Gray mold, caused by *Botrytis* spp., is a significant disease of blueberry in the Pacific Northwest (PNW), resulting in pre- and post-harvest losses. The management of this disease primarily depends on the rotation of various site-specific fungicides that possess distinct modes of action. Nevertheless, there is a dearth of research-based information regarding the fungicide resistance profiles of *Botrytis* spp. obtained from blueberry fields in the PNW. Such knowledge gaps have the potential to significantly impact the selection of fungicides for incorporation into spray programs. To address this research gap, 376 *Botrytis* spp. isolates were collected from 22 and 13 blueberry fields from Washington (WA) and Oregon (OR), respectively, during the 2022 growing season, at three sampling times: early season, mid-season, and late season in WA, and only at the late season stage in OR. Of the 376 isolates tested in this study, 375 were characterized as *B. cinerea*, whereas one isolate was identified as *B. pseudocinerea*. The fungicide sensitivity of *Botrytis* spp. isolates was evaluated using conidial germination assays on agar media amended with discriminatory doses of 10, 5, 10, and 5 µg/ml for boscalid, fluopyram, fluxapyroxad, and isofetamid (Fungicide Resistance Action Committee; FRAC group 7) respectively, 4 and 25 µg/ml for cyprodinil and pyrimethanil (FRAC 9), 1 µg/ml for azoxystrobin and pyraclostrobin (FRAC 11), 0.1 and 1 µg/ml for fludioxonil (FRAC 12), and 1 µg/ml for fenhexamid (FRAC 17). Multi-fungicide resistance was widespread in WA and OR, with about 74% of *Botrytis spp.* isolates exhibiting resistance to one or more FRAC groups. The overall frequencies of *Botrytis* spp. isolates resistant to azoxystrobin, pyraclostrobin, boscalid, fluopyram, fluxapyroxad, fenhexamid, isofetamid, pyrimethanil, and cyprodinil were 62.5, 62.1, 52.3, 43.0, 33.7, 27.0, 22.4, 15.6, and 4.5%, respectively. Additionally, 39.7% of the isolates were less sensitive to fludioxonil. Evaluation of in-season shifts in the frequencies of isolates with resistance to the fungicides tested among the three sampling times did not indicate any significant changes. Furthermore, detached fruit assays on apples treated with the label rate of formulated premix fungicides (Pristine, Luna Tranquility, and Switch) and inoculated with 17 *B. cinerea* isolates supported the results from in vitro assays. Analyses of *sdhB* sequences from 251 *B. cinerea* isolates revealed six previously characterized mutations: N230I (41.4%), H272R (22.3%), P225F (19.5%), H272V (10.4%), H272Y (5.5%), and I274V (0.9%). Our findings indicate the prevalence of N230I, P225F, and H272V mutations in *B. cinerea* isolates from WA and OR, which confer resistance to multiple FRAC group 7 fungicides. In conclusion, this study reports the existence of *B. cinerea* isolates with resistance to multiple fungicide chemistries and underscores the need for prudent application of site-specific fungicides to effectively manage gray mold in blueberries in the PNW.