

PROTOCOL TO GROW 14-DAY OLD SEEDLINGS OF MAIZE IN A GROWTH CHAMBER

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This protocol was adapted by Dr. Kazuhiro Ohtsu and Marianne Smith of the Schnable Laboratory (Iowa State University) from various sources using support from a grant from the National Science Foundation (DBI0321595). Please contact Dr. Patrick Schnable (schnable@iastate.edu) regarding questions or corrections.

An environmental control room (PGW-40, Percival Scientific, Perry, IA) was used as growth chamber.

1. Planting pots were filled with growth medium (SB 300 Universal Mix [bulk bag], Sun Gro Horticulture, Bellevue, WA) up to fill mark below the rim and placed into draining trays.
2. The growth medium was wetted with abundant tap water, and excess water was drained from trays.
3. Pots were placed in growth chamber on a metal shelf and the light intensity at the growth medium surface was adjusted to about 800 $\mu\text{mol}/\text{m}^2\text{s}$ by changing light source height.
4. Seeds were planted about one inch deep into the growth medium.
5. After several hours (4-6), pots were watered abundantly with a solution of 0.7 mM calcium nitrate [$\text{Ca}(\text{NO}_3)_2$].
6. Throughout the 2-week growing period seedlings were kept moist by watering with 0.7 mM $\text{Ca}(\text{NO}_3)_2$. Temperature and light cycles were set at 25°C with 15-hour light conditions and at 20°C with 9-hour dark conditions.
7. Germination occurred at approximately day 3 to 4 after planting.
8. Seedlings were harvested 14 days after planting.

Materials and Supplies

	Product	Supplier	Catalog #	Address/phone
Pots	3.5" wide (top), 3" deep traditional pots sqn 0350	Hummert International, Topeka	#12-1350-	1-800-798-2799
Trays	F1020	Hummert International, Topeka	11-3000-	1-800-798-2799
Shelving	Metro wire shelving	Metro	-----	www.metro.com
Light intensity meter	Quantum Meter with calibration switch	Apogee instruments inc.	Model QMSW	www.apogee-inst.com