# FAMILY: POACEAE

Genus: *Poa*

## 1. PRECONDITIONING:

| METHODS | TIME (h) | TEMP (°C) |
|---|---|---|
| 1. Imbibe on moist media | 4-16 | 20-25 |
| 2. Soak in $H_20_2$ (used as a bleaching and softening agent) | 3 | 35 |

Morphology

lemma palea

Fig 1 External

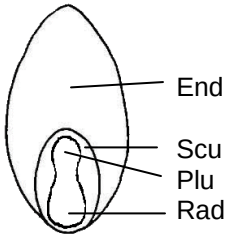


Fig 2 Embryo

Note: Embryo faces the lemma.

## 2. PREPARATION AND STAINING:

| METHODS | TZ Conc (%) | TIME (h) | TEMP (°C) |
|---|---|---|---|
| 1. Cut laterally slightly above embryo or undercut laterally beneath the embryo | 1.0 | 4-16 | 20-35 |
| 2. Pierce with a needle in central endosperm area | 1.0 | 4-16 | 20-35 |
| 3. Cut longitudinally, retaining half for staining or leave seed intact at distal end | 0.1 | 4-16 | 20-35 |

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

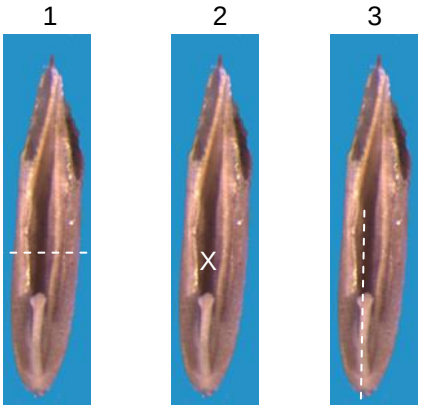


Fig 3 Preparation method

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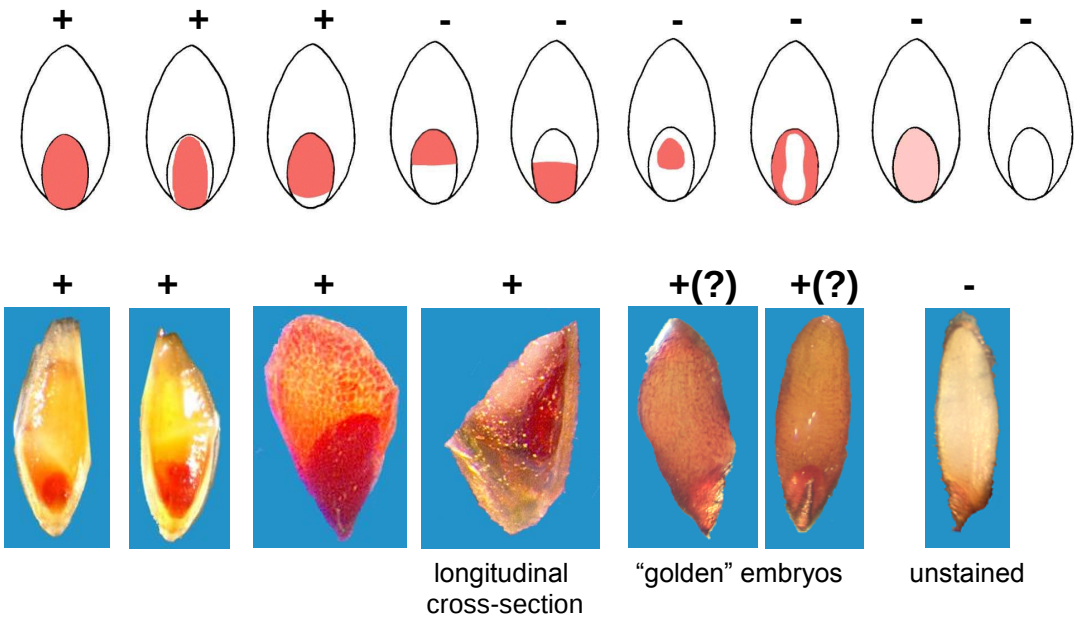
**Post-staining notes:** For longitudinally cut seeds with both halves attached, bisect or spread halves apart to view embryo. For pierced and laterally cut seeds, clear with 85% lactic acid at 30-35°C for 1-2 hours or remove caryopsis from floret.

## 3. EVALUATION:

**VIABLE (NORMAL STAINING)**
- entire embryo evenly stained
- unstained outer edge of scutellar region acceptable (see 2nd and 3rd drawings below)

**NON-VIABLE (ABNORMAL OR NO STAINING)**
- any essential part of embryo unstained
- mottled or broken embryonic tissue
- irregular or uneven margin between scutellum and endosperm

Notes: The aleurone (a layer of cells just underneath the pericarp) may or may not stain and has no bearing on evaluation.




Notes: "Golden embryos" may be viable. It's unknown what causes this condition. Additional research is needed.

Fig 4 Seed stain evaluation

Drawings: Adapted from drawings of Janet Raspet, in Miss. State University Technical Bulletin 51, 1962.
External views and right five evaluation photos: Annette Miller, USDA/ARS NCGRP
Left two evaluation photos: Diandra Viner, Biodiagnostics, River Falls, WI