

Fluridone, penoxsulam, and triclopyr absorption and translocation by Eurasian watermilfoil (*Myriophyllum spicatum*) and Hydrilla (*Hydrilla verticillata*)

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Hydrilla and Eurasian watermilfoil (EWM) are invasive aquatic plants that aggressively compete with native plants, forming dense, monotypic stands. Previous studies have established the selectivity and concentration exposure time requirements for aquatic herbicides used to control hydrilla and EWM; therefore, the objective of this research was to conduct a comparative study evaluating fluridone, triclopyr, and penoxsulam absorption and translocation in these two aquatic plants. Using ¹⁴C-labeled herbicides, absorption and translocation were measured over a 192-h time course. On the basis of differences in lipophilicity among the three herbicides (fluridone >> penoxsulam > triclopyr), we expected fluridone to have the highest accumulation, with significantly lower accumulation for penoxsulam and triclopyr. Experimental results did not support this hypothesis. Triclopyr accumulation was highest in EWM and was equivalent to fluridone in hydrilla. Penoxsulam absorption and translocation was low in both species. In addition, accumulation after shoot exposure was approximately three times greater for EWM compared with hydrilla. Shoot-to-root translocation was limited, with a maximum of 12.5% of absorbed triclopyr reaching hydrilla roots 192 h after treatment.