

## Appropriate Lighting for A.O.S. Judging Centers

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As an American Orchid Society awards photographer, I must be strictly aware of the quality of light used for color photographs. Although film is more sensitive to variations in light color than our eyes, A.O.S. judges are still influenced by the quality of light used in the judging centers. Sometimes this works in favor of the exhibitor; other times against the flowers shown.

Orange- and red-toned flowers, for example, look especially rich under tungsten lights, such as the popular internal reflector spots and floods. At the Northeast Supplemental Judging Center located at the New York Botanical Gardens Snuff Mill, the exhibited orchids are studied under these bright tungsten lamps which have a distinctly warming influence. Bluish flowers tend to look much more purple under these tungsten lights than in natural daylight.

Fluorescent tubes come in so many colors that it is difficult to generalize about their influence on our perception of color. Compared to sunlight, standard cool-white fluorescent light makes reds and oranges look flat and washed-out. Greens, and lavender to magenta tones, are typically judged to look good under standard cool-white lamps but dull under deluxe warm-white tubes. As might be expected, the red tones look better under the warmer or redder warm-white fluorescents than under the cool-white tubes. On color film balanced for daylight/electronic flash, fluorescent lighting, from any of the common household or industrial tubes, produces an unattractive yellowish-green cast in the final color transparencies. This means that orchids photographed under fluorescent lamps, such as the cool-white or "daylight" types usually seen in offices, public buildings and homes, will be unnaturally rendered. These same orchid flowers also suffer when we view them under such fluorescent lamps.

A type of bastard filtration or light mixing sometimes produces pleasing results on color film and is worth remembering when one must photograph an orchid show by available light which is mainly fluorescent: Add tungsten light, such as a tungsten-halogen flood or even a photoflood lamp, but use daylight color film. The warm tungsten light eliminates much of the yellow-greenish cast, and the photos will be judged acceptable by documentary standards.

Some fluorescent lamps are manufactured to give light the same color temperature (Kelvin) as noon daylight. These tubes include the G.E. Chroma 50 and Matrix Full Spectrum, both with 5000K ratings; Verilux tubes, the standard for viewing color photos and art work in the photographic and publishing industry, with 6000K light; and Vita-Lite tubes with 5500K light. The Verilux and Vita-Life lamps are often used for plant growing. The popular, standard Sylvania Gro-Lux fluorescent tubes make colors look phosphorescent, presenting the orange to red tones in a spectacular and attractive light; but this cannot be considered natural compared to a sunlight standard.

Have you noticed that daylight varies in color? Sunlight color varies from place to place (because of variations in air quality, altitude and reflective surfaces), and most dramatically between early morning and late afternoon hours, compared with middle-of-the-day color. Orchids seen under a clear blue sky at noon will be nearest to what we accept as true color. Photographs taken in open may be too blue (cool), unless a slight warming (skylight) filter is used, because of the blue light from a great expanse of sky. Orchids judged in later afternoon light will look richer (warmer) because the sunlight is more orange.

I recall seeing some red and yellow vandas one afternoon at the Bangkok Rose Garden World Orchid Conference Show. The colors were rich and glowing, like decorations in the famous Thai temples. Blue orchids nearby looked less lovely than they had around noon. Since color is an important consideration in official judging, perhaps the American Orchid Society Committee on Awards may wish to standardize light color for the judging centers. Although a color chart is used to describe orchid color, the quality of light still has an effect that should be recognized. For example, I used a Nickerson Color Fan chart with standard Munsell hue patches to view a “blue” *Vascostylis* Ebb Tide Blue under different lights. This dwarf hybrid of (*Vascostylis* Precious x *Ascocenda* Tan Chai Beng) looks blue under sunlight and at a window with light from open sky. The official color patch that comes closest to its color under daylight is Brilliant Violet #10PD 5/9. The color is the same under Verilux lamps but perhaps a bit lighter looking. Verilux is close to daylight color. Under a 75-watt tungsten household lamp the flowers look purple (Color 5P-5/9). Under cool-white fluorescents the flowers looked a brilliant, purplish blue (Color 7.5 PB 6/9).

Since growers most often view their orchids under the daylight of a greenhouse, window or outdoors, it seems reasonable to recommend daylight (sunlight) color as a standard. The least expensive way to provide artificial light close to noon-time sun color is with specific fluorescent lamps. A fixture with 2 or more 40-watt tubes provides sufficient light for judging most orchids, but I would prefer much brighter conditions, perhaps 4 to 6 lamps in long fixtures.

Nationally available, 5000-Kelvin color fluorescents include the Chroma 50 of General Electric, available in all popular sizes. Having a standard light color used for orchid judging would further refine the accuracy of our A.O.S. judging system, making references to color closer to what we actually see when viewing flowers at home or in correctly balanced, color photographs. Less precise but still providing more detailed color information than currently offered would be to list the type of light used at each judging center. For example, at the Northeast Supplemental Judging in New York, the description would list tungsten reflector floods and spots as the judging light source. Elsewhere it would be natural daylight or specific types of fluorescent lights. Hue and color temperature are important in judging orchids, so it is nice to know what we are evaluating when we read descriptions of flower color. Approaching the illumination variable with precision in mind will help us to see the way to more accurate judging of orchid flower colors.