Saintpaulia / African violet demonstration

Valoya AP67 LEDs perform better than High Pressure Sodium (HPS) lights

Background

Several flower species grown under artificial light show lower productivity and lower quality during winter compared to summer. During the summer there is plenty of sunlight in most locations and HPS lights are rarely used. Typically HPS lights become the dominant source of light in October, when sunlight decreases. At the same time the productivity and quality of some flower species decrease. Typical symptoms compared to summer are; less flowers per plant, smaller flowers, pale flower color, worse leaf quality and lower dry weight of the plants. These reactions can be found in plants like roses, saintpaulia, tulips, alstomeria, chrysanthemum etc. There is evident connection between the decrease in productivity and poor plant quality with dominant use of HPS lights with the poor light spectrum.

Benefits of using Valoya LEDs

More flowers at harvest

Mina: 16% more flowering stems, 5% more open flowers and 14% more buds under AP67 compared to HPS.

Tamiko: 26% more flowering stems, 5% more open flowers and 28% more buds under AP67 compared to HPS.

More compact plants

Mina: Leaf petioles were 25% and flowering stems 11 % shorter under AP67 compared to HPS.

Tamiko: Leaf petioles were 15% and flowering stems 15% shorter under AP67 compared to HPS.

Stronger flower and leaf color

Both varieties had significantly stronger colors on flowers and leaves under AP67 compared to HPS.

Chlorophyll levels were in average 14% higher under AP67 compared to HPS.

Plants at harvest after 67 days of cultivation with HPS lamps (left) and with Valoya lights using the AP67 spectrum (right).

Test specifications

Plant varieties	Mina (pink), Tamiko (blue flowers)
Valoya spectrum	Valoya AP67, installed in Valoya B100 light
Reference light	High Pressure Sodium (400 W, Son-T)
Intensity at plant level	100 µmol/m^{-2}/s^{-1}
Photoperiod	18 hours of light, 6 hours of dark
Temperature	Day 21.5 °C, night 18 °C
Growth substrate	Peat for flowering plants (Kekkilä), pH 5.0
Fertilizer type	Kekkilä Ruukkukasvi-Superex
Planting method	Seedlings, planted 6-Oct-2011

Luminaires used: Valoya B100 with AP67 spectrum

Plants at harvest after 67 days of cultivation with HPS lamps (left) and with Valoya lights using the AP67 spectrum (right).

Plants at harvest after 74 days of cultivation with HPS lamps (left) and with Valoya lights using the AP67 spectrum (right).

More information

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