Intumescence is a physiological disorder that develops sporadically on the leaf tissue of some plant species, including ornamental sweetpotato (*Ipomoea batatas*), when plant exposure to UV light is blocked (Craver et al., 2014). Figure 1. Based on previous research (Craver et al., 2014) we observed that occurrence and severity of intumescence on ornamental sweetpotato is variable by cultivar. One recommendation to avoid the disorder would be for growers to produce cultivars that are less susceptible. We conducted a screening trial with 36 ornamental sweetpotato cultivars to 1) describe and characterize foliage type and plant growth; and 2) document occurrence, developmental timeline, and severity of intumescence on each cultivar.

**Materials and Methods**

- Rooted cuttings of 36 ornamental sweetpotato cultivars (Table 1) were obtained from commercial suppliers. Liners were received on January 15, 21/22, and February 14, 2014. After receipt, 25 cuttings were potted in 11.43 cm diameter (465 ml volume) pots using Fafard #2 peat-based medium and were grown in a glass greenhouse at 22°C day : 20°C night with a constant 200 μg mL⁻¹ N constant liquid feed using 20N-4.4P-16.6K.
- UV-blocking polyethylene film was used above benches and under the glass greenhouse glazing to filter UV radiation.
- Experimental design was randomized complete block with 6 blocks and 3 pots of each cultivar per block.
- Data was collected on one pot per block per cultivar at three times: 2, 4, and 6 weeks after each group of plants were introduced into the experiment.
- On each date, total number of leaves of each plant were counted. Next, UV-blocking polyethylene film was used above benches and under the glass greenhouse glazing to filter UV radiation.

**Results**

**Table 1.** Ornamental sweetpotato (*Ipomoea batatas*) cultivar characterization and incidence of intumescence development after 6 weeks of greenhouse growth under UV-blocking polyethylene.

Cultivars with >5% intumescence leaves were considered commercially acceptable; 22% of the tied cultivars fell into this category (Table 1). This practical information may aid greenhouse growers in avoiding production of these varieties as a means to avoid the disorder. 78% of the cultivars in this study developed none or minimal (<5%) intumescence that was not commercially significant (Table 1). Selection of cultivars from this longer list of non-symptomatic varieties for spring production is a practical strategy to avoid the disorder.

**Discussion and Conclusions**

- Plants with ‘yellow-green’ foliage had significantly less intumescence development compared to ‘variegated’, ‘red-bronze’ and ‘deep-purple’ colored leaves based on a one-way ANOVA.
- ‘Blackie’ and ‘Black Heart’ are older cultivars with heavy incidence of intumescence development (Table 1). Alternatively, the standard yellow-green ‘Margaret’ did not develop intumescence. Perhaps these industry standards have been used in some of the breeding efforts to create new cultivars. Investigations of genetic heritage would be of interest to aid in understanding why some cultivars are susceptible to the disorder and others are not.
- This screening trial provides information for selection of susceptible varieties for future mechanistic research into the relationship between lack of UV light and the occurrence of this disorder.

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