

# Study on machinery improvement of deep-layer fertilizer and pesticidal application in the paddy field

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## Abstract

1. The transplanter of local production was fitted with deep-layer fertilizer application. This machine could be worked four row rice plant fertilizer application at the same time. It took forty minutes to finish 0.1 ha.
2. The outpour dose of fertilizer by operated machine is very stable. The fertilizer dose flew within the time unit could be controlled by turn speed of convey axle and outpour regulator.
3. The drop applicator is better than row one. The drop application apparatus had to attach to the deep application machine. The diffusion distance of each drop was about 14.37 cm and 24.61 cm between two drops.
4. The aprayer attached to power transplanter and the power of transplanter engine exported to the central axle of operated machine. The original belt wheel 5" changed to double grooves style and the power leaded to transmit pump of sprayer.
5. Six machine of power deep-layer fertilizer application were manufactured during the second rice crop in 1984. The results indicated that reduction of dose of nitrogen, phosphorus, and potassium were 32-57 kg/ha, 4-17 kg/ha and 34-78 kg/ha respectively. The advantage of this improvement machine was not only reducing the fertilizer application time but also increasing 7.7-23.8 % yield.