

**Entry No. IRRC-0088**

Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Mechanization
Keyword 2	:
Keyword 3	:
Title of Entry	: From research to current status - mechanized rice production for improving quality and cost reduction in Laos PDR
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Select only one type of presentation

: 15 minute oral presentation

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Abstract

: Mechanized rice production has started to impact quality improvement and cost reduction in Laos. Synergistic effects from mechanization technology such as rice seed drill, transplanter, combine harvester, optimum time of harvesting, drying methods and other factors associated with adoption of mechanization are discussed. Yield of crops established using drill and transplanter were 26% and 16% lower than hand transplanted crops from over 200 crops planted with different establishment methods in farmer's fields (5 villages in 3 seasons). However, the labour requirement was greatly reduced compared to hand transplanting and crop establishment cost was halved with transplanter and reduced by around 80% with the drill. Combine harvesting efficiency was determined from over 400 fields (6 seasons) varying in size, varieties grown, crop establishment method and crop conditions particularly lodging at harvest. Combine harvesting efficiency was around 3ha/day in small fields (<1,000 m<sup>2</sup>) and increased to 5ha/day with the increase in field size (2,000-3,000m<sup>2</sup>). Lower efficiency was obtained in wet compared to dry season, and crops broadcast compared with transplanted or drill seeded. Photoperiod sensitive, long duration varieties tended to have lower combine efficiency. Increase in combine harvesting efficiency by 50% with increased field size would increase the net income of combine harvesting contractors by around 50%, and this would allow them to reduce the combine harvesting fees. Drying methods affect head rice recovery (HRR) which is also related to time of harvest. When rice was harvested by hand at 25, 35 and 45 days after 75% flowering (DAF), highest HRR resulted when rice was harvested at 25 days (40.9%). Delaying harvest to 35 (32.0%) and 45 (10.4%) DAF resulted in significant reduction. Crops harvested by combine at 25 DAF and dried with flatbed dryer improved HRR (46.5%) compared to sun drying (34.8%). Sun drying only in the morning improved HRR compared to whole day drying. HRR was negatively related to broken rice. The requirement of all actors in the rice value chain working together to advance mechanized rice production is emphasized. Further research requirements are also discussed, including development of varieties suitable for mechanized rice production

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