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# Optimizing Greenhouse Rice Production: Summary of Recommendations

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## Purdue Methods: Rice (japonica)

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From: <http://www.hort.purdue.edu/hort/facilities/greenhouse/RiceMethod.shtml>

*Modified: 6/16*

	<b>Standard Production</b>	<b>Fast Production</b>	<b>Fast, Small Area Production</b>
<b>Purpose</b>	Maximum seed production	Moderate seed production	For when only a few dozen seed required and growth space limited. Suitable for growth chamber.
<b>Seed Panicles Produced</b>	About 20	About 10	About 5, reduced size
<b>Time to full flowering</b>	About 14 weeks	About 10 weeks	About 7 weeks
<b>Photoperiod Timing</b>	Short day (8-11 hour) applied <b>7 weeks</b> after germination	Short day (8-11 hour) applied <b>4 weeks</b> after germination.	Short day (8-11 hours) applied <b>from emergence</b>
<b>Duration of short day treatment</b>	1 week	2 weeks	Continuous
<b>Light intensity</b>	250 $\mu\text{mol}/\text{m}^2/\text{s}$ minimum. 500 – 1000 $\mu\text{mol}/\text{m}^2/\text{s}$ for robust growth recommended.	250 $\mu\text{mol}/\text{m}^2/\text{s}$ minimum. 500 – 1000 $\mu\text{mol}/\text{m}^2/\text{s}$ for robust growth recommended.	250 $\mu\text{mol}/\text{m}^2/\text{s}$ minimum. 500 – 1000 $\mu\text{mol}/\text{m}^2/\text{s}$ for robust growth recommended.
<b>Temperature</b>	28C light 22C dark	28C light 22C dark	28C light 28C dark
<b>Container (1 plant/pot)</b>	15-cm (6") diameter, "standard round" pot	15-cm (6") diameter, "standard round" pot	7-cm (3") square pot
<b>Root Medium</b>	3:1 ratio by volume of coarse porous ceramic ("Turface MVP") and general purpose soilless mix (Fafard#2)	3:1 ratio by volume of coarse porous ceramic ("Turface MVP") and general purpose soilless mix (Fafard#2)	3:1 ratio by volume of coarse porous ceramic ("Turface MVP") and general purpose soilless mix (Fafard#2)
<b>Plant Spacing</b>	4-5 pots per tray (tray is 10-cm x 50-cm)	5-6 pots per tray (tray is 10-cm x 50-cm)	15-20 pots per tray (tray is 10-cm x 50-cm)
<b>Watering system</b>	Constant sub-irrigation using trays with 6 cm of clear water or fertilizer solution. Timed drip-irrigation system recommended to keep trays filled.	Constant sub-irrigation using trays with 6 cm of clear water or fertilizer solution. Timed drip-irrigation system recommended to keep trays filled.	Constant sub-irrigation using trays with 2.5 cm of clear water or fertilizer solution.
<b>Fertilizer type</b>	General purpose liquid fertilizer w/ micronutrients	General purpose liquid fertilizer w/ micronutrients	General purpose liquid fertilizer w/ micronutrients
<b>Fertilizer strength</b>	200 ppm N (200 mg N/liter)	200 ppm N (200 mg N/liter)	200 ppm N (200 mg N/liter)
<b>Fertilizer frequency</b>	Apply fertilizer to maintain soil EC at 3.0-4.0 mS/cm. Suggested: Fertilizer solution applied to trays 4-5 days per week. Clear water other days.	Apply fertilizer to maintain soil EC at 3.0-4.0 mS/cm. Suggested: Fertilizer solution applied to trays 4-5 days per week. Clear water other days.	Apply fertilizer to maintain soil EC at 3.0-4.0 mS/cm. Suggested: Fertilizer solution applied to trays 4-5 days per week. Clear water other days.
<b>Algae control</b>	Drain and rinse trays twice per week or add Zeritol to water.	Drain and rinse trays twice per week or add Zeritol to water.	Drain and rinse trays twice per week or add Zeritol to water.