

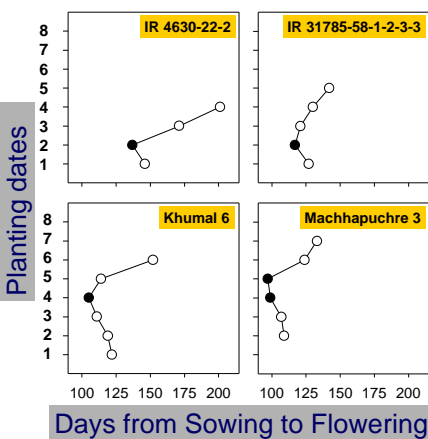
Introduction

The rice-wheat crop production system in Nepal includes a pronounced Dry-to-Wet-Transition fallow period between wheat harvest and rice transplanting. To exploit nutrient and water availability, this transition period can either be shortened, allowing a third crop to be grown, or extended to increase the time for rice production, by changing the planting date of the rice. Shifting the planting date in the system requires rice genotypes adapted to the new growing environment. Crop duration is influenced by plant development, which is known to be influenced by the photo-thermal environment. We derived photo-thermal constants for new rice cultivars using the phenological model RIDEV to design cropping calendar options.

Conclusions

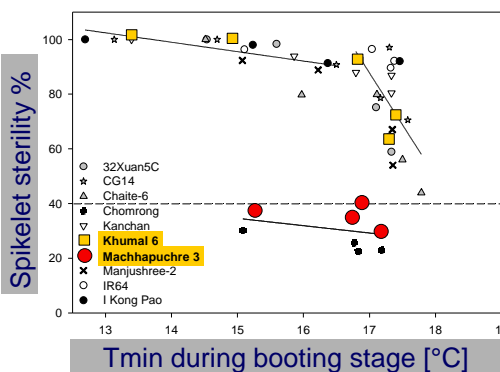
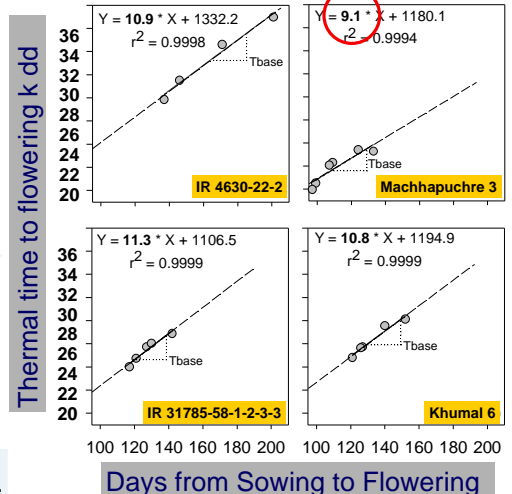
- Photo-thermal constants derived experimentally in Nepal differ from those determined earlier for the Sahel.
- RIDEV could only partially simulate rice phenology for Nepalese conditions.
- Rice planting date could be shifted within the rotation to earlier or later dates.
- Field validation of the different theoretical options is needed.

Results - Summary



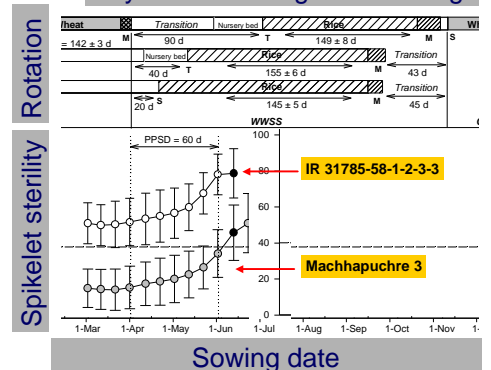
Duration to flowering differs as a function of planting date and genotype

Experimentally derived thermal constants differed among the cultivars

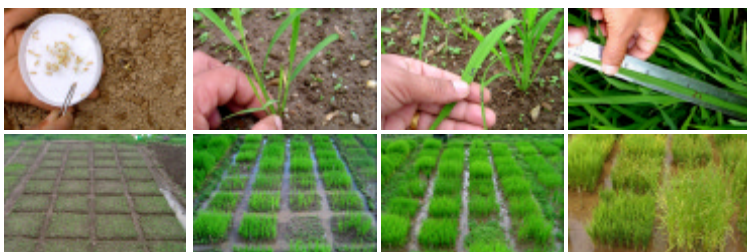


Cold sterility risk is high. Machhapuchre 3 is a promising chilling tolerant local variety. Simulation with RIDEV only partially successful

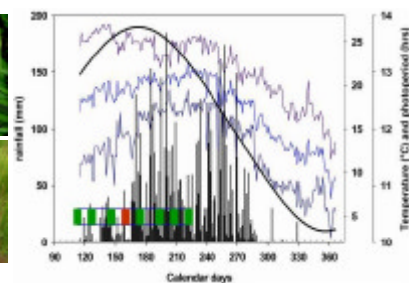
Several options for shifting rice planting dates need to be tested for the low sterility risk period



Notes on Materials and Methods



Rice garden in Lumle in 2005



- 32 genotypes were planted in a rice garden in Lumle, Nepal
- Eight planting dates staggered at 15-day intervals
- Appearance and development of individual leaves were observed
- Leaf development was calculated from total leaf duration
- Germination, panicle initiation, booting, heading, flowering dates were recorded.
- Yield and yield components were measured at maturity
- RIDEV was used to calculate duration and sterility risks