

Measuring seedling vigour in Australian rice varieties.

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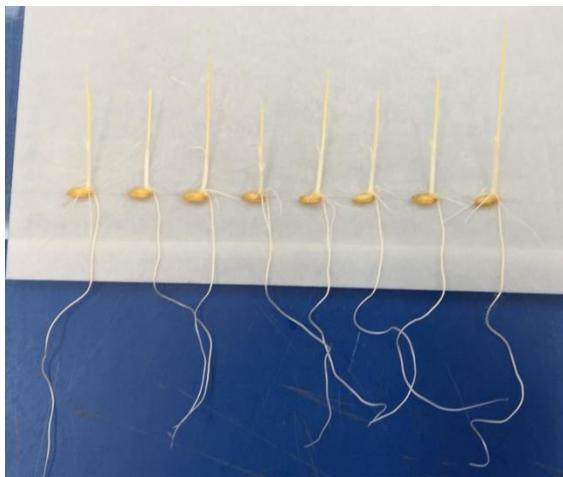
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Introduction

Seedling vigour is an important trait that can impact rice establishment, particularly when establishment conditions are not ideal. Rice establishment problems often occur due to sowing method, soil types and low temperatures and if growers know how varieties compare for seedling vigour they can select or manage varieties differently. Researchers have historically measured seedling vigour in rice varieties using slant boards in a controlled environment, but does this provide a realistic method that relates well to what happens in the field?

Materials and Methods

Twelve current Australian rice varieties were grown on slant boards in a controlled environment with shoot, root and coleoptile length measured at defined time intervals in four experiments over two seasons. To determine how this method related to what occurs in the field the same twelve varieties were grown on two soil types over two seasons in the field. Eighteen seeds from each variety were sown in 1 m rows in the field at a seed depth of 2.5 cm and replicated 3 times on both soil types. Seedling emergence was counted twice a day to determine the time to emergence and total number of emerged seedlings. To overcome potential seedling vigour differences in the seed caused by the different environmental conditions, seed for all varieties were collected from one of the first season's field experiments for use in all the second seasons slant board and field experiments.



Figures 1 & 2. Rice seedlings established on slant boards and seed being sown using the field method

Results and discussion

From initial observations it appears that the slant board method does show a similar ranking of varieties as occurs for seedling establishment in the field. Results from these experiments are still being statistically analysed and are therefore not presented in this abstract. Once the statistical analysis is complete a comparison between methods and differences between varieties will be discussed.