billion by 2050.

"We will have to double our food production by 2050," he said, "By that time, it's expected there will be just eight countries that will be net exporters of food."

Dowgert said that worldwide, 40 percent of the world's food supply is grown on just 20 percent of farmed acreage. And irrigated crop yields are 2.3 times that of non-irrigated yields.

Dowgert rattled off several benefits of irrigated agriculture, including the reduction of drought-induced crop failure and famine, positive effects on the environment and greater farming efficiency.



"It reduces farmers' risk," he said, meaning sustained survival and consistency in production that would otherwise not be the case.

That reduced risk also means less credit risk, Dowgert said, and that increases land values, which could mean less loss of agricultural lands.

Dowgert cited significant differences in corn yields on irrigated land in Nebraska when compared to non-irrigated land in Illinois.

"Irrigation stabilizes yields," he said, adding that even when improved varieties are used, there is still a difference when irrigation comes into play.

Some forms of irrigation can result in minimum tillage that helps crops sequester more carbon, Dowgert said.

"And irrigation leads to better nitrogen fertilizer utilization and less nitrous oxide emission," he said.

The program also included some tips on getting the best out of whatever form of irrigation is used.

Kaomine Vang, a project manager with the Center for Irrigation Technology at Fresno State, talked of a Web-based irrigation scheduling program available free and using a range of watering systems.

“It’s based on long term average weather patterns and average crop coefficients,” he said.

The Wateright system was developed by the Center for Irrigation Technology with support from the U.S. Bureau of Reclamation and the California Department of Water Resources.

A wealth of information on irrigation for the homeowner, agriculture and commercial turf can be found at www.wateright.org.

Vang said the website includes a tutorial on topics

that include water management, furrow irrigation and sprinkler and micro-irrigation.

Users can plug in data on their specific crops, their form of irrigation and soil type that will help them develop an irrigation model tailored specifically to their farm.

Vang explained that key providers of data for the system include CIMIS, the California Irrigation Management Information System. There are 120 automated weather stations in the state developed by the California Department of Water Resources and the University of California.

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