



UVITA SME 3811 Synergisms with 2,2'Dihydroxy 4,4' Dimethoxy Benzophenone for Polyethylene Films and Wavelength Protection in the 385-410 nm region and Botrytis cinerea (Grey Mold)

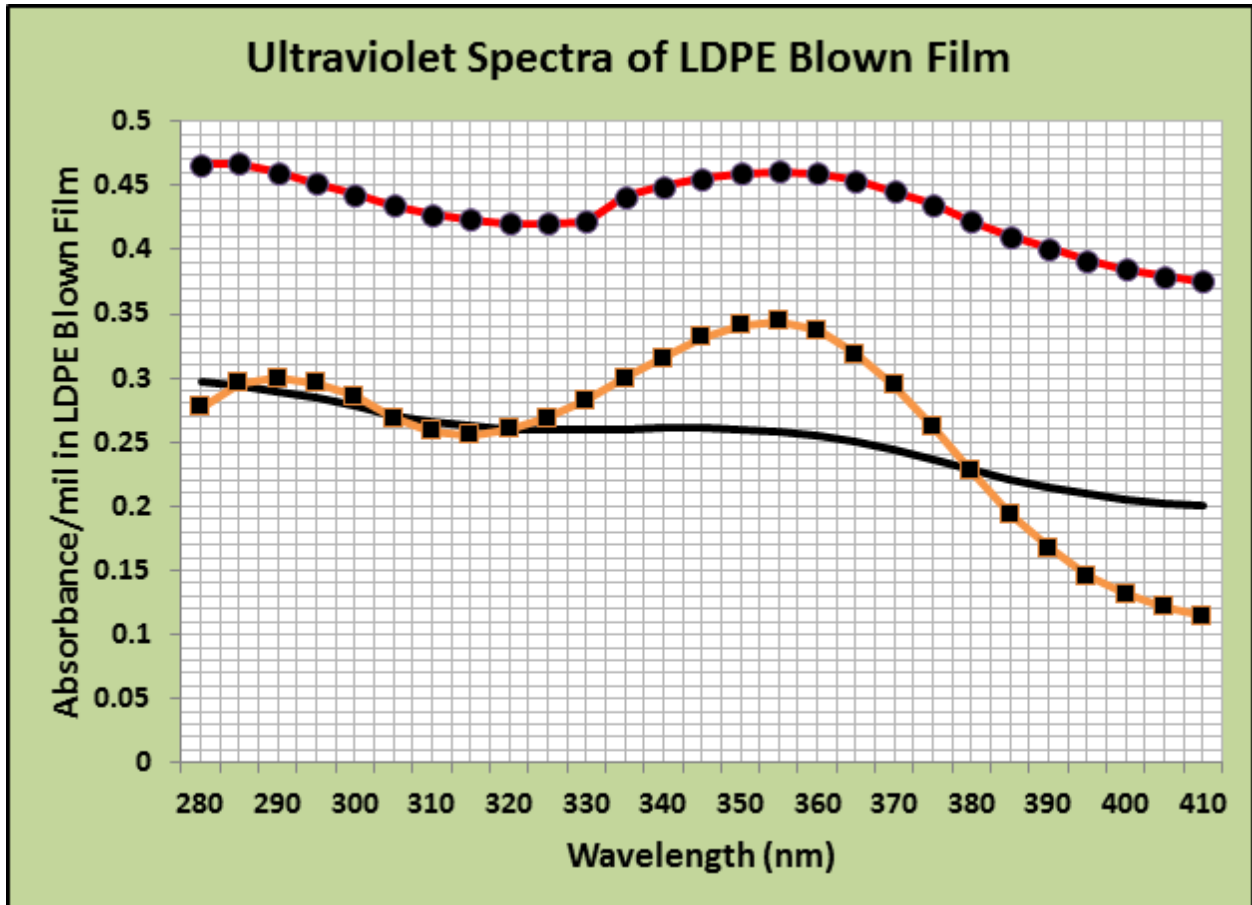
Current studies with Blue Light screening and the influence of higher wavelengths on sporulation and fungus/molds in Green house that have a negative effect on production of red roses, and other florals, fruits and vegetables has led to new findings and alternatives to solving and mediating this problem.

We have reported on the profound synergisms with organic ultraviolet absorbers and control of the rate of in-situ conversion of organic UVA in previous bulletins. Today we report on additional findings that shed further light on hyper-chromic effects with other UVA. In order to increase absorbance and or absorptivity beyond 385 nm to control Botrytis cinerea (Grey mold) we have discovered that 10:1 ratio of UVITA:UVA is stronger than a 6:1 ratio of UVITA:UVA with 2,2' Dihydroxy 4,4' Dimethoxy Benzophenone. Therefore, with standard rates of in-situ conversion of any organic UVA and the lack of similar decrease in absorbance of UVITA SME a lower ratio will only provide stronger absorbance over time on exposure!

One mil blown low density polyethylene films were fabricated with the organic UVA alone and in combination with UVITA SME 3811 at a fixed concentration. Ratio of organic UVA was changes from 6:1 to 10:1 to determine absorbance in one mil films.

These findings are consistent with previous findings between UVITA SME and other organic UVA and rely on the ratio between UVITA SME to that of the organic UVA and once identified provides predictable and consistent results.

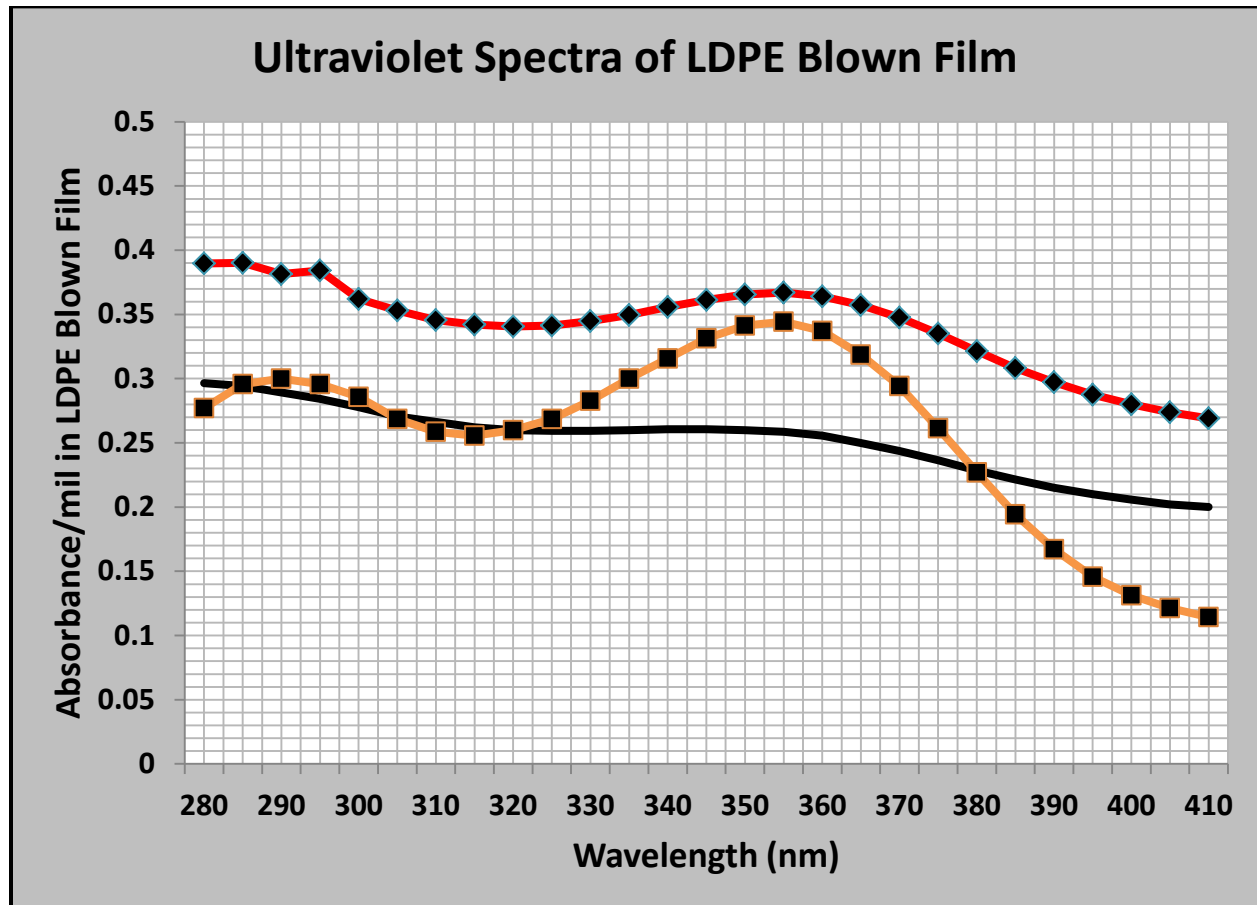
Figure 1: Synergisms at higher relative ratio of UVITA to Organic UVA



10:1 Ratio of UVITA SME 3811: Organic UVA.

The data shows a 95% increase in absorbance at 385 nm, 200% increase at 405 nm and 280% increase at 410 nm.

Figure 2: Lower Ratio Synergisms between UVITA SME and Organic UVA



6:1 Ratio of UVITA SME 3811 to UVA.

The data shows a 6:1 Ratio of UVITA SME to UVA gives a 50% increase in absorbance at 385 nm and a 123% increase at 405 nm and 180% increase at 410 nm.

Therefore, increasing the level of organic UVA with UVITA SME initially decreases initial absorbance at these wavelengths. When in-situ conversion the organic UVA decreases during exposure and reaches lower concentrations the synergism will increase then ultimately decrease to the levels of the UVITA SME 3811 which remains constant over time.

