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Warm Climate Production Guidelines for *Hydrangea* hybrids

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This article began back in 1998 when my family reunion was held in Colorado and I went to the grocery store to buy flowers for our condominium and discovered a series of lace cap hydrangeas with a totally different flower form that I had never seen before. I have since seen these hybrids in all shades of white, blue, mauve and pink. The impact of these hybrids was so strong I packed the plants into my suitcase and brought them back to Florida as mementos, they are still living though the colors have changed with their establishment into the Florida landscape.

I made a similar discovery this past year during the holiday season: I was searching for something different than a poinsettia to put around my tree. (Not that I have anything against poinsettias mind you, but it is just so very red everywhere at that time of year) anyway… I was looking for a break from tradition when I stumbled into my local grocery store in search of a holiday beverage and discovered some of the new Japanese hydrangea hybrids on display. Numerous thoughts crossed my mind including: “Is this a Hydrangea? Or a Clerodendrum?”, “How have I missed this development in breeding?”, “Behind the ball again…”, “Back off Lady! I’m taking all of them”, and finally, “Is it red or white wine that goes with pork?”

In the end, I did take every last one of the plants on display (paid $19.00 a pop for the privilege) and mixed them with Carousel poinsettias in front of a picture window. It was closest thing to a classy statement I had made in all of last year. So, this article will be about Hydrangeas—however, you really need to be growing Carousel poinsettias and Cortez Burgundy next year, just throw some of these new hydrangeas in to liven up the mix. In both cases the hydrangeas I found came from a nursery called Hana Bay Flowers marketed through Bay City Flower Co. in Half Moon Bay California. I was hoping to get a chance to visit Bay City flowers on my pack trial trip but unfortunately couldn’t get there during business hours. Bay City offers both finished and pre finished hydrangeas.

These ‘new’ Japanese releases will change the way you view this crop. They do not look like the old fashioned pompom forms, and while the foliage is similar, the newer lace cap hybrids and star-shaped flowered forms are really very unique. The effect is more graceful and more of a novelty than the standard flowering forms. There is also a lot of color bending in the new cultivars with more red tones blended into the traditional white, pink and blue we think of when we think of the florist’s hydrangea. The reason that I wanted to raise awareness of these hybrids is two fold. First, as with a lot of flowering potted plants, hydrangeas have become locked into the Easter/Mother’s Day market and deserve a lot more attention throughout the year. Secondly, the new cultivars offer retailers and wholesalers a great opportunity in novelty flowering crops, with a higher profit margin.

I met Tim Wood of Spring Meadow Nursery in Tennessee recently and we looked over his catalog of hydrangea cultivars, which are predominantly for the landscape industry. The selection of new forms is amazing. Tim had a short list of these new varieties for growers to experiment with, which included *Hydrangea macrophylla* and *Hydrangea serrata* cultivars.

While some taxonomists merge these two species, they can still be found separate in the trade. So don't be surprised to see them listed separately in catalogs. Also, the original Japanese names are often converted into American cultivar names in the US so you may find some cultivars offered under different names. This practice is common when new crops enter our market and are released.

Here is a short description of some of the cultivars available from Spring Meadows:
Hydrangea serrata cultivars
Kiyosumi – White flowered, lace cap form with some red around margins of florets. The new vegetative growth has a deep red flush adding another layer to the interest of the plant.

Midoriboshi-Temari – This is a pink lace cap form but the outer double florets have very long pedicels so that they hang elegantly downwards. This is the growth form I find so interesting and distinctively different from the hydrangeas we have become accustomed to.

Miyama yea Muraski – Double violet to pink florets on bright green foliage. This plant bends the colors we are used to in hydrangeas and has an excellent form as well.

Shirofuji – Double white masses of florets cover the plants. A very nice low mounding habit when planted in the landscape.

Hydrangea macrophylla cultivars
Izu No Hana – Lace cap type with double pink sterile florets, rounded petals, surrounding the central 'lace cap'. Hard not think of fireworks when you see this plant as the florets point outward and create the illusion of an expanding flower mass.

Jogasaki – Similar to the cultivar above but color is a bit more silvery, florets have slightly fewer petals, between 8 and 11 per floret. Flowers face up a bit more and create a different effect than that of Izu No Hana.

There are somewhere around six major genera of hydrangeas used in the United States. Some are suited for pot culture and others are not.

Production guidelines for prefinished hydrangea.
As the average grower gets in a 3-5" pre-finished plant and bumps it up into a 6" or larger finished container, there are a couple of things to keep in mind:
The importance of a good root system: First you want to encourage a good root system; without one, all the luck in the world will not give you satisfied customers. The way to do this is to keep the soil slightly warm (60-65ºF) while keeping the air temperature cooler at around 55ºF. This encourages a shift from shoot production to root production and gives you a stronger root system. You'll want to give newly arrived prefinished material about a week or two to recover from shipping stress and strengthen their root system before transplanting, so plan for this time when scheduling.

Hydrangea blooms are formed on the previous year's growth, so when you receive pre-finished liners the flowers are already in place in the dormant buds. The growers' job is to control vegetative growth and provide the conditions that allows for the best flower development possible. This means cool production conditions, bright light levels, a complete fertilizer program, and finishing with cool temperatures to intensify color. Losing buds on hydrangeas can occur if plants are drought stressed, exposed to ethylene or

exhaust fumes, and if temperatures are raised too much during the crop.

The major problems growers face with the crop are poor root systems on the liners leading to root problems later in production. Also, over-watering newly planted liners can cause problems. Use a broad spectrum fungicide at planting and hold off on watering until dormant growth begins emerging and new growth resumes.

Fertilization – Again type of fertilizer relates back to flower color desired, but in general 150 ppm Nitrogen is usually sufficient. Terminate fertilizer when flower buds begin to show color, fertilizer termination increases the postharvest life of the flowers.

Watering – Normal production irrigation is fine, never let plants wilt as they will lose lower leaves and reduce overall quality.

Media – You need to know what color you are trying to produce before selecting a media, a media with a starter charge may strongly affect final color of the crop, so start planning early. All commercial peat lite medias work fine, pH optimum depends on the color of flower you are working toward.

Production Temperatures – Hydrangea is a model crop for controlling with temperature. Development (flower and foliage) moves faster at higher temperatures. Temperatures of 55-60ºF night and 65-75ºF daytime temperatures are adequate, temperature much higher than this usually lead to plants of lower quality. Cooler temperatures as flower color will also give deeper color to the blooms.

Light level – In general plants do well with good light (5,000+) foot candles, low light levels result in weaker stems and too high a level of light will cause leaves to yellow.

Propagation – Hydrangeas root easily, but it takes a full year to develop a strong liner for prefinished use. Semi-hardwood to softwood cuttings are used for developing liners, optimal age of cutting depends on species grown.

Crop timing – Generally forced hydrangeas as a prefinished crop take 11 to 14 weeks. There is a lot of variability between the different cultivars.

Growth regulators – PGRs should be applied when there are 3-5 sets of unfolding leaves. Daminozide has been the traditional PGR of choice and rates range between 2500-5000 ppm. Later in the crop stem elongation can become a problem. In these cases do not apply growth regulators after flower buds are visible, or you may reduce inflorescence stem length and get a clubby shape on the finished plant. Sprays late in production can cause flower not to elongate, so in most cases weak drenches will provide more control without affecting flowering. Extremely strong cultivars may need repeated applications. Paclobutrazol can also be used as a drench but there isn't a lot of information out on rates. Start at 0.5-1 ppm and repeat as needed.

Flowering – When plants reach flowering size and buds first begin to show color, drop temperatures to 55N/65F day to increase the coloration of the flowers. In general first color is about 2-3 weeks before sale.

Controlling flower color: Historically blue flowers formed in the presence of aluminum, and pink flowers formed in the absence of the element. Breeding efforts have moved hydrangeas into more color flexible forms and so all shades between pink and purple are now available from mauve to purple to deep reds.

Creative growers may want to experiment with applications of aluminum sulfate to see what changes in color this brings out. For blue colors a more acidic pH (5.2-5.5) is needed and applications of aluminum sulfate will both provide aluminum and lower pH. For pink colors raise pH above 5.6 and use high phosphate fertilizers as phosphate 'competes' with aluminum and reduces uptake.

Sources for more information on Hydrangeas and hydrangea production:

Tim Wood, Spring Meadow Nursery
12601 120th Ave., Grand Haven, MI 49417
Phone 616-846-4729 ext. 17, fax 616-846-0619
Website:
http://www.springmeadownursery.com

Doug Bailey's articles on Hydrangea production:
http://www.ces.ncsu.edu/depts/hort/floriculture/hils/hil524.html
(Dr. Bailey has also published a grower's handbook on hydrangea production which is available at most bookstores)

Mark Holcomb's coverage of different species commonly used in the landscape:
http://www.utextension.utk.edu/hbin/hydrangea%20prod.pdf

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