CALIFORNIA ROUNDTABLE ON WATER AND FOOD SUPPLY

Presentation by Katy Mamen, Program Director,
Ag Innovations Network

The Sustainable Water Resources Roundtable

Ag Innovations Network

non-profit organization focused on convening and facilitating dialogues to build democratic food and agriculture systems

- Flagship projects: Food System Alliances, Statewide

California Roundtable on Water and Food Supply (CRWFS)

- Launched in 2010
- Consensus-based process
- Objectives:
  - Build relationships between agriculture and other key stakeholders
  - Generate common principles and recommendations for decision-makers and the public

ROUNDTABLE RATIONALE

- We can help “unstick” thorny public issues by working together to surface and promote common interests.

- Roundtable concept: create process wherein creativity and wisdom can flourish and lead to new thinking and strong new paths forward for water management.

- Roundtable as space where select group of thoughtful and committed leaders can engage in facilitated, off-the-record process, bringing individual perspective and deep experience to the

Membership

25 leaders from specialty crop agriculture, water supply management, state and federal government, fish and wildlife, natural resources, stewardship, environmental justice, rural economic development, and academia. 5-member steering committee

Agricultural Water Stewardship Framework

- Agricultural water stewardship is the use of water in a manner that **optimizes agricultural water use while addressing the co-benefits** of water for food production, the environment, and human health.

- **Effective water policy must be rooted in the local**

- **Embraces full spectrum of approaches**, from high-tech to cultural and agro-ecological practices.

- **Outcomes:** Increased resilience of farm operations to irregularities in water supply; provision of ecosystem services;

Agricultural Water Stewardship Recommendations

- Recommendations

Themes

- Building a stronger knowledge base
- Improving support mechanisms for growers
- Moving regulatory frameworks toward outcome-based models that foster agricultural

Current Roundtable Activities

- Dialogue: Water storage through an agricultural water stewardship lens
- CAWSI Agricultural Water Stewardship Resource Center

- Communications effort to raise awareness about approaches to agricultural water management that support the viability of agriculture, conserve water, and protect ecological integrity in California.

- Online clearinghouse

  - On-farm practices

  - Interactive case studies database

  - Resource Library

Interactive Database of Case Studies

- 32 case studies searchable by location, irrigation method, production type, water management practice, and other features

- Additional case studies invited; to be added over time

- Practices: benchmarking, management innovation, irrigation scheduling, groundwater recharge, water recycling, soil

aginnovations.org/Roundtables/CRWFS

agwaterstewards.org
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STEWARDSHIP INDEX FOR SPECIALTY CROPS

Presentation to the Sustainable Water Resources Roundtable

December 7, 2011

Presented by Katy Mamen on behalf of
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Stewardship Index Overview

Purpose

Develop a metrics-based system for benchmarking, comparing and improving sustainable performance in the specialty crop supply chain.

Scope

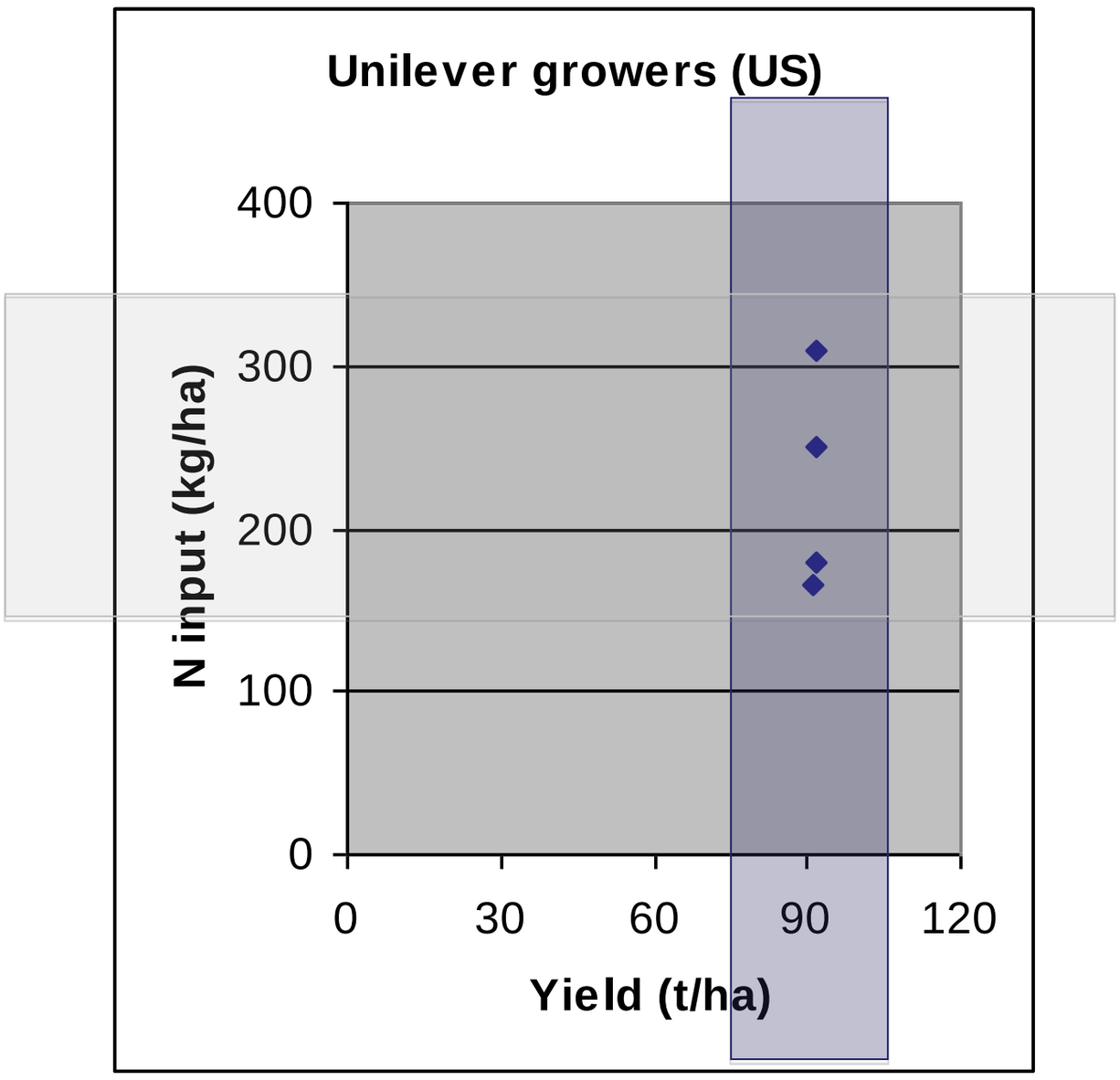
Farm → Distribution → Processing → Retail/Food service
People, Planet, Profit
U.S. Only

Initial Phase

Develop and pilot test metrics through a transparent, multi-stakeholder process

Benchmarking

Borrowing a Unilever Idea



"We compared our key growers' nitrogen fertilization rates and found that application rates could differ by almost 200%."


Sustainable Agriculture Good Story 34

USA tomatoes

LESS IS MORE
Reducing fertiliser use

Unilever California Tomatoes
Nutrients mean plant growth
Nutrient inputs are vital for all crops. Fertilization and crop demand must be in balance. Nutrients are lost at harvest, by leaching, erosion and emissions to air. Sustainable practices can enhance nutrient efficiency and reduce losses.

Nitrogen losses to the environment are a key environmental issue – the Gulf of Mexico 'Deadzone' is a prime example of an unintended consequence through excessive use of fertilisers in the Mississippi basin causing the loss of marine life in the Gulf. (WRI report 2006)

Benchmarking our Californian growers
In 2003 we compared our key growers' nitrogen fertilization rates and found that application rates could differ by almost 200%. The largest nitrogen fertilizer input for processing tomatoes occurs at side dressing when plants are 4 to 6 inches tall.

A common held belief is that the more nitrogen applied the higher the yield – this however is not totally true, as excesses are lost to the environment. Much of the nitrogen needed by tomato crops is 'free' – either from a previous crop in the rotation, the atmosphere, or by nutrient producing bacteria in the soil. The trick is to know how much 'free' nitrogen exists already, and to balance any additional crop needs with synthetic fertilisers.

Knowing how much Nitrogen to apply
Since 2004 we have been working with a number of our growers to optimise nitrogen usage by tomatoes. One of the techniques we have applied is a pre-side dressing nitrogen soil test for nitrogen levels (PSNT).

On the basis of this soil test, nitrogen applications to tomato seedlings are adjusted to exactly what the plant needs taking in to consideration the 'free' nitrogen in the soil.

Good for the environment and the farmers pocket
So far results indicate that nitrogen reductions of up to 50% can be achieved, without damaging the yield. Not only is this reduction good for the environment, but it also means farmers save money by applying less fertiliser – a great win/win for all.

We continue to work with all of our growers – spreading these farmer derived results to them all.

PSNT application

Work in partnership with:
- UC Davis Extension network
- Muller brothers farm

For more information please contact:
good.stories@unilever.com

The tomatoes in this story can be found in:

Stewardship Index Coordinating Council

Growers

Community Alliance with Family Farmers ● Jacobs Farm / DelCabo ● Farm Fresh Direct ● Georgia Fruit and Vegetable Association ● National Potato Council ● Torrey Farms ● United Fresh Produce Association ● Washington Horticulture Association ● Western Growers

Buyers

California League of Food Processors ● California Sustainable Winegrowing Alliance ● Compass Group ● Del Monte ● Food Marketing Institute ● Heinz ● Markon Cooperative ● Produce Marketing Association ● Sodexo ● SYSCO ● Unilever ● Wal-Mart ● Wegmans

NGOs & Experts

American Farmland Trust ● Defenders of Wildlife ● Environmental Defense Fund ● NRDC ● The Organic Center ● SureHarvest ● Sustainable Food Lab ● University of Arkansas ● World Wildlife Fund

SISC Metric Calculator (Beta Version 1.0)

Water Use	Soil	Energy
•Acre inches applied / ton harvested •Acre inches applied / Crop ETc	Soil organic matter/ Soil organic matter potential	Total BtU/ ton harvested

Nutrients
Pounds of N and P / ton harvested

Beta Metric Calculator- Highlights

- Excel calculator
- Data input and results
- Includes energy allocation and ETc calculators
- Up to 10 management areas
- Drop down menu-driven
- Boundary, scope, timeframe and unit issue-specific
- Automatic, step-by-step instructions
- Results displayed by ton harvested and by acre planted

Water Use Metric (Beta 2011)

Component 1: Water use efficiency = total amount of water used to produce the crop

- Acre-inches applied water / ton harvested or acre planted

Approved methods for measuring water:

- Irrigation District Reporting
- Closed Conduit Measuring Devices
- Standard Open Channel Measuring Devices
- Alternative to Direct Measurement: Power Records

Water Use Metric (Beta 2011)

Component 2: Simple irrigation efficiency

- Acre-inches applied water / Etc

Where:

- Applied water = irrigation water applied by grower
- ETc = crop water demand resulting from transpiration and evaporation

- Spreadsheet-based calculator developed with team of experts that calculates Etc for the growing season using the method published in the FAO Irrigation and Drainage paper No. 56.

Water Use Metric (Beta 2011)

Data requirements for ETc Calculator:

Date of planting or pre-irrigation and harvest

Soil type

Kc and growth stage value from a drop down menu

Daily ETo data from a nearby weather station for the period between the dates specified above

An estimate of the number of rain and irrigation events during the Initial growth stage

Estimated average precipitation and irrigation applied during each of these wetting events.

Average wind speed and relative humidity during the mid-season for the cropping region

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