Immature Embryo Culture of *Hydrangea quercifoia* Bartr.

Yibu Lu[1], Donglin Zhang[2], Jinying Dong[2] and Yin Yi[2]
Department of Horticulture, University of Georgia, Athens, Georgia 30602, USA
College of Life Science, Guizhou Normal University, Guiyang, Guizhou 550001, China

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 quercifoia* Bartr. at UGA campus.

Materials & Methods

Materials: Immature embryos of *Hydrangea quercifoia* 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).

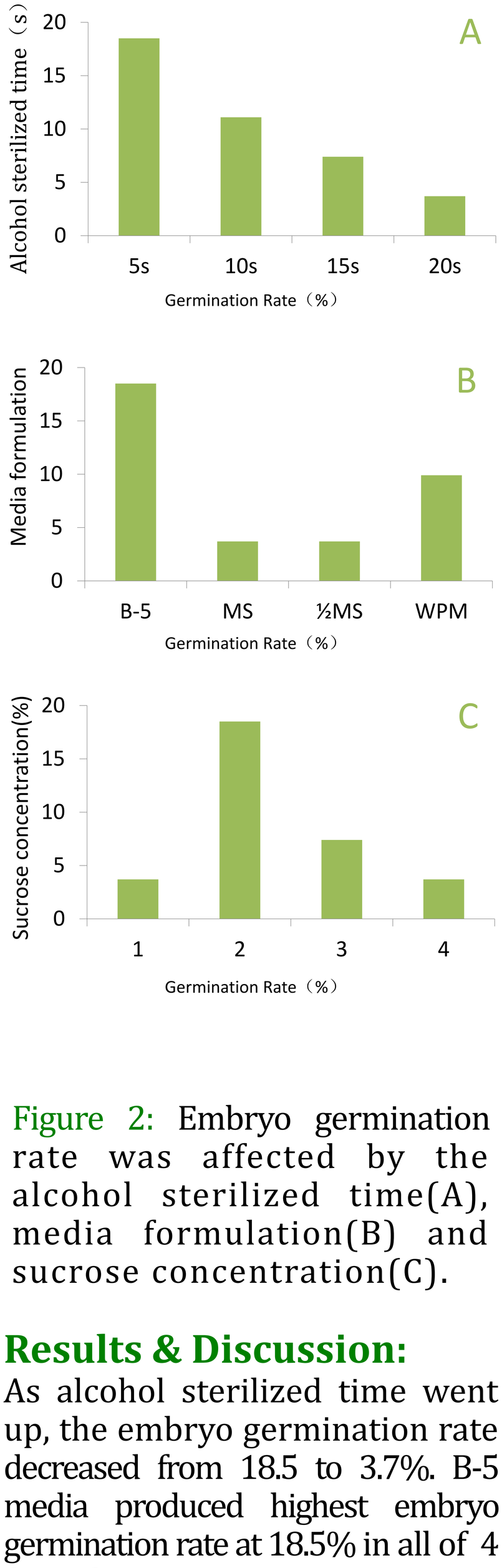

Figure 2: Embryo germination rate was affected by the alcohol sterilized time(A), media formulation(B) and sucrose concentration(C).

Results & Discussion:

As alcohol sterilized time went up, the embryo germination rate decreased from 18.5 to 3.7%. B-5 media produced highest embryo germination rate at 18.5% in all of 4 formulation. Sucrose concentrations had significantly affected on *Hydrangea quercifolia* embryo germination rate and media with 2% sucrose have the best result (Fig.2).

The optimization of *H. querifolia* 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.

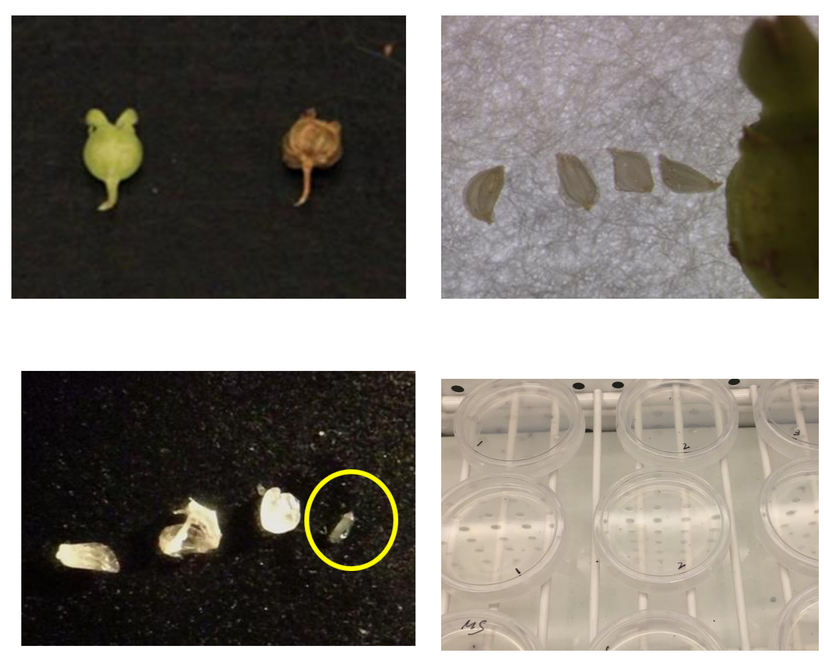

Figure 3: Immature ovary and mature ovary(A). Ovules taken out from ovary(B). Excised embryo(C). Cultured in the 16h lighting chamber(D).

Reference

Reed S M. 2000. Development of an in ovolo embryo culture procedure for Hydrangea[J]. Journal of environmental horticulture 18(1): 34-39.