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Efficacy Standards for CEH & other agricultural lighting

If the CEC mandates efficacy standards for horticulture and agricultural lighting, you should do deep research into light wavelengths and not just lumens per watt which is useless in these applications of light. When Title 20 went live we had to discontinue selling light bulbs we had designed for the entertainment market for the highest CRI applications of 95-97CRI. In television, video and cinematography production, our users required higher color quality. Because we were 1 Watt too high, they could not legally purchase our bulbs any longer and had to move to 90CRI product giving them poor color quality. What happens is a chain effect costing more money in post production, correcting for bad color. Post production requires more hours of other lighting use and computer time so the net effect was negative for this application. Save 1W on the light bulb and spend 1kW on post production color correction. For horticulture and agriculture lighting we are not as concerned with lumens but with photosynthetically available light and increasing yield and production of both plants and animals. A mandated lumens per watt may cause less yield and production. Under current operations, you may have 3x yield in indoor growing than outdoor. If we have to cut the lighting base purely on lumens/watt you may end up using the lights for longer hours producing less agriculture. So it could happen that what you normally harvest in 3 months, you may have to harvest in 4-5 months. You may have to build three indoor grow operations instead of two to produce the same yield. The net effect will be more energy waste than savings. Even with LED products, If we find that adding specific wavelengths of light to boost agricultural yield drops the lumens/watt rating then the product becomes illegal to use in California. A technological and yield gain will be squashed by a lumens/watt rating. Competing agricultural states with indoor farming will then have higher yields and have a more competitive advantage over California growers. You'd better get out of the University studies and get into the field to talk to farmers and producers first before mandating new efficiency standards or California will fail to be competitive in the indoor agricultural market. Water as we know is becoming more scarce and indoor agriculture will save California's agriculture business moving forward.