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WAS - 1998

Plan, now, to slip away from your beekeeping chores for a few days in August and attend the 20th Annual Conference of the Western Apicultural Society. The meeting is scheduled for August 10-13, at the Best Western University Inn and Conference Center in Moscow, Idaho. WAS President, Dr. Steve Sheppard, works just 6 miles down the road in Pullman, Washington, but there were no appropriate conference facilities in Pullman. Besides the usual vendors' exhibits, Steve has already enlisted the following speakers:

"Africanized honey bees in Brazil - 40 years later"--Dr. M. Cristina Arias, University of Sao Paulo, Brazil

"Temperature regulation of the brood nest in Asian honey bees"--Dr. Mike Burgett, Oregon State University

"Swarm biology and colony management"--Dr. Dewey Caron, University of Delaware

"Current status of parasitic mite control"--Dr. Mark Feldlaufer, USDA-ARS Bee Research Laboratory, Beltsville, MD

"Territoriality and competition in honey bees"--Dr. Carl Johansen, Coeur D'Alene, ID

"Research on botanical oils for tracheal mite control"--Ms. Beth Kahkonen, Washington State University

"Repellents as a method to reduce honey bee poisoning"--Dr. Dan Mayer, Washington State University

"Queen management"--Dr. Eric Mussen, University of California

"A year in the life of a commercial beekeeping operation"--Mr. Eric Olson, Yakima, WA

"Importation of honey bee stocks to North America: past, present and future"--Dr. W. Steve Sheppard, Washington State University.

What can you do around the area besides attend the bee meeting? Play golf or tennis. Hike or bike along a long stretch of converted railroad track (now bikeway). Attend one of the evening performances by the Idaho Repertory Theatre. Take a trip to the Treaty Grounds brew pub. Take in a movie at the multiplex cinema, or shop 'til you drop at the Palouse

shopping mall (you can walk to it). A little further away you can jet boat and picnic in Hell's Canyon; take a riverboat excursion on the Snake River; collect garnets in the Emerald Creek garnet area; or hike to the top of Kamiak Butte for a spectacular view of the Palouse Hills.

Expenses always matter. Rooms will be \$85 double, \$72 single including a full, not continental, breakfast buffet. Preregistration is \$40 per person. Registration at the door is \$50 for the meeting or \$20 per person per day. Monday social is \$7.50 per person; BBQ is \$18 per person and banquet is \$20 per person.

All room and registration arrangements are being handled by WAS treasurer Ron Neese, 268 Pearl Way, Woodland, CA 95695. Ron can be reached at (530) 666-4053 for further information or preregistration forms.

Apple Thinning

If you are wondering about the use of carbaryl (Sevin®) in apple thinning, here is the information provided to apple growers by our Extension Pomologists and Farm Advisors for apple production in the San Joaquin Valley.

Suggestions for Chemical Thinning Granny Smith, Fuji, and Gala Apples in San Joaquin Valley.

There is a certain amount of both art and science involved in successful use of chemical thinners on apples. This is mainly due to the many factors that can influence the response

of trees to applied chemicals. These include (but are not limited to):

Weather before application - Cool, wet conditions may precondition leaves for greater absorption of thinning agents, leading to increased activity.

Weather during/after application - Cool, wet or humid weather

prolongs drying, giving greater activity. High temperatures following application, particularly if they follow cool periods, can cause mild tree stress and tend to increase thinning activity of some chemicals.

Tree Condition - Stress from any source (low nitrogen, lack of water, root damage, heavy crop in previous year, shading within canopy, etc.) may increase thinning response to applied chemicals.

Tree Vigor - Young, excessively vigorous trees are easier to thin than older, moderately vigorous trees.

Natural post-bloom drop - Over-thinning may occur when natural post-bloom fruit drop is heavy, particularly on Gala and Granny Smith.

The rates and timing discussed are those which have given the most acceptable and consistent

results in field trials to date. They are provided merely as suggested guidelines for growers who wish to begin accumulating experience in using chemical thinning as a management tool.

Careful timing of spray application is important if predictable and acceptable results are to be expected.

Rates given pertain to dilute applications only (200-400 gallons/acre). We do not have field experience with applications below 200 gallons/acre, and cannot suggest their use at this time. Reports from other areas have indicated that concentrate applications yield less consistent results than dilute application. To prevent over-thinning in the lower portion of tree canopies, it may be helpful to adjust the spray pattern so as to reduce the volume of solution applied to this area.

Warning: In mixed variety blocks, take precautions to prevent drift of applied chemical thinners to non-target varieties. Spray drift from applications made to hard-to-thin varieties such as Fuji are likely to over-thin Gala and Granny Smith.

GRANNY SMITH

The best and most consistent results to date have been achieved using a single application of **Sevin XLR Plus⁰** (carbaryl) at 0.75-2.0 pound active ingredient per acre, applied when the largest fruit are 10 to 15 mm (3/8" to 9/16") in diameter.

When bloom is moderate or environmental conditions are favorable for thinning, use the lower rate (0.75 lb a.i./acre) within the range specified. Use the higher rate where bloom is heavy or environmental conditions are less favorable for thinning.

GALA

The best thinning of Gala has been achieved with a single **petal fall** application of **Sevin XLR Plus⁰** at 1.5-2.0 lb a.i./acre + **Amid-thin W⁰** at 25 ppm.

Equally effective but less consistent thinning has been obtained with applications of **Sevin XLR Plus⁰** (at 2.0-3.0 lb a.i./acre) at both petal fall and 10-15 mm largest fruit diameter. Use lower rates within the ranges shown where bloom is moderate or environmental conditions are favorable for thinning. Use the higher rates where bloom is heavy or environmental conditions are less favorable for thinning. Follow-up hand thinning is usually required following these treatments.

FUJI

Of the three varieties discussed here, Fuji is the most difficult to thin with chemicals. The best and most consistent experimental results have been obtained by the following combination treatment:

Sevin XLR Plus⁰ (at 3.0 lb a.i./acre + **Amid-thin W⁰** ((50 ppm)) at **petal fall**, followed by **Sevin XLR Plus⁰** (3.0 lb a.i./acre) when largest fruit are 10-15 mm in diameter.

This combination has not provided complete thinning of Fuji. Follow-up hand thinning is usually necessary.

Note: When used at the rates suggested above, carbaryl is toxic to honeybees if applied to bees during daytime while they are active in the orchard. Remove colonies from the orchard before spraying, or spray at night to prevent direct application to foraging bees. Once spray deposits are dry, the XLR Plus[®] and 4F formulations are less likely to be carried back to hives by foraging workers than other formulations.

Melon Production

Imperial County Farm Advisors, Keith Mayberry and Eric Natwick, published information about melon production that should be useful throughout the state. The information comes from the May, 1997, issue of Imperial County Cooperative Extension Ag Briefs.

Eight Melon Production Myths--Muskmelons (i.e. cantaloupe, honeydew, Persian, casaba) are very closely related botanically even though they look substantially different. This difference may be compared to dogs (i.e. a Chihuahua vs. an English sheep-dog); different appearance but the same genus and species. In general, cultural practices used for one type of melon often apply to all the others. Similarly this group is affected by the same kinds of environmental stress, the same insects and the same plant pathogens.

There are a number of misconceptions that arise when one is

unfamiliar with muskmelon production, such as poor fruit set and the irrigation timing. The following is a list of true or false questions dealing with melon culture.

1. **True or False?** Melons will set fruit continuously as long as bees are present. **False.** Fruit setting is regulated by temperature, as well as a chemical signal produced on the runner which causes newly forming bisexual (female) flowers to abort no matter how many bee visits the flower received. Once the runner branches, then fruit set will occur once again.

2. **True or False:** Bad pollination is often due to successive windy days. **True.** Bees have a hard time flying in the wind, especially carrying loads of pollen and nectar. Bee activity on a windy day is often confined to working close to the ground and near the hives. If winds are prolonged, a reduction in the quantity of fruit set will occur. Studies have shown that approximately 15 bee visits are required per flower to get good pollination. In addition, the flowers are only open for one day and if not pollinated they abort.

3. **True or False?** Finding a large number of withered female blossoms is a sign the melon crop will be poor. **False.** A melon plant produces perhaps 100 or more female blossoms which each could potentially become a fruit. Male blossoms are produced in numbers ten times higher than female flowers. Perhaps a melon plant will set 5-10 fruit. Of those that set and develop normally, harvesting 1 to 1-1/2

fruit per foot of bed will produce a high yield.

4. **True or False?** Frequent irrigation causes fruit rot and vine collapse. **Partially True.** While wet soil is not the cause of many types of fruit rots (e.g. *Fusarium roseum*), moist soil is conducive to the growth of the rotting organisms where the fruit contacts the soil. Similarly with many root rotting fungi, wet soils enhances fungal activity.

5. **True or False?** Both watermelons and cantaloupes should be farmed on the dry side. **False.** Watermelons are a completely different species than muskmelons. Watermelons respond favorably to very moist soils and should not be stressed for water. Cantaloupes, however, may take longer periods of moisture stress without any significant damage. In fact, irrigation studies have shown cantaloupes grown with three irrigations will be earlier, slightly smaller and have more sugar than those with more irrigations. On the other extreme, melons grown with eight irrigations were larger, later maturing, had lower sugar, developed more stem cracks and had softer flesh. Given the condition of the dry and wet treatments, 5-6 irrigations was a good compromise. This is dependent, however, upon soil texture and climatic conditions.

6. **True or False?** Cantaloupes will not get any sweeter after harvest. **True.** While there will be a softening of the flesh, the melon will not develop any more sugar after harvest.

7. **True or False?** Muskmelons will tolerate dusting sulfur for mildew and mite control.

Partially true. Most muskmelons used in the low desert are sulfur resistant varieties, however, there are a few which are sulfur sensitive. When in doubt, check with the seed company representative.

8. **True or False?** Once the net has developed and hardened on cantaloupe, there are no insects that damage fruit. **False.** The darkling ground beetle may attack the fruit in contact with the soil and bore into the flesh causing both cosmetic damage and providing a site for fruit rots.

Motor Carrier Permit

In case you haven't heard, here is a tidbit of information passed along in this spring's issue of the Delta Bee Club newsletter.

Motor carrier Permit Update-- Officer Jim Howarth of the CHP spoke to us in February about the 1998 motor carrier permits required for all trucks, heavy one-tons and up. If you run one or more trucks manufactured with a GVWR of 10,001 pounds or more (as shown on the door jamb plate), the new law says you need a CA number on the side of your truck, pay an annual fee of \$35 to the DMV, and carry \$750,000 liability insurance. Standard one-tons are usually exempt at 10,000 GVWR. Super-Duties and above need the permit. It doesn't matter what the truck actually weighs or carries. Call Jim at (209) 545-7456 for details.

Modular Hive

We often say that very little has changed in the world of bee-keeping technology in decades. But, inventors say, every so often, to provide new equipment and techniques. Often the new ideas are not adopted. Are beekeepers adverse to change or are the new ideas of little merit?

Geoff Lomas, a South African commercial beekeeper, has developed the Fixed Frame Honey Harvest Modular Hive technology. Developed to enhance efficiency, the system has the following components:

1. Hive boxes with 13 permanently mounted frames in the "cold weather" position - run right to left as you look at the entrance.

2. Frames are very shallow - full super contains about 26 pounds of honey, or 2 pounds per frame.

3. Combs uncapped by reciprocating blades - whole super is moved over the blades in 20 seconds.

4. Uncapped super slides into vertical extractor through "ports" (doors) in the side of the extractor wall.

5. Nine modules spin in 200 rpm for 5 minutes - it takes 5 minutes to unload and load the next set (this rate of extraction is about 1,100 pounds per hour).

6. Modules can be used for brood production - they hold about 0.6 times as much brood as a deep Langstr. 0th comb.

Unfortunately, Dr. Lomas did not include a mail address on his web site information. For those of you with computer access to the internet Groff can be e-mailed at: geoff-lomas@hotmail.com. For those of

you with web access, Geoff and his equipment can be seen at www.smass.org.za/honeyh/.

II on Video

Susan Cobey and her co-workers have completed a 25 minute, step by step, training video for learning how to instrumentally inseminate a queen honey bee. This training video presents the technique of instrumental insemination in specific detail. It is designed for the beginner as well as the beekeeper who wants to refresh and update his or her technique. The Schley instrument and the Harbo large capacity syringe are used for demonstration purposes. In addition, a review of various types of instruments is presented.

In step by step detail, eversion of the drone, semen collection, positioning the queen, bypassing the valve fold and insertion of semen are explained and demonstrated. Key aspects of each of these topics are reviewed with trouble shooting sections focusing on common problems. Working with stored semen is also featured. To check your technique and success, the video also shows a simple field dissection method of the queen's spermatheca.

To order a copy of Instrumental Insemination of Honey Bee Queens, send a check or money order payable to: The Ohio State University. \$59.95 Post Paid within the US Ohio Residents please add 5.75% sales tax. For international orders please add \$7 for shipping.

Mail to: Susan Cobey
The Ohio State University
Dept. of Entomology, B&Z Rm
103
1735 Neil Ave.

Columbus, OH 43210

The video is available in Spanish, also.

Want to see what else is going on at Ohio State University in

bees? Try their web site: <http://iris.biosci.ohio-state.edu/honeybee/breeding>.

Honey Board Busy

The National Honey Board went on the World Wide Web some time ago with an award winning web site that contained a mix of technical and non-technical information. The information grew too large for a single site, so they started a new one - www.honey.com. The new site contains fun and factual information for consumers on general honey information, cooking and storage tips, recipes (new ones with colored pictures added each month), a kid's section and new consumer recipe brochures.

The original site (ww.nhb.org) will be redesigned to meet the needs of the general honey industry as well as the food-service and food manufacturing industries.

In the coming months, look for redesigned foodservice and food technology sections as well as new sections focusing on import/export issues and honey industry concerns.

"The Honey Board is really committed to Internet communications. Splitting into two Web sites makes finding honey information quicker and easier, something everyone using the Net is looking for," said the National Honey Board's information manager Susan Millsapps.

Both Web sites will be continually refined to meet the needs of both consumers and the honey industry.

The kid's section of the National Honey Board's Honey.com Web site (www.honey.com) has been selected as a "kid-friendly" Web site by the editors of Bonus.com, The Supersite for Kids.

"The mission of Bonus.com is to provide access to a rich selection of entertaining and educational works on the World Wide Web, that educators may use in the classroom and children will learn from and enjoy," according to Lucy Rector, managing editor of Bonus.com.

Honey.com is one of 500 Web sites, which has been reviewed and is presented by Bonus.com.

"It's nice to get a pat on the back from a site that shares our commitment to kids," said Susan Millsapps, information manager for the National Honey Board.

This is the fourth time in the last year the Honey Board's Internet information has been recognized.

Three new recipe leaflets are now available for your next honey promotion: "Good & Golden" (baked goods/desserts), "Health & Hearty" (cooking for two) and "Swift & Savory" ("speed scratch" recipes).

Beekeeping associations and assessment-paying supporters of the National Honey Board can order their choice of up to 500 recipe brochures per year free of charge. Additional brochures are available at 12 cents each. To order brochures, call the National Honey Board at (800) 553-7162. Brochures are also available to download from our new Web site: www.honey.com.

AHBs in the Yucatan

Africanized honey bees (AHBs) invaded the Yucatan Peninsula of southern Mexico about 10 years ago. A few years later there were indications that hybridization was occurring between the AHBs and the resident European honey bees (EHBs). Predictions were that AHBs would become the predominant bee, at levels around 90% or higher, as is the case in Brazil and much of southern Mexico.

But, it didn't happen. Harrington Wells and Ibrahim Cakmak from University of Tulsa joined David Van Valkenburg, from the US Consulate, on a trip to Xcocomil in the state of Yucatan. They stimulated managed colonies and found only two levels of responses - hardly any or a whole lot, not much in between. Thus, the visitors concluded that despite the purported ability of AHBs to eventually eliminate EHBs from tropical regions, at this location only about 14% of the managed colonies responded "aggressively." Therefore, EHB genes had been retained.

Morphological studies on bees from the Yucatan showed increasing change toward AHBs in 1992 and 1993, but between 1993 and 1994 that trend decreased and in one location reversed itself. It appears as though AHBs and EHBs have reached an equilibrium in managed colonies with AHBs at less than 50% in this region.

Interestingly, the feral colonies in the area are much more Africanized than the commercial bees (around 93%, as predicted). The authors conclude that many Africanized bee traits

may be "selectively neutral" or not favored in Yucatan. So, they may not be favored in the more temperate regions of the United States. However, the authors cannot explain why Yucatan bees are like this when Chiapas and Veracruz bees are nearly all (93%) carrying AHB mitochondrial DNA. So, as usual, the data can be interpreted as good news, or bad news, for the United States.

The full text of this article, Alternative honey bee Africanization models for Mexico, is printed in Bee World 78(4):165-170 (1997).

Mexican Bee Meeting

Right on the heels of the Western Apicultural Society Conference the XII American Seminar on Beekeeping and VI Latin-American Congress on Beekeeping will be held together in Merida, Yucatan, Mexico from August 17-21, 1998. More than twelve countries from the American Continent and the Caribbean will be sharing their

advances in technology, research, services, production, commercialization and specialized apicultural equipment.

Also, this year, the meeting will have an international forum on apicultural business and trade.

For further information there are three Mexico City telephone/fax numbers listed. Call 011-52-5-574-6582, 574-2088 or 574-5836. I am not sure that the contact person is bilingual.

Sincerely,

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