

**FAMILY: POACEAE**GENUS: *Festuca***1. PRECONDITIONING:**

METHOD	TIME (hrs)	TEMP (°C)
imbibe on moist blotters	overnight	20-25

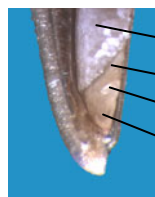
## Morphology



lemma palea



caryopsis



endosperm  
scutellum  
plumule  
radicle

embryo cross section

Fig 1 External

Fig 2 Embryo

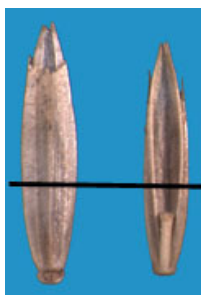
**2. PREPARATION AND STAINING:**

Note: If the seed unit is a multiple, test all caryopses and count the unit as viable if at least one caryopsis is viable.

METHOD	TZ Conc(%)	TIME (hrs)	TEMP (°C)
1. bisect longitudinally, retaining half for staining or leave seed intact at distal end.	0.1	4-12	20-35
2. cut laterally, slightly above embryo	1.0	4-12	20-35



longitudinal cut



lateral cut

Fig 3

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**Post Staining Notes:** For longitudinally cut seeds, spread halves apart to evaluate embryo.  
For laterally cut seeds, clear with lactic acid for 2 hours.



**3. Evaluation:**

**VIALE (NORMAL STAINING)**

- entire embryo evenly stained
- unstained outer edge of scutellar region acceptable

**NON-VIALE (ABNORMAL OR NO STAINING)**

- any essential part of the embryo unstained
- mottled or broken embryonic tissue

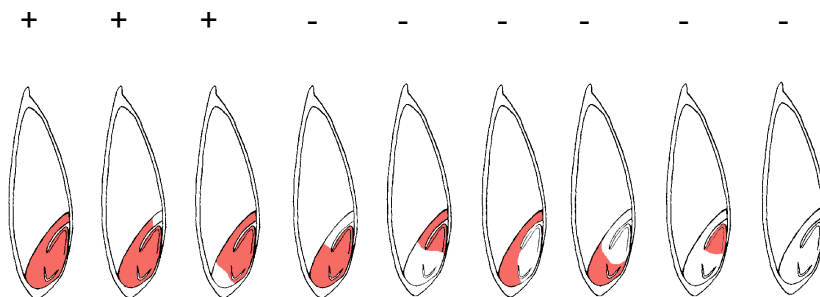


Fig 4

Lab References: 2, 4, 5, 6, 9, 10, 11, 13