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18th INTERNATIONAL PEPPER CONFERENCE

It's the place for information and networking for all pepper producers and researchers.
May 21-23 2006. Renaissance Esmeralda Resort and Spa. Palm Springs, California

Why Attend**.** Take advantage of this exciting opportunity for growers, industry, processors, and scientists to make new business relationships, meet specialists in the different fields, and have access to the latest technology, products and services. You'll leave with an increased knowledge of recent advances in all areas of our industry If you have an interest in peppers you cannot afford to miss this conference.
Experience an unsurpassed opportunity for networking and the multi-disciplinary sharing and exchange of the latest scientific and practical information related to pepper breeding, production and processing.
And the venue- the fabulous Renaissance Esmeralda in Palm Springs - really spices up the deal. Whether it's a solo retreat or a

family getaway, there is something luxurious and relaxing to experience at this first class resort.

TOPICS

Breeding and Genetics - Germplasm evaluation and utilization, crop physiology and technology

Horticultural Management and Production - Production methods, cultural systems and sustainable approaches

Integrated Pest Management - Insect and disease management, biological control

Post Harvest Issues - Post harvest physiology and technology, economics, marketing and trade

Overview of Pepper Production Throughout The World

Brief summaries of the pepper crop in areas around the US and the world: Florida and the Southeast, California and the Western Pacific, Northeast and Midwest US, Mexico and Central America, Southwest US, Europe, Asia and Africa, South America.

An Update on Biotechnology in Peppers. Reports on Research Funded by the California Pepper Commission. Pepper culture and production session. Breeding, genetics, and biotechnology session

Field Tour

This full day tour is an outstanding, hands-on opportunity to learn more about peppers, the agriculture, and the area. Get on board and we'll make multiple stops for a close up look and provide a wealth of information you can take with you. Green and colored pepper fields Open fields Shade house and Greenhouse-grown peppers. Large pepper variety trial - includes entries from all the major seed companies, plus university material. Expanded overview of the Coachella Valley agriculture Receiving water - how it is delivered Crops grown in the valley

Registration

Regular Registration March 11 to April 20th - $325

Late Registration and on-site after April 20th - $400
Register online www internationalpepper.com
Conference Coordinator: Aimee Martinez, Phone:310-925-9414, email: aimee@onthetownevents.com

Broadcast Application of Granular Urea for Sidedress? by Robert Mullen and Edward Lentz, From: OSU C.O.R.N Newsletter 2006-04 February 21, 2006 - March 8, 2006 provided by Jim Jasinski

Ammonia is the precursor to all other forms of nitrogen (N), and with the increased cost of natural gas (over 70% of the cost of ammonia production) in the U.S. compared to other countries around the world, it has become more difficult for U.S. ammonia manufacturing facilities to compete on the global market. Over a quarter of the ammonia manufacturing facilities in the U.S. have shut down because of natural gas costs. It is cheaper to import N (primarily urea) from another country where natural gas is much less expensive than to produce it here in the U.S. As we become more reliant on imported sources of N, dry granular products will likely become a more frequent N source than liquid N or anhydrous ammonia because the latter two products are difficult to transport by barge. So if urea becomes our cheapest source (it may already be in certain markets if we consider application costs), what are the specific concerns of using it as a sidedress material?Surface application of granular urea is typically not the most efficient way to supply N to a growing crop. It is usually recommended that urea be incorporated to ensure that N is not lost by volatilization. As urea is broken down by the enzyme urease it becomes ammonia and seeks out water to form the stable N form ammonium. When urea is surface applied, there is very little soil surface area and resultant moisture to react with

ammonia and keep it from floating away as a gas (volatilization). Volatilization loss potential is increased when urea is surface applied to a no-till soil that has a lot of surface residue, and loss potential is increased by high soil pH. This is why surface application of urea is specifically discouraged on no-till production fields and recently limed fields (specifically no-till fields where lime is not incorporated). Incorporation is the key to ensure volatilization losses are minimized, and this does not necessarily mean mechanical incorporation. Rainfall approaching half an inch can adequately incorporate urea and minimize N loss.Polymer coated urea products are another potential dry source of N that can be applied preplant or sidedress. The semi-permeable polymer coating allows for slow release of N that increases as soil temperature increases. The limited amount of University research available shows that for preplant applications this application method can be an attractive alternative in certain high N loss situations, but the fertilizer material does cost more than urea. To see the economic value of these materials usually requires N rates to be lower than rates of standard urea.Editors Note: In general, polymer or sulfur coated materials are not used for vegetables in this part of the country because of the high demand for nitrogen in a short period of time by most vegetables grown in OH

Water, Water Everywhere

by Shari L. Plimpton, Ph.D., Food Safety Educator - Ohio and Indiana Specialty Crop Food Safety Initiative

Water suitable for agricultural uses seems to be hard to come by these days if you read all of the reports out there about water quality for fresh fruits and vegetables. We emphasize waters importance for fresh produce food safety through the GAP (Good Agricultural Practices) program across the country, yet we (those of us who are trying to be helpful) still seem to be generating as much confusion as we are solutions. So in this article I hope to address

some of the questions I am hearing with some new information and a little perspective.
In January of this year, at the Ohio Fruit and Vegetable Growers Congress, we featured Dr. Trevor Suslow, Extension Research Specialist from UCDavis to speak on the topic of Water Quality and Fresh Produce Safety. Those who were able to attend heard him report on research findings that demonstrated both bacterial survival and increasing bacterial numbers at refrigerated temperatures for certain strains of infectious organisms. Clearly, this news underscores the importance of the goal of preventing microbial contamination, since our best efforts to control microbial contamination (washing and refrigeration) are not foolproof (although both are still necessary).

Recommendations published by Dr. Suslow and other researchers, and the continued reporting of foodborne illness are driving large-scale growers to adopt water quality practices that are even more diligent than those we have recommended in the GAPs program. Growers with known contamination issues are testing their water sources for fecal coliform bacteria and E. coli at least twice a month if from open sources and monthly if from closed wells. Dr. Suslow is recommending that growers who have not identified a microbial contamination issue test just as frequently for at least a year before reducing the frequency to once a year for enclosed wells and at least 3 times a season (Midwest) for open water sources.

Treatment of water to be used for agricultural purposes (irrigation, spray) is an important precaution if you hit the action threshold of 1000 fecal coliform bacteria per 100 ml and/or 126 E. coli bacteria per 100 ml. Prior to employing your treatment options, re-test for whatever microorganisms are indicated. If you are testing a well, inspect and make sure there are no opportunities for surface water

to breech the well. Shocking the well with chlorine should address the problem. Retest. With an open water source, it would be necessary to add a filtration system to the water pulling from the source and follow that with an automatic chlorination system, so you can chlorinate the water for sensitive applications. Again, retest.

Using potable water is necessary in the packinghouse to avoid introducing a microbial contamination problem that did not exist coming out of the field or orchard. Since washing does not eliminate microorganisms, the goal in the packinghouse is simply to keep the water clean enough not to cause or increase microbial contamination. Repeatedly, research is showing that the most reliable method for accomplishing this is a chlorination system that is closely monitored maintaining free chlorine levels of 150 to 200 ppm.

Monitoring the free chlorine level and pH of the water on a continuous basis is simply an essential part of the process. Measuring chlorine alone gives you only half of the picture: a half that may mislead you regarding the effectiveness of the sanitation of your water. If the pH is within 6.8 to 7.2, the level of free chlorine that is in the most effective form (hypochlorous acid) is at its highest. Most of our water sources tend to run basic, so acetic acid can be used to bring the pH into range.

And why am I writing about chlorine so much and not other sanitation methods? Because, current research is not showing any other methods to be as effective for the treatment of water under agricultural conditions as is chlorination. If you are using copper ionization, please know that high levels of organic material can render it ineffective. Researchers are recommending that you supplement a copper ionization system with chlorination to improve

disinfection of the water, particularly in packinghouse operations. If you are considering purchasing a copper ionization system ask the dealer to demonstrate its effectiveness in agricultural applications. A system should be able to effectively result in a five-fold reduction of fecal coliform and particularly E. coli. Ultimately, the goal is to minimize the risk and recognize the potential impact of the decisions you make regarding how to manage your water sources.

For more information and links to research articles on this and related topics visit www.midamservices.org and select "Projects" from the left navigation. For free Good Agricultural Practices materials, presentations and food safety consultations contact us on the web site listed above or call Mid American Ag and Hort Services at 624-246-8286 or maahs@ofbf.org. You may also subscribe to a free e-newsletter by going to the web site above and clicking on the "Free Email Mailing List" button. These services are available for Ohio and Indiana producers through the Ohio & Indiana Specialty Crop Food Safety Initiative funded by the United States Department of Agriculture's Risk Management Agency.

Controlling Plant Height in Vegetable Transplant Production

By Bob Precheur. From several sources, see below

Plant Height is equal to the number of nodes and length of each internode. Both are influenced by greenhouse temperature. Node number or formation is a function of the average greenhouse temperature, increasing as the average greenhouse temperature increases. Seedling elongation is most rapid in the early morning. Internode length is influenced by the difference between the day

and night temperature referred to as DIF (Day temp Night Temp = DIF). As DIF increases, so does internode length in most species. Transplant height can primarily be controlled through increased night and reduced day temperature or low temperature pulses at or near the beginning of the day (Negative or Zero DIF). Low temperature pulses can be applied during first 2 to 4 hours of daylight.

Environmental and cultural factors promoting shoot and root growth
Light intensity: Low light promotes shoot growth while high light favors root growth.
Moisture: Overwatering or high moisture favors leggy transplants while low moisture promotes root growth
Nutrition: High NH4 & P promotes shoot growth. High NO3 & Ca promotes root development
Deleterious effects of high nutrient levels: High Nitrogen levels favor shoot growth and can cause an imbalance (decrease) in root/shoot ratios.
Transplants with higher root/shoot ratios (well developed root systems) suffer less transplant shock when field set (Masson et al., 1991)

Mechanical Height Control by Brushing
Results: Reduces plant height; Increases stem and petiole strength; Improves stress tolerance; Enhances stand establishment in the field.
This technique can provide from 20 to >50% height reduction. Ten to 40 brush strokes per day up to 10 minutes per day.

A Practical Guide to Using Mechanical Stimulation to Prevent Stretching in Tomato Transplants. From NY State

Ag. Exp. Sta., Cornell University
Mechanical stimulation is an effective way to make plants grow tougher and preventing excessive stem elongation (stretching). Brushing is the simplest way of treating transplants in the greenhouse. Like everything with plug production, it needs to be done just right to be effective, but it can be a useful tool.
How to brush: Brush across the top of the canopy in long gentle strokes. The best tool depends somewhat on the width of the bench. An unpainted broomstick is good because the leaves don't stick to it. A piece of 3/4 conduit inside a piece of 2 plastic pipe should work for larger benches because the plastic pipe can roll to prevent plant damage. Run the tool about 1/2 to 1 inch below the top of the canopy to lean the plants over gently.

How much to brush: The amount needed varies with the season. In spring, 10 times back and forth, once a day, is about right. In mid-June it takes 20 strokes. More treatment than that can damage the leaves. If you see damage, it is too much!

With a long bench, it can take a while to go to one end and back. That seems not to matter. We had the same effect whether the stokes came continuously or up to 10 minutes apart. The plants remember, and add up, the stimulus over a rather long time.

When to start: Begin treating when the plants are about 2-1/2 inches tall. We have found little benefit is starting earlier, and the chance of damaging the small plants is greater. Starting later is not only ineffective, but the leaves are so big that they tear. If the plants have been treated starting at 3 inches, the leaves are hardened to the treatment and handle it well even when the plants are larger. The first day or two, a lighter treatment is a good idea. You will notice that the plants wilt immediately the first time. They recover quickly and don't wilt when they are used to being brushed. (Dr.

Joyce Latimer in Georgia considers this treatment to condition plants for the field. She does not harden them outside before transplanting.)

When to brush: Brush when the foliage is dry but the plants are not wilted. Mostly, this will be before watering in the morning. We have found similar effectiveness in the morning and afternoon.

Brushing also works well for cucumbers. Begin as soon as the cotyledons open, and brush for the next 5 days. It keeps the hypocotyl about 25% shorter.

References:

Mechanical conditioning for controlling excessive elongation in tomato transplants: sensitivity to dose, frequency and timing of brushing. By Lauren C. Garner and Thomas Bjrkman
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