

# Plant Propagation Lab Exercise

## Module 2



**UF** | UNIVERSITY of  
**FLORIDA**



### PROPAGATION OF PLANTS FROM SEED

### SEED VIABILITY TESTING LAB EXERCISE

An introduction to plant propagation laboratory exercises by:  
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# Seed Viability Testing – *Galactia microphylla*

Tetrazolium Chloride and Rolled Towel Tests are provided for two lots of *Galactia microphylla*.

Seed lots represent seeds from the current season or seeds stored 2 years in poor conditions. Evaluate the viability of the two seed lots using the results of the two test methods and prepare a brief summary of the findings.

The Association of Seed Analysts standards for evaluation of seed of the Fabaceae from the 2005 handbook are provided to assist your evaluation.

In addition to the results for this exercise review the thought questions and consider which test may be best suited for specific viability testing goals.

# Tetrazolium Testing Handbook

Contribution No. 29

To the *Handbook on Seed Testing*



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The Tetrazolium Subcommittee of the

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## FAMILY: FABACEAE II

**Post Staining Notes:** Clear with glycerol or lactic acid for approximately one hour at 35 °C (*Trifolium hybridum* will not clear due to dark pigmentation). It may be necessary to remove seed from seed coat to evaluate all tissue.



### 3. EVALUATION

#### VIABLE (NORMAL STAINING)

- entire embryo evenly stained, turgid, and unfractured
- slight damage to radicle acceptable
- radicle stained slightly darker
- small, shallow, unstained or intensely stained areas on periphery of hypocotyl and cotyledons
- half or more of cotyledons attached to the embryo axis and evenly stained

#### NON-VIABLE (ABNORMAL OR NO STAINING)

- embryo completely unstained
- embryo flaccid
- unstained, deteriorated, or fractured radicle above tip of central conducting tissue
- unstained or watery, darkly-stained areas extending to inner surfaces of cotyledons
- less than half of cotyledons remaining functional and attached to embryo axis
- damage to embryo axis

#### OTHER TISSUE/NOTES

Seed must be examined critically for mechanical damage, especially at juncture of cotyledons and hypocotyl. Immature seed may stain unevenly, or remain green. If the embryo tissue is flaccid, the seed is non-viable regardless of the color.

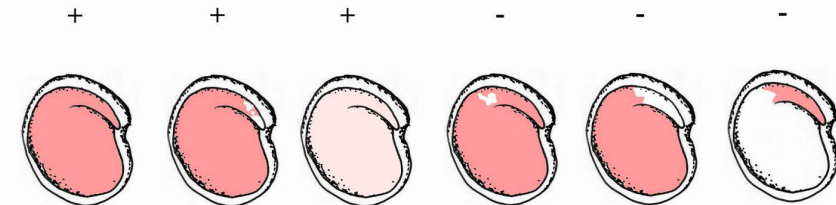


Fig 4 Seed stain evaluation


REFERENCES: 1, 2, 3, 5, 6, 7

A photograph showing two rows of Galactia microphylla seeds on a white perforated paper towel. The top row is labeled 'Current season seeds' and the bottom row is labeled 'Rolled towel test of scarified seed'. The seeds are dark brown and some show signs of germination with small white roots or cotyledons emerging. A faint watermark is visible at the bottom center of the image.

*Galactia microphylla*

Current season seeds

Rolled towel test of scarified seed

A photograph showing approximately 20 Galactia microphylla seeds arranged in a grid on a white, perforated paper towel. The seeds are dark brown/black with a yellowish-white scarification mark. Some seeds show emerging white roots. The paper towel has a grid of small holes and some brown stains. The text is overlaid on the image.

*Galactia microphylla*

Seeds stored 2 years in poor conditions

Rolled towel test of scarified seed



*Galactia microphylla*



Current season seeds



Tetrazolium Chloride test of imbibed seed





*Galactia microphylla*



Seeds stored 2 years in poor conditions



Tetrazolium Chloride test of imbibed seed

