Immature Embryo Culture of *Hydrangea quercifolia* Bartr.

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**Introduction**

*Hydrangea quercifolia* Bartr. is one of the most beautiful native shrubs in the southeastern U.S. for its great foliage color and exfoliating bark (Fig. 1). To cross it with other *Hydrangea* species, embryo rescue is needed to avoid embryo abortion during maturation.

![Figure 1: *Hydrangea quercifolia* Bartr. at UGA campus.](image)

**Materials & Methods**

**Materials:** Immature embryos of *Hydrangea quercifolia* Bartr.

**Methods:** Immature embryo was excised from ovule and sterilized at 75% alcohol for 5, 10, 15, and 20 seconds. Media were included 4 formulations (WPM, B-5, MS, ½MS). And Media sucrose concentrations were set for 1, 2, 3, 4% (Fig. 3).

**Results & Discussion:**

Embryo germination rate was affected by the alcohol sterilized time (A), media formulation (B) and sucrose concentration (C).

![Figure 2: Embryo germination rate was affected by the alcohol sterilized time(A), media formulation(B) and sucrose concentration(C).](image)

*Hydrangea quercifolia* embryo germination rate and media with 2% sucrose have the best result (Fig. 2). The optimization of *H. quercifolia* immature embryo germination system should be sterilized immature embryo at 75% alcohol in 5 seconds or less, then cultured them in B-5 media with 2% sucrose. This study provides a new way to rescue the hybrids of *Hydrangea quercifolia* Bartr. before abortion. Further studies should focus on improving embryo germination rate and its micropropagation.

![Figure 3: Immature ovary and mature ovary(A). Ovules taken out from ovary(B). Excised embryo(C). Cultured in the 16h light chamber(D).](image)

**Reference**