

RESULTS AND DISCUSSION

Most plants were killed to the ground by cold weather during the 2000-2001 Winter. First killing frost was on 10 Oct. 2000 with the lowest winter temperature recorded at MHCREC, Fletcher being 8°F on 20 Dec. 2000. However, much flower and vegetative bud damage occurred in spring due to variable temperatures. For example, high temperatures in excess of 75°F were recorded every day from 6 to 12 April 2001 followed by 3 nights below freezing the next week, another 3 days above 75°F then the last frost was on 27 April 2001. New growth in response to warm spring temperatures was killed by exposure to temperatures in the 20s.

SIGNIFICANCE TO THE INDUSTRY

Twenty of the fifty-two cultivars which flowered produced new flowers both in early summer and early fall.

LITERATURE CITED

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Does Wulpak Have Fertilizer Value?®

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NATURE OF WORK

Wulpak is a processed wool fiber product that has been used as mulch in container nursery production. In studies conducted at MHCREC, Fletcher, North Carolina in 2000, when Wulpak was applied at rates calculated to provide the same amount of nitrogen as the standard fertilizer products, controlled-release fertilized plants produced from 200% to 400% more growth during the experiment than those receiving only Wulpak. Data indicated that available nitrogen from Wulpak was released during the first 2 weeks of the experiment. For some, but not all, species a superior root system seemed to develop where Wulpak was top-dressed, possibly because of temperature and water stress modification by Wulpak as a mulch.

The objective of the test was to determine whether Wulpak as a fertilizer source can be a benefit to plant growth when standard controlled-release fertilizers are used. To evaluate this, Wulpak was applied at label recommended rate of 45 g per 1-gal pot. The controlled-release fertilizer Wilbro 19N-5P-12K was applied at the rate of 1.5 g N (21 g actual fertilizer) per gal per pot per month which was statistically the best rate in the 2000 tests. Additional treatments were 0.25 times that rate and 0.50 that rate, with or without Wulpak used as a mulch. There was also an unfertilized and unmulched treatment.

Table 1. Fresh weight (grams) of selected plants grown in trade gallon pots with the addition of Wulpak and or Wilbro 19N-5P-12K controlled-release fertilizer.

Wulpak (g/pot)	19N-5P-12K (g/pot)	<i>Buddleja</i> 'Nanho Purple'	<i>Eupatorium</i> 'Carin'	<i>Panicum</i> 'Prairie Sky'
45	0	36.4	52.8	61.4
45	5.25	53.6	61.4	93.2
45	10.5	60.8	106.2	112.6
45	21.0	56.8	66.8	169.2
0	0	2.6	12.6	5.4
0	5.25	36.2	53.6	49.0
0	10.5	53.4	73.6	83.8
0	21.0	71.6	100.2	142.2

All plants were potted from commercially grown plugs into standard MHCRS pine-bark-based nursery potting medium and placed under overhead irrigation on the crushed rock container research pad at MHCRS, Fletcher on 8 May 2001. Wulpak mulch was applied to the appropriate treatments following irrigation then the appropriate rate of fertilizer was applied over the Wulpak mulch.

Following the first complete irrigation, VTEM measurements were taken from representative plants of each species. Readings from these same plants were taken 24 h later, 7, 14, 21, 28, 35, and 42 days after initial fertilizer application (data not shown). The experiment was terminated when plants reached salable size on 6 July 2001 which was 7 weeks after the initiation of the experiment. Fresh weight was determined by severing plants at the surface of the growing medium and immediately recording fresh weight for each plant. There were seven plants per treatment and four replicates.

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Mulch may help to retain moisture, maintain a cooler rootball, and suppress weeds. However, none of these values were measured directly. It is impossible to separate moisture and temperature from fertilizer performance so we report what happened in terms of growth but do not speculate as to why it happened.

Wulpak alone resulted in more growth than no fertilizer but growth equal to only about that achieved with 0.25 of the standard controlled-release fertilizer (Table 1). This suggests that Wulpak has some value in producing growth over not applying Wulpak at all.

SIGNIFICANCE TO THE INDUSTRY

Wulpak may have some value as a fertilizer. If a grower is using Wulpak for mulching value anyway, no more than the 0.5 rate of controlled-release fertilizer needs to be used for *Buddleja* 'Nanho Purple' and *Eupatorium fistulosum* 'Carin'. However, when growing the ornamental grass *Panicum virgatum* 'Prairie Sky', the full rate of fertilizer application with Wulpak resulted in increased growth over the full fertilizer rate alone. Therefore, a higher application rate of the fertilizer may be worth exploring.

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