Ornamental peppers (*Capsicum annuum*) have increased in market share in recent years. In most cases growers produce ornamental peppers to full fruit display unlike edible peppers destined for transplant. This extended crop time allows these vigorous plants to frequently grow too large for the containers. Before a supplemental label was released for uniconazole in 2008, no plant growth regulators were labeled for use on any peppers including ornamental varieties. Uniconazole (Sumagic formulation; Valent U.S.A. Corporation, Walnut Creek, CA) foliar sprays were applied to ornamental peppers ‘Black Pearl’, ‘Chilly Chili’ and, ‘Sangria’ with concentrations of 0, 2.5, 5, or 10 mg·L−1 at the cotyledon, 1 to 2 true leaf, 3 to 4 true leaf, and/or 2 weeks after the 3 to 4 true leaf stage which is the latest application stage allowed by the label. Plant size data were collected when plants reached full fruit display 16 weeks after sowing. Uniconazole was highly effective at controlling plant size. Treated plants ranged from 11% to 73% smaller than the untreated control plants. The degree of plant size suppression was impacted by variety, uniconazole concentration, and application time. ‘Black Pearl’, ‘Chilly Chili’ and, ‘Sangria’ plants sprayed with 5 mg·L−1 uniconazole at both the 1 to 2 true leaf stage and 2 weeks after the 3 to 4 true leaf stage were 37%, 55%, and 71% smaller than the corresponding untreated control plants, respectively. ‘Black Pearl’ plants treated with 5 mg·L−1 uniconazole at the cotyledon, 1 to 2 true leaf, or 3 to 4 true leaf stages were 24%, 37%, and 45% smaller than the untreated control plants, respectively. Uniconazole provides growers with an effective tool to manage ornamental pepper size throughout the long production period of this unique crop.