FAMILY: LINACEAE

Genus: *Linum*

1. PRECONDITIONING:

METHODS	TIME (h)	TEMP (°C)
1. Imbibe on moist media	<18	20-25
2. No preconditioning necessary *		

* Caution: Cutting dry seeds can cause artifacts. The analyst should practice and observe from tests on known high quality seeds to see how the cutting artifacts appear during evaluation.

Notes: Imbibition time can be less than 18 hours. Observe imbibition. Cut when seeds are softened but mucilage is minimally formed. Spread seeds apart on the media to reduce difficulties handling the sticky seeds.

Morphology

Fig 1 External

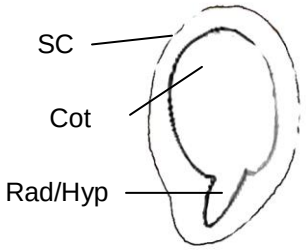

Fig 2 Embryo

2. PREPARATION AND STAINING:

METHODS	TZ Conc (%)	TIME (h)	TEMP (°C)
1. Cut laterally and remove distal end of cotyledons	0.1	overnight	30-35
2. Cut longitudinally a thin slice off edge	1.0	6-12	30-35
3. Cut longitudinally through the cotyledons	1.0	6-12	30-35

Notes: Cutting dry seeds can cause artifacts (see sec. 14.2 and 15.1.3). Keep cutting instruments sharp and use a slicing motion. Heavily mucilaginous seed coats may interfere with staining (see section 8.3.4) if the mucilage covers over the cut. Slightly mucilaginous seed coats may not interfere with TZ solution uptake. Placing imbibed seeds in 10% aluminum potassium sulfate solution for at least 5 minutes or a 2% solution for at least 30 minutes may improve handling. This shrinks mucilage but does not eliminate it.

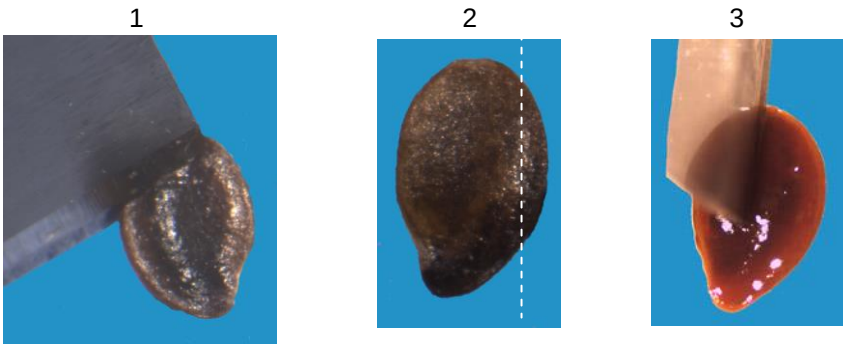

Fig 3 Preparation method

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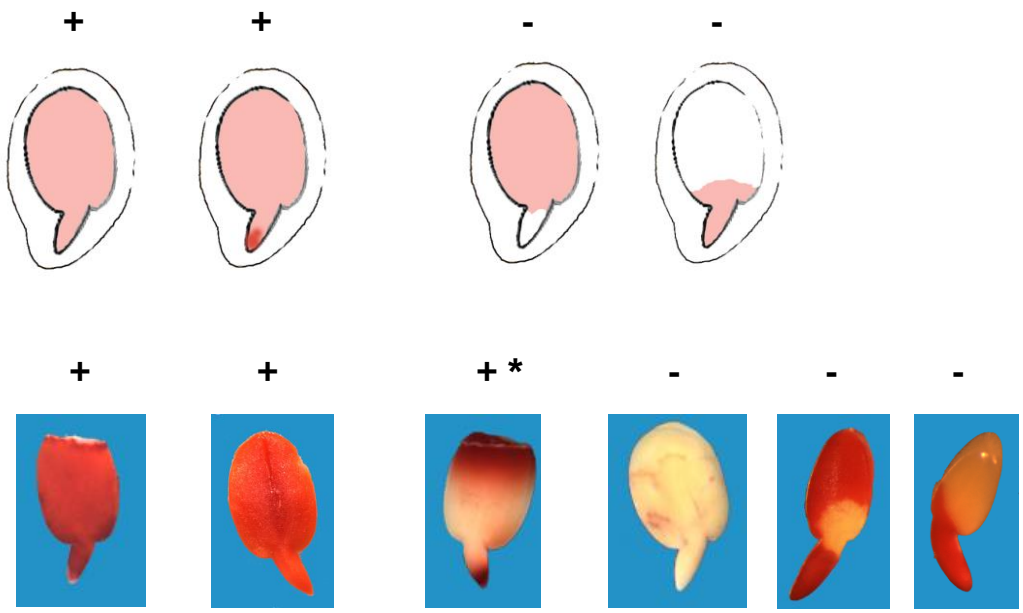
Post-staining notes: Remove embryo from seed coat. Mucilage reduction may be done after staining. See notes above.

3. EVALUATION:

VIABLE (NORMAL STAINING)
- entire embryo evenly stained, or gradually grading darker towards the cut surface
- root tip staining slightly darker acceptable

NON-VIABLE (ABNORMAL OR NO STAINING)
- any essential part of embryo unstained



* This embryo will stain more completely if left in solution longer. Seed coat was adhering tightly.

Fig 4 Seed stain evaluation