

Venice Area Orchid Society News

October 2016

**Next Meeting: Wednesday,
October 5, 7:00 pm
Venice Community Center
(doors open at 6:30 pm)
Speaker: Roy Tokunaga
Topic: "Dendrobiums – Species,
Hybrids and Culture"**

Roy Tokunaga grew up on the beautiful island of Maui and earned a Bachelors in Education degree from the University of Hawaii in 1973. While in the honors program, Dr. Yoneo Saga-wa, his favorite mentor, introduced him to orchids and the new emerging technology of orchid seed germination and cloning. He was recruited to work at E&R Orchids, where he honed his germination and cloning skills for seven years. At about the same time, Harry Akagi was growing bromeliads, and in 1981, Harry and Roy established an orchid lab in Waimanalo on the island of Oahu, giving birth to H&R Nurseries. They have their own laboratory and grow their orchids under two acres of shade houses.



Today, Roy is credited with 40-plus years of experience in hybridization with several thousand hybrids delivered. He has been refocusing H&R to excel in the culture of species as well as providing outstanding hybrids in the Dendrobium and Cattleya alliances. He is a long time member of several Hawaiian orchid societies and an accredited American Orchid Society judge since 1990. He was one of the keynote speakers at the recent Sixth Annual Cattleya Symposium and continues to share his knowledge and love of orchids with society members around the country.

Roy will discuss and illustrate Dendrobium hybridization and culture in his PowerPoint presentation and will include many of his tips and techniques for our growing requirements that he's developed over the years. He's a great speaker and looks forward to answering questions from his audience. He's promised to bring many of his exceptional plants for sale as well as bringing pre-orders.

A Message From Your President

Here comes October, and with it less hot and humid temps and one of our favorite months of the year. Our orchid buddies are starting to return from the north - welcome back! Many of our cattleya orchids have completed their new growths and formed sheaths and many of our deciduous dendrobiums and catasetums are getting ready for their winter rest. Florida seasons are subtle, unlike up north, but we definitely feel the change in the air.



Your orchids will benefit from extra magnesium (Epsom Salts) this time of year applied at 1 Tbs. per gallon. Dilute in warm water and apply separately from your regular fertilizer once this month and next month. Stake your plants in preparation for upcoming winter orchid shows.

This month, our focus is on dendrobiums. Roy Tokunaga from H&R Orchids in Hawaii will be our speaker for our October 5th meeting. Roy is an expert on dendrobiums and that will be his presentation topic. Then, at our October 20th Growers Clinic, we'll continue our discussion of dendrobiums and their culture needs in Florida. With more than 1200 dendrobium species, it is important to know what type of plant you have. Many dendrobiums are deciduous and require cooler temps and a winter rest with no fertilizer and reduced watering (only that provided by Mother Nature). Phalaenopsis - type dendrobiums are evergreen and can be watered and fertilized year-round, but they require protection in cooler weather. When our temps drop below 55 degrees, these plants may drop their leaves and

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Change to October Growers Clinic Date and Location:

Please note that our October Growers Clinic will take place on **Thursday, October 20, the third Thursday, Room E, off the Main Lobby**, due to VCC availability issue. Renee Bynum and Rich Amos will be speaking on Dendrobiums, with lots of tips for our local growing conditions.

WWW.VAOS.ORG

Venice Area Orchid Society, P.O. Box 443, Venice, FL 34284-0443

**Officers 2016 – 2017
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Venice Area
Orchid Society News

P.O. Box 443, Venice, FL 34284-0443

- Published monthly.
- Deadline for submissions is the 15th of the prior month.
- Please direct comments to:
Steve Vogelhaupt, csec@vaos.org
- Written submissions are appreciated.

Minutes of the September 7, 2016 Meeting

Carol Wood called the meeting to order at 7 pm by welcoming new members and guests.

Announcements:

- The last of the books from our mobile library are For Sale by donation tonight; then the library will be retired.
- The Growers Clinic is tomorrow, September 8th, and is our annual repotting clinic. We will provide media and stakes and participating members should bring plants already prepared for potting by removing the plant from the previous pot and cleaning the old media out of the roots. Please bring your own pots as well.
- Thanks to all who brought in food donations for the All Faiths Food Bank's Annual Campaign Against Summer Hunger.
- On October 5th, our next speaker will be Roy Tokunaga of H & R Nurseries in Hawaii. Roy will speak on Dendrobiums-species, hybrids, and culture. He will have plants for sale and is accepting preorders.
- Jay Loeffler and the display team are preparing for The Ridge Orchid Show in Bartow, Florida on Sept 17 and 18th. They will be traveling 100 miles for this show and hope to create another award winning display. We will need anyone who has blooming plants to consider lending them to us to put into the display. We will transport them to and from the show for you.
- The Fall Greenhouse tour is coming up on Saturday, October 29 from 9-1pm. This is hosted by 2 members who will be opening their growing area for display. The newsletter will have more information and flyers will be available at the next meeting. This is a great opportunity to see how others grow their orchids and to get different ideas for growing your own.
- November 12th from 9-1pm will be the VAOS Member Annual Plant Sale. Any VAOS member may sell plants or plant related items; it is not limited to orchids. It will be in down town Venice around the gazebo adjacent to the Farmer's Market. This is the same weekend as

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Treasurer's Report

September - 2016

Checking Account

Starting Balance		
8/1/16	\$	23,262.81
Income	\$	336.00
Payments	\$	925.63
Closing Balance		
8/31/16	\$	22,673.18

Cash Account

Starting Balance		
8/1/16	\$	40.00
Closing Balance		
8/31/16	\$	40.00

Money Market Savings

Starting Balance		
8/1/16	\$	25,058.42
Income	\$	0.68
Closing Balance		
8/31/16	\$	25,059.10

Total Assets

8/31/16	\$	47,772.28
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Submitted by Mary Amos

**Newsletter Culture
Supplement**

For those members who receive their monthly newsletter by email, be sure to check out the Culture Supplement.

Included are culture articles and handouts from our monthly Growers Clinics.

This supplemental information will only be available in our full color email edition of the newsletter.

September 2016 Plant Table Awards

The First Place Blue Ribbon, Members' Choice and Speakers Commendation Ribbons were captured by Carol Wood, for her gorgeous *Cattleya* (C.) *Claudebec* 'Carmela' HCC/AOS. Though it has been growing out of its wooden basket for years, it has been so happy that Carol has not repotted it. The designation HCC means this orchid hybrid received the Highly Commended Certificate from registered judges of the American Orchid Society because it scored between 75-79 points inclusive on a 100-point scale. Our members are wise to purchase clones of HCC plants, knowing that they are strong hybrids which with good care will be magnificent producers. Kudos to Carol!



C. Claudebec

The Third Place Yellow Ribbon was awarded to Joanna Shaw for her *Blc. Hawaii Stars* 'Paradise'. It was a hearty multiflorous plant with 10 blooms and another 9 on the way. What are some of the keys to this growth? Joanna says she places Nutricote time release fertilizer on top of the media in March when her plants start putting out more roots, ready to grow. She also uses the MSU fertilizer formula at half strength several times per week because her homemade baskets have many openings and the media dries quickly.

Sounds like a winning combination. . . great growing, Joanna!

The Second Place Red Ribbon (below) went to Janet Keown for her beautiful *Brassolaelocattleya* (Blc.) *Hawaii Stars* 'Paradise' which had 5 blooms. The shape and striking colors of the flowers really caught the eye of our volunteer judging team.

This hybrid is a cross of the popular C. Robert Memoria Strait and B. Little Stars, a nodosa hybrid giving it its large lip. It was created and registered by Hawaii Hybrids in 2006 and thrives in high dappled light and the humid conditions of Florida. Congratulations, Janet for cultivating such a beauty!



Blc. Hawaii Stars



Blc. Hawaii Stars

The Best Species Purple Ribbon (photo on next page) went to Joanna Shaw for her stately *Habenaria* (Hab.) *medusa*. Last year this plant had one inflorescence and this year two, each almost 2 feet high! This species grows next to Joanna's phalaenopsis orchids in the pool cage under an extra layer of screen. Since it's a terrestrial, Joanna uses a media of soil with some perlite for aeration. After blooming, the plant "dies" and the 'corm' or tuber stays dormant underground until April. The Western world discovered this species in the monsoonal habitats of Sumatra, Java, Borneo, and Sulawesi and it was first described in 1893 by Kränzlin. Excellent cultivation, Joanna!

Continued on next page

Plant Table Awards (continued from page 3)



Hab. medusa



The New Member Growers Pink Ribbon (below) was granted to Eric Mellor for his luscious Rhyncattleanthe (Rth.) Chief Sweet Orange which had 3 flowers spanning beautiful shades of orange to deep red. Eric purchased it in February and has kept it very healthy for it had fat bulbs and strong roots appearing on top of the media.



Rth. Chief Sweet Orange

This hybrid was created in 2005 at Chief Orchid Nursery, Taiwan. Eric is a very enthusiastic orchid grower and is keen on learning as much as he can to cultivate specimen orchids. We're delighted you've joined VAOS, Eric, and our applause for your early achievement was very heartfelt!

-Narrative and photos by Cynthia Vance

The Role of Pesticide Rotation in Successful Orchid Growing

We've often talked about the importance of selecting the right pesticide for the job as well as how to properly apply it for the maximum effectiveness. A third aspect of pest management that is sometimes addressed in general terms, but rarely in specifics, is the need to rotate pesticides so that we don't inadvertently help develop "super bugs" that are resistant to poisons. So how does that happen?

In a large population of insects, there may be a very, very small number that have genes that render them resistant to a particular pesticide, and they are able to pass them onto their offspring. If we continue to treat our plants with the same chemical over and over, the susceptible ones will be killed, but that leaves a greater and greater proportion of the insects that are carrying the resistant genes, until they dominate the entire population, rendering it resistant to the pesticide as a whole. That exact thing happens with the overuse of antibiotics in people, and we hear all the time about bacteria that are resistant to a particular one that had been the "go-to" standard

for decades.

If, on the other hand, with each new infestation, we use a different pesticide - one with a different mode of action (MOA) - those bugs will not have had an opportunity to develop a particular resistance, so can be controlled. So, time to discuss what we mean by mode of action.

The mode of action of a pesticide is how, specifically, it can interact with the insects' physiology. Some interfere directly with nerve or muscle function, while others can affect growth, respiration, or even the bugs' midgut, interfering with digestion.

There is an organization, the Insecticide Resistance Action Committee (IRAC), that is the international authority on the classification of insecticides and miticides, and they maintain a chart that can allow us to choose our pesticide rotation wisely.

So, the best thing you can do is to read the labels to make sure the formula affects the offending critter, and then refer to the IRAC chart to identify the MOA Clas-

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Culture Tip of the Month WHEN TO REPOT YOUR ORCHID

At our repotting clinic in September, the most frequent question was “When Should I Repot?” The correct answer is when the media breaks down or when the plant is overgrowing the pot. Here are some other recommendations from the Growers Clinic Team:

- Orchids will become more quickly established if repotted when the new roots are about 1” long. Be careful not to break them when you repot!
- Paphiopedilums love to be repotted and can be repotted at anytime
- Phalaenopsis can be repotted at any time (even when in bloom) and should be repotted about every two years if potted in sphagnum moss
- Most cattleya alliance plants can be repotted after

blooming but must be well secured in the new pot as new roots may not break out until spring

- Be careful with species (less hardy than hybrids) and the bi-foliolate cattleyas - they should only be repotted with new root growth; otherwise, it can set them back for years
- Always repot if the media has severely broken down, regardless of new root growth.

Please join us at the next Growers Clinic, **Thursday, October 20th**, for a presentation on Dendrobiums. Doors open at 6:45 pm and the meeting starts at 7:00 pm. Bring your problem plants for expert advice. All members and guests are welcome.

-Submitted by Carol Wood

VAOS Takes 1st Place Trophy at Ridge Orchid Show

Congratulations to Jay Loeffler and his team for taking 1st place at the Ridge Orchid Show in Bartow, FL Sept 17-18.

This was the second year in a row that VAOS took first place, competing with four other orchid societies: Tampa, Tampa Bay, Ridge, and Sebring Orchid Societies. Our display took 18 blue ribbons, 8 red ribbons and 8 yellow ribbons for a total of 34 ribbons and 3 trophies and 1 AM/AOS award (Renee Bynum).



From left to right: Jay Loeffler, Bruce Weaver, Steve Vogelhaupt, John Kahnoski, Carol Wood, Renee Bynum, Sharon Kahnoski, John Roche, Ken Dolan, Jim Thomas

Ten members entered a total of 51 plants of which 34 were awarded. The 10’ x 10’ display created by Jay and his team was exquisite with sweeping color flow and lush greenery and a subtle rainbow on a backdrop in the background.

Special thanks to following members: Nora and Fred Berger, Renee Bynum, Ken Dolan, Sharon and John Kahnoski, John Roche, Jim Thomas, Steve Vogelhaupt, Bruce Weaver, Carol and Doug Wood, Janet

Keown, Jo Ann Britton and Judy Loeffler.



-Narrative by Carol Wood; photos by Jay Loeffler and Steve Vogelhaupt

VAOS Fall Greenhouse Tour of Member Growing Areas

Sat. Oct. 29, 2016 (9:00 am – 1:00 pm)

This year's Fall Greenhouse Tour includes two members' growing areas in S. Venice and Port Charlotte. Please be careful when parking not to block driveways and mailboxes. Thanks to our hosts, Mary Anne Digrazia and Steve Vogelhaupt !

Mary Anne Digrazia: Mary Anne has been a long-time member of VAOS and is also president of the Englewood Area Orchid Society. She will be opening their beautiful gardens that flow through their extensive property. Follow the paths and take in the palms and many fruit trees such as mango, loquat, lychee nut, papaya and avocado. Trellises with flowering vines share the area with cacti, passion flowers, euphorbia crown of thorns, bromeliads and poinciana trees. You'll be able to peek into her orchid house and admire the many others hanging in and among the trees along the paths.

Directions: 3058 Mauck Terrace
Port Charlotte, FL. 33981

Take SR. 776 (Englewood Road) south through Englewood. After passing traffic light at Winchester Blvd, turn left on Wilmington Blvd and continue 3 miles to Jennings Blvd and turn left. Continue on Jennings about 3 miles and turn right at Quinlan Avenue. Continue across Gillot Blvd and continue 2 blocks to Holcomb Rd. Turn left at

Holcomb and continue 3 blocks to Mauck Terrace which is a cul-de-sac. The house is well marked.

Steve Vogelhaupt: Steve has been growing orchids intermittently for a number of years, killing his first cattleya while in Bermuda in 1992. Since then, he's improved a bit and has been a member of the VAOS since 2011 and presently serves as the Communications Director and Newsletter Editor. His collection of just over 200 orchids is on his east facing lanai and surrounding holly trees. He's constantly, and probably too often, experimenting with new culture methods and has 25 orchids of different genera and sizes growing semi-hydroponically. He has cattleyas, dendrobiums, and encyclias, mainly hybrids, but also some species, as well as a scattering of miscellaneous genera. He's finally decided to focus on compact and mini cattleyas and will have a number of orchids for sale.

Directions: 4807 Jacaranda Heights Drive
Venice, FL 34293

Take US 41 south to SR. 776 south to the first traffic light at Jacaranda Blvd. Turn right and turn right again at the stop sign. His house is at the end of the cul-de-sac on the left.

-Submitted by VP, Social, Sharon Kahnoski

Minutes of the September 7, 2016 Meeting (continued from page 2)

the Chalk Festival.

- December 9th will be our Annual Holiday Party at the Boca Royale Country Club on Rte.776 in Englewood. We will have dinner, an orchid auction and a DJ. We will purchase a nice variety of orchids from Palmer Orchids for the auction and it is a good fundraiser for us.
- Judy Loeffler, Membership Chair, reported that our current membership is 293.

Bruce Weaver introduced the speaker for the evening, Mac Rivenbark of Mac's Orchids. Mac started growing orchids about 15 years ago. His presentation was Orchids of the Philippines and Mac and his wife, Helen, have traveled there multiple times collecting orchids. There are 1170 different species of orchids in 157 different genera

including Bulbophyllum, Aerides, Coelogyne and more. There are 20 species of Phalaenopsis, many of which have been hybridized extensively, as the Philippines have become the Phalaenopsis capital of the world. Mac is a vendor at our annual show and he had an interesting and unusual selection of orchids for sale.

His presentation was followed by the Plant Table, presented by Joanna Shaw, and the Raffle Table, hosted by Kathy and Gerry Beck and John Kahnoski. Both tables were a bit meager and we hope to see more orchids at our next meetings.

The meeting was adjourned at approximately 9:00pm

-Submitted by Joanna Shaw, Recording Secretary

The Role of Pesticide Rotation in Successful Orchid Growing (continued from page 4)

sification for the pesticide. If, in a matter of weeks or months, you find the need to treat for the same pest all over again, find a pesticide that affects it, but that has an entirely different MOA classification.

For example, when battling mealy bugs, I have three pesticides that I rotate; acephate (MOA 1B), Monterrey Once-A-Year Insect Spray (imidicloprid, MOA 4A), and Monterrey Garden Insect Spray (spinosad, MOA 5), and to help me remember which to use, I keep them in a front-

to-back row in my pesticide cabinet, with the one I just used placed in the back.

Editor's note: See the Culture Supplement for an excellent chart of common pesticides and associated MOA's. This chart is from the U.S Environmental Protection Agency, in cooperation with the Insecticide Resistance Action Committee (IRAC).

Article courtesy of Ray Barkalow, FirstRays, www.firstrays.com

President's Message (continued from page 1)

quickly resemble a palm tree. So we will all learn about dendrobiums this month and be far more knowledgeable by month's end.

By the time this newsletter is published we will have completed our first orchid show of the 2016 - 2017 season - the Ridge Orchid Show, held in Bartow FL., September 17-18. VAOS participates in four AOS - sanctioned orchid shows a year. Following the Ridge show, we'll put in exhibits at the Sarasota show in January, our own show in February and the Englewood show in April 2017. The Ridge, Sarasota and Englewood societies will in turn participate in our February show. Each orchid show is a major production and it is always magical to watch an empty room transformed into an orchid paradise in eight hours time. Each show exhibit created by the societies is a work of art and depends on many different talents.

Our VP, Displays, Jay Loeffler, starts his design theme months in advance, often building display props from scratch with the help of his team. All of the greenery that complements the plants in the display is maintained by members throughout the year and includes a variety of ferns, green plants and palm trees. Members register their plants and deliver them to a drop off site or to the show. The VAOS "Plant Registrar" receives entries via

email from members, researches the parentage, classifies and records the plant in accordance with the show schedule published by each society. Typically about 50 plants will be registered. Another volunteer generates the plant labels using a label machine and 2x3" black foam board labels. Volunteers help with the transport of display building materials, greenery and plants to and from the show. Once at the show site, everything is unloaded and organized. While the building blocks, props and back drop are set up, the plants are laid out on tables by color and labels inserted. As the plants are placed into the display, the pots are covered with black cloth and greenery is set in to best display each individual plant. Sheet moss, Spanish moss and mulch complete the project. AOS judging takes place before the show and the team returns Sunday evening to disassemble the display and transport materials and plants back home.

So you can see that an award winning display requires advance planning, long hours, many talents and volunteers, and why it is so important that we support our display team with our blooming plants. The payoff is in the team camaraderie and sense of pride and all those ribbons and awards we bring home to our members!

-Carol Wood, President

Please Support Our 2016 Show Sponsors

- Herald Tribune Media Group • Costco Wholesale
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- Pamela Hogan - Realtor • Region Solar • Center for Sigh
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- Kennedy-White Orthopedic Ctr. • R.A.V.E • Silverstein Institute
- Southgate Animal Hospital • Stanley Dean State Farm
- Youthful Aging • Classic Creations in Diamonds & Gold
- Crow's Nest Restaurant • Edgewood Nursery • Orchid Envy
- P.S. Printing • SunBulb • Thai Bistro

Support Our Local Growers

• **Honey Bee Nursery**
2383 Englewood Road (Rt. 776),
Englewood, FL (941-474-6866)

• **Palmer Orchids**
22700 Taylor Dr.,
Myakka City, FL 34251(941-322-1644)

• **Plantio La Orquidea**
3480 Tallevast Rd,
Sarasota (941-504-7737)

• **Orchid Envy**
339 Venice Ave. West,
Venice, FL (941) 266-6351

• **Florida SunCoast Orchids**
8211 Verna Bethany Rd.,
Myakka City, FL (941-322-8777)

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P.O. Box 443
Venice, FL 34284-0443

Next Meeting:

Wednesday, October 5, 2016, 7:00pm
at Venice Community Center
(Doors open at 6:30pm)

- **Speaker:** Roy Tokunaga
- Bring your blooming orchids for the Show Table
- Bring orchids for the Raffle Table
- Bring your friends and treats to share.

Upcoming Events

Oct. 5, (1st Wednesday): VAOS monthly meeting in Venice Community Center, Doors open at 6:30 pm, meeting starts at 7:00 pm, Speaker: Roy Tokunaga, Topic: Dendrobiums – Species, Hybrids and their Culture

Oct. 20, (3rd Thursday): VAOS Growers Clinic, Doors open at 6:45 pm, clinic starts at 7:00 pm, Venice Community Center (Room E, off the lobby), Speakers: Renee Bynum and Richard Amos, Topic: Dendrobiums.

Oct. 21 – 23: AOS Fall 2016 Members' Meeting, San Marino, CA. Details in Culture Supplement Section.

Oct. 29, (Saturday): VAOS Fall Greenhouse Tour, see P. 6 for details.

Nov. 2, (1st Wednesday): VAOS monthly meeting in Venice Community Center, Doors open at 6:30 pm, meeting starts at 7:00 pm, Speaker: Fred Clarke, Topic: Mini-Catts. Fred

will be accepting pre-orders so watch for details in an upcoming email blast.

Nov. 5, (Saturday): EAOS Annual Plant Sale, Doors open at 9:00 am. Christ Lutheran Church, Englewood

Nov. 10, (2nd Thursday): VAOS Growers Clinic, Doors open at 6:45 pm, clinic starts at 7:00 pm, Speakers: Renee Bynum and Ricard Amos, Topic: Other Orchids for your Collection.

Be sure to bring your problem plants and questions for advice from our experienced growers.

Nov. 12, (Saturday): VAOS Member Plant Sale, 9:00 am-1 pm, Centennial Park, details follow.

Upcoming

Dec. 9, (2nd Friday): V AOS Holiday Dinner and Orchid Auction, Boca Royale Golf and Country Club, SR 776 (Englewood Road). Details to follow.

Ongoing

Mentor Program: help for beginning growers, contact Pauline Adam, Mentor@vaos.org

Orchid Judging takes place at **Christ the King Catholic Church, Mc-Loughlin Center – Room C, 821 S. Dale Mabry Hwy., Tampa, FL 33609.** at 6:30pm on the fourth Wednesday of every month. Info: <http://www.fncjc.shutterfly.com/>

V.A.O.S. On FaceBook



“Join Us” and Share
your Orchid Photos
Search for us as
“VeniceArea OrchidSociety”

WHAT WILL BE GOING ON AT THE AOS FALL MEMBERS' MEETING AT THE HUNTINGTON?

October 21-23, 2016

Presented in conjunction with
the American Orchid Society
Fall Members Meeting

Register at
www.AOSFall2016.com

Paphiopedilum West-Gold

Friday: Noon-4:30 p.m.
Saturday & Sunday: 10:30 a.m.-4:30 p.m.

- Exhibits by Southern California orchid societies and international growers
- Orchids and supplies for sale from vendors from around the world
- Lectures for beginners and experts alike

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PREMIUM NEW ZEALAND ORCHID BARK

THE HUNTINGTON
Library, Art Collections, and Botanical Gardens

1151 Oxford Road | San Marino, CA 91108
More information: huntington.org/OrchidShow

The AOS Fall Members' Meeting at the Huntington Botanical Gardens in San Marino, CA will be the biggest orchid event on the west coast in years!

First, there will be a HUGE orchid show, with 33 orchid displays created by both amateur and professional orchid enthusiasts.

Second, there will be phenomenal shopping, with over 31 vendors coming from 7 countries offering beautiful plants, including many that are rarely available (see the vendor list at <http://www.aosfall2016.com/>).

Third, there will be three days of internationally renowned speakers teaching on Cattleyas, *Phalaenopsis* species, orchid gardens as a conservation tool, Vandas, genetics, terrariums, potting media Catasetums, *Paphiopedilum* evolution, and viruses.

Fourth, there will be tours of the three huge off-exhibit orchid greenhouses, housing over 10,000 orchids.

Fifth, there will be ribbon judging (anyone can participate in this educational, fun group event) and AOS judging. Come learn why certain plants win awards!

Sixth, you can see all of the orchid displays and shop at most vendors at a fun preview party, before the venue opens to the general public. The following night you can join friends at a fabulous dinner gala celebrating all things orchid.

Last but not least, you will have a chance to attend the AOS Town Hall meeting. See how the AOS operates, and ask your questions. Many other AOS committee meetings will take place, and some welcome guests and observers. Everyone is welcome at the Membership and Affiliated Society Committee breakfast meeting, and please contact Chair Gayle Brodie at GBrodieAOSMembership@gmail.com if you would like to attend the committee meeting as well.

The cost of registration (and admission for unregistered guests) varies depending on which events you choose to attend. For details on individual pricing and all-inclusive packages, see www.aosfall2016.com. Don't delay – prices will be going up October 1!

**Commonly available miticides for use after Home Remedies
have proven ineffective**

Miticide	Chemical	Mode	Controls	Residual period
Avid	Abamectin	Contact AND translaminar	All mobile stages Two-spotted European red mite Carmine spider mite Southern red mite Spruce spider mite Cyclamen mite Broad mite Rust and bud mite	28 days
Akari	Fenpyroximate	Contact and stomach poison	All mobile stages AND eggs – best against larvae Spider mites Broad mites Cyclamen mite Eriophyid mites	21 days
Floramite	Bifenazate	Contact only	All life stages AND eggs Two-spotted spider Pacific mite Strawberry mite European red mite Citrus red mite Clover mite Southern red mite Spruce spider mite Bamboo mite Lewis mite INEFFECTIVE AGAINST BROAD, RUST AND FLAT MITES	28 days
Hexygon	Hexythiazox	Contact and stomach poison	All larval stages AND eggs – NOT	45 days

			ADULTS Two-spotted spider Arborvitae spider European red mite Honey locust spider Pacific spider Southern red mite Spruce spider Strawberry Willamette	
Judo	Spiromesifen	Contact and translaminar	ALL stages including eggs AND WHITEFLY – less effective against adults than Sanmite Two-spotted Southern red Spruce spider Strawberry Willamette Lewis Tumid mite Maple spider Honey locust spider Euonymus Boxwood spider Broad Cyclamen False spider Eriophyid	30 days
Ovation	clofentezine	Contact only	Mite eggs, larvae, nymphs ONLY Two-spotted spider Pacific spider McDaniel spider European red Yellow spider	45 days
Pylon	Chlofenapyr	Contact, stomach and translaminar	All mobile stages – NOT eggs Two-spotted spider	28 days

			Broad Cyclamen Citrus bud Rust	
Sanmite	Pyridaben	Contact only	All life stages and eggs AND WHITEFLY Two-spotted spider Road European red Southern red tumid	45 days
Shuttle	Acequinocyl	Contact only	All life stages including eggs Two-spotted spider Spruce spider	28 days
TetraSan	Etoxazole	Growth regulator – inhibits molting Contact and translaminar	Eggs, larvae and nymphal stages only Two-spotted spider Citrus red European red Lewis spider Pacific spider Southern reed Spruce spider	28 days
ProMite	Fenbutatin- oxide	Contact only Slower acting than most Warm weather – better control above 70F Restricted Use	All mobile stages Two-spotted spider Clover Oak Southern red Spruce spider	30 days

Chart provided by Ron McHatton, AOS Chief Education and Science Officer. Ron is also our expert presenter on the periodic Greenhouse Chat webinars as well as specialized culture, genera and species topics. The Greenhouse Chat webinars are available to members and non-members alike and may be viewed at your convenience from the comfort of your home.

Modes of Action

The IRAC Mode Of Action (MoA) Classification is the *definitive* global authority on the target site of insecticides. It is the basis of MoA labelling of insecticides worldwide and is an essential tool for the development of insecticide resistance management (IRM) strategies. For more information please visit the [MoA Team](#) page, and should you wish you are welcome to [submit an active](#) for classification by the [IRAC MoA Team](#).

The colour scheme below associates mode of action into broad categories based on the physiological functions affected, as an aid to understanding symptomology, speed of action and other properties of the insecticides, and not for any resistance management purpose. Rotations for resistance management should be based only on the numbered mode of action groups.

Nerve and Muscle **Growth** **Respiration** **Midgut** **Unknown or non-specific**



• 1 ACETYLCHOLINESTERASE (ACHE) INHIBITORS

ACARBAMATES
BORGANOPHOSPHATES

• 2 GABA-GATED CHLORIDE CHANNEL BLOCKERS

ACYCLODIENE ORGANOCHLORINES
BPHENYLPYRAZOLES (FIPROLES)

• 3 SODIUM CHANNEL MODULATORS

APYRETHROIDS, PYRETHRINS
BDDT, METHOXYCHLOR

• 4 NICOTINIC ACETYLCHOLINE RECEPTOR (NACHR) COMPETITIVE MODULATORS

ANEONICOTINOIDS
BNICOTINE
CSULFOXIMINES
DBUTENOLIDES
EMESOIONICS

• 5 NICOTINIC ACETYLCHOLINE RECEPTOR (NACHR) ALLOSTERIC MODULATORS

SPINOSYNS

- 6 GLUTAMATE-GATED CHLORIDE CHANNEL (GLUCL) ALLOSTERIC MODULATORS

AVERMECTINS, MILBEMYCINS

- 7 JUVENILE HORMONE MIMICS

A JUVENILE HORMONE ANALOGUES

BFENOXYCARB

CPYRIPROXYFEN

- 8 MISCELLANEOUS NON-SPECIFIC (MULTI-SITE) INHIBITORS

AALKYL HALIDES

BCHLOROPICRIN

CFLUORIDES

DBORATES

ETARTAR EMETIC

FMETHYL ISOTHIOCYANATE GENERATORS

- 9 CHORDOTONAL ORGAN TRPV CHANNEL MODULATORS

BPYRIDINE AZOMETHINE DERIVATIVES

- 10 MITE GROWTH INHIBITORS

ACLOFENTEZINE, DIFLOVIDAZIN, HEXYTHIAZOX

BETOXAZOLE

- 11 MICROBIAL DISRUPTORS OF INSECT MIDGUT MEMBRANES

ABACILLUS THURINGIENSIS AND THE INSECTICIDAL PROTEINS THEY PRODUCE

BBACILLUS SPHAERICUS

- 12 INHIBITORS OF MITOCHONDRIAL ATP SYNTHASE

ADIAFENTHIURON

BORGANOTIN MITICIDES

CPROPARGITE

DTETRADIFON

• 13 UNCOUPLERS OF OXIDATIVE PHOSPHORYLATION VIA DISRUPTION OF THE PROTON GRADIENT

CHLORFENAPYR, DNOC, SULFLURAMID

• 14 NICOTINIC ACETYLCHOLINE RECEPTOR (NACHR) CHANNEL BLOCKERS

NEREISTOXIN ANALOGUES

• 15 INHIBITORS OF CHITIN BIOSYNTHESIS, TYPE 0

BENZOYLUREAS

• 16 INHIBITORS OF CHITIN BIOSYNTHESIS, TYPE 1

BUPROFEZIN

• 17 MOULTING DISRUPTOR, DIPTERAN

CYROMAZINE

• 18 ECDYSONE RECEPTOR AGONISTS

DIACYLHYDRAZINES

• 19 OCTOPAMINE RECEPTOR AGONISTS

AMITRAZ

• 20 MITOCHONDRIAL COMPLEX III ELECTRON TRANSPORT INHIBITORS

AHYDRAMETHYLNON
BACEQUINOCYL
CFLUACRYPYRIM
DBIFENAZATE

• 21 MITOCHONDRIAL COMPLEX I ELECTRON TRANSPORT INHIBITORS

AMETI ACARICIDES AND INSECTICIDES
BROTENONE

• 22 VOLTAGE-DEPENDENT SODIUM CHANNEL BLOCKERS

AOXADIAZINES

BSEMICARBAZONES

• 23INHIBITORS OF ACETYL COA CARBOXYLASE

TETRONIC AND TETRAMIC ACID DERIVATIVES

• 24MITOCHONDRIAL COMPLEX IV ELECTRON TRANSPORT INHIBITORS

APHOSPHIDES
BCYANIDES

• 25MITOCHONDRIAL COMPLEX II ELECTRON TRANSPORT INHIBITORS

ABETA-KETONITRILE DERIVATIVES
BCARBOXANILIDES

• 28RYANODINE RECEPTOR MODULATORS

DIAMIDES

• 29CHORDOTONAL ORGAN MODULATORS - UNDEFINED TARGET SITE

FLONICAMID

• UNCOMPOUNDS OF UNKNOWN OR UNCERTAIN MOA

AZADIRACHTIN
BENZOXIMATE
BROMOPROPYLATE
CHINOMETHIONAT
DICOFOL
GS-OMEGA/KAPPA HXTX-HV1A PEPTIDE
LIME SULFUR
PYRIDALYL
SULFUR

Courtesy of the Insecticide Resistance Action Committee (I.R.A.C), www.irac-online.org