



Nitrogen Release From Woodace Briquettes ¹

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NATURE OF WORK

Fuller and Meadows (1) and Ingram and Yeager (2) determined that Woodace fertilizer briquettes (manufactured by Mitsubishi Chemical Industries LTD. of Japan and distributed by Estech, Inc., Chicago, IL) released nitrogen in a container medium for about a year. However, data comparing nutrient release at different briquette placements are lacking, so the following study was conducted to evaluate the influence of Woodace briquette placement on nitrogen release.

Multiple branched lines of *Rhododendron* spp. 'Mrs. G.G. Gerbing' were potted April 24, 1984 in a 2 pine bark: 1 Canadian peat: 1 sand (v/v/v) medium amended with 5 lb/yd³ (3 kg/m³) of superphosphate (9% P) and 3 lb/yd³ (1.8 kg/m³) of Perk (micro-nutrient formulation of Estech Inc.) Three 0.6 oz (16 g) briquettes (14-3-3) were used per gallon (3 liter) container. The briquettes were placed either 1) in a circle 0.5 inch (1.25 cm) below the root ball (middle placement) of 5 plants or 2) protruding 0.5 inch (1.25 cm) from the growth medium surface periphery (surface placement) of 5 other containers. The plants were arranged in a completely randomized design on black polypropylene ground cover under 30% light exclusion polypropylene shade cloth and received 0.5

inch (1.25 cm) of water applied as needed by Damm drip rings.

Thirty, 60, 90, 150, 210, 270, 330 and 360 days after potting, 150 ml of distilled water were poured on the surface of each container and leachate collected. Leachate nitrate (NO₃) and ammoniacal nitrogen (NH₄) levels were determined by standard analyses (3). On May 1, 1985, stems were severed above the uppermost roots and shoot dry weights were determined.

RESULTS AND DISCUSSION

Nitrate and NH₃ release rates were each similar for surface and middle placement of Woodace briquettes. Leachate NO₃ concentrations ranged from 30 ppm on day 30 for surface placement to 3.0 ppm on day 360. Nitrate concentrations were generally higher than NH₄ concentrations regardless of placement and may have been due to nitrification or retention of NH₄ by the pine bark.

Shoot dry weights averaged 2.5 oz (76 g) and were not different due to briquette placement. In another study conducted by the authors (2), azalea shoot dry weights were slightly larger for surface placement of briquettes, however leachate NO₃ and

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NH₄ levels were similar for surface and middle placements.

These data indicate that NO₃ and NH₄ release rates were each similar for surface and middle placement of Woodace briquettes in a container medium.

LITERATURE CITED

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3. Rhue, R. D. and G. Kidder. 1984. Procedures used by the IFAS extension soil testing laboratory and interpretation of results. Univ. of Fla. Ext. Circ. 596.