TIME REQUIREMENT FROM POLLINATION TO SEED MATURITY IN WATERHEMP. Michael S. Bell and Patrick J. Tranel, Graduate Research Assistant and Associate Professor, Department of Crop Sciences, University of Illinois at Urbana-Champaign, Urbana, IL 61801.

Experiments were conducted to determine the viability of waterhemp seeds at different times after pollination. A waterhemp population designated as ACR was used due to its low level of seed dormancy. Plants were grown in 7.5 L pots in the greenhouse, and seven females were isolated from males as soon as they were identified as females. Females were grown in isolation until an adequate number of flower branches had developed, at which time five of the seven females were again placed with the males. Eight flowering males were used to pollinate five flowering females in the morning by shaking the males over the females. The females were left in close proximity to the males for 24 hours, at which time the females were pollinated once more and then were immediately removed and isolated from the males. Two branches, each containing at least 500 flowers, were harvested from each female at the time of the initial pollination, designated as 0 days after pollination (DAP), as well as at multiple other preselected times after pollination based on results of a preliminary experiment. One branch from each harvest was stored at 30° C for 48 hrs, while the other branch was stored at -20° C for 48 hrs. Branches were then stored at room temperature until all harvests were complete, at which time ~20 seeds from each branch at each time after pollination were collected and stratified. Germination tests were then conducted to determine at what time seeds become viable after pollination. Preliminary results indicate that seeds become viable between 9 and 12 DAP.

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