University of Nebraska - Lincoln DigitalCommons@University of Nebraska - Lincoln

Agricultural Research Magazine

USDA Agricultural Research Service --Lincoln, Nebraska

1-1-2012

Agricultural Research Magazine January 2012

Follow this and additional works at: http://digitalcommons.unl.edu/usdaagresmag

Part of the Agriculture Commons, Animal Sciences Commons, Food Science Commons, and the

Plant Sciences Commons

This Article is brought to you for free and open access by the USDA Agricultural Research Service --Lincoln, Nebraska at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Agricultural Research Magazine by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

[&]quot;Agricultural Research Magazine January 2012" (2012). Agricultural Research Magazine. Paper 107. http://digitalcommons.unl.edu/usdaagresmag/107

January 2012 Vol. 60, No. 1 ISSN 0002-161X

Agricultural Research

Solving Problems for the Growing World

Agricultural Research is published 10 times a year by the Agricultural Research Service, U.S. Department of Agriculture (USDA). The Secretary of Agriculture has determined that this periodical is necessary in the transaction of public business required by law.

Tom Vilsack, Secretary U.S. Department of Agriculture

Catherine E. Woteki, Under Secretary Research, Education, and Economics

Edward B. Knipling, Administrator Agricultural Research Service

Sandy Miller Hays, Director Information Staff

Editor: Robert Sowers (301) 504-1651 (301) 504-1623 Associate Editor: Sue Kendall (301) 504-1669 Art Director: BA Allen Photo Editor: Anita Daniels (301) 504-1609

Staff Photographers:

(301) 504-1620 Peggy Greb (301) 504-1607 Stephen Ausmus

Most information in this magazine is public property and may be reprinted without permission (except where copyright is noted). Non-copyrighted articles and highresolution digital photos are available at ars.usda.gov/ar.

Paid subscriptions are available from the U.S. Government Printing Office (Superintendent of Documents). See back cover for ordering information. Complimentary 1-year subscriptions are available directly from ARS to public libraries, schools, USDA employees, and the news media. Call (301) 504-1638 or e-mail armag@ars.usda.gov.

This magazine may report research involving pesticides. It does not contain recommendations for their use, nor does it imply that uses discussed herein have been registered. All uses of pesticides must be registered by appropriate state and/or federal agencies before they can be recommended.

Reference to any commercial product or service is made with the understanding that no discrimination is intended and no endorsement by USDA is implied.

The USDA prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.



Plant pathologist Carl Strausbaugh evaluates a fungal culture of Rhizoctonia solani. Story begins on page 18.

Agricultural Sciences Center in Parlier, California. Story begins on page 12. Photo by

- 4 Corn Defenses Probed for **New Pest-Fighting Clues**
- **7** Comparing Light-Conversion Efficiency of Plants and Manmade Solar Cells
- 8 Building Baby's Tiny Bones: Formulas and Mother's Milk Analyzed in Animal Study
- **10** Recognizing the Threat of Leptospirosis
- 12 Using Cactus as a **Bioremediation Tool**

Stephen Ausmus. (D2351-16)

- **14** ARS Scientists Rally 'Round the Range
- 17 There's a New Biofuel Crop in Town
- **18** A Search for the Sweet Spot in Sugar Beet Production
- 20 Nutrient Data in Time for the New Year
- **22** A Rough, Tough Forage for Rangeland Cattle
- 23 Locations Featured in This Magazine Issue

Cover: ARS plant/soil scientist Gary Bañuelos and horticulturist Gabriella Romano survey fruit on prickly pear cacti, Opuntia ficus-indica, at the ARS San Joaquin Valley