

From: Joyce G. Latimer [jlatime@vt.edu]
Sent: Friday, June 12, 2009 4:22 PM
To: Jane.McCarter
Cc: bpellmore@verizon.net; Blischak, Leslie
Subject: Light Pollution of Ellmore's Greenhouse
Attachments: Latimer2009cv.doc

Dear Jane,

I have not yet heard back from the Nexus representative about the cost of covering the Ellmore's greenhouse with blackcloth but wanted to follow up on our conversation of yesterday. When I talk to the Nexus rep I will send that info along or perhaps, you can get that info from the Ellmores. Just remind them to be certain that the estimate includes covering the top of the greenhouse as well as the sides and that there is an estimate of installation costs.

To recap our conversation, I did visit the Ellmore's production greenhouses located across Rt 7 from the proposed sports park. Based on their location and proximity to the site of the proposed park, it is my opinion that they will receive sufficient light pollution to interfere with the proper flowering of their light-sensitive crops, especially their poinsettias.

Poinsettias are very sensitive to light pollution. Light as low as 1-2 footcandles (22 lux) can cause splitting even if it doesn't delay flowering. Without a light meter (and actual lights to measure), you can estimate two footcandles of light as the minimum intensity at which most individuals can read a newspaper or greenhouse growers say it is the light level where they can see the veins on the poinsettia. The dark requirement is for about 10 weeks, from the beginning of short days (flower initiation) until about 1-2 wk from full flower, roughly late September/early October through November.

Blackcloth (more dense than shade cloth) is used to provide light blocking. I don't remember if the Ellmores use their quonset houses for poinsettia production. It is possible to cover the entire outside of a quonset greenhouse at night with blackcloth to reduce light. That would be a significant labor investment for a family-run operation like the Ellmores. There are also movable curtain systems that can provide light protection and energy savings as well. They are harder to install in a quonset house but it can usually be done. This would be the preferred system for the gutter-connected greenhouse. Again, as I mentioned on the phone, I have another client in Chesapeake who is located near school ballfields and his main light pollution is light reflected off the clouds on cloudy nights. Therefore, the blackcloth protection would need to include all sides of the greenhouse as well as the area above the plants.

I have listed a few references below. I can provide copies of the pertinent sections of the Ecker Manual if necessary. And, I have attached a brief cv for myself to answer your questions about my qualifications. I have added the public hearing on July 28th to my calendar and I appreciate your offer to advise me on where this item is located on the agenda.

Ecker Poinsettia Manual, by Ecker, Fuast, Higgins and Williams. 2004. Ball Publishing Company, Batavia IL

<http://www.ces.ncsu.edu/depts/hort/poinsettia/corrective/a3.html>

Effects of low light levels during the dark period on flower development in *Euphorbia pulcherrima*. Wang, et al. From 2002 International Hort Congress Proceedings (I have requested a printed copy of the entire article and will forward that to you when I receive it.)

http://www.actahort.org/members/showpdf?booknrarnr=624_24#search=%22poinsettia%20light%20pollution%22

In addition to my office contact info below, you can reach me on my cell phone at 540-353-7092. Please let me know if you have any other questions.

Sincerely,

Joyce

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