RICE TRANSPLANTER

BENEFITS OF USING RICE TRANSPLANTERS

Increased Efficiency:
Rice transplanters can significantly enhance productivity by transplanting thousands of seedlings within hours. This process would take days or even weeks if done manually.

Consistent Planting:
These machines ensure uniform spacing and depth between each plant, optimizing growth conditions and enhancing crop yield.

Reduced Physical Strain:
By automating the transplanting process, rice transplanters reduce physical strain on farmers compared to manual planting.

Cost-Effectiveness:
Transplanters save time and labor, allowing farmers to manage larger areas of land with fewer workers can be a source of added income when rented out to other farmers.

WALK-BEHIND RICE TRANSPLANTER

WALK-BEHIND

A walk-behind transplanter is a type of farm machinery that is manually guided by the operator. The worker loads the rice seedling mats, starts the engine, and moves the transplanter from one end to the other across the rice paddy. Because the seedling rows are evenly spaced, a worker can walk between rows while operating the machinery. When the end is reached, the operator can simply pull the transplanter up slightly while turning to ensure that no seedlings are wasted.

TECHNICAL SPECIFICATIONS OF WALK-BEHIND RICE TRANSPLANTER

Model:	2ZS-630S1
Size LxWxH (mm):	2370 x 1930 x 920
Total weight:	188 kg
Variable Speed:	Forward two gears, backwards one gear
Fuel Tank Capacity:	10 L
Displacement:	217 cc
Diameter of walking wheel:	Φ660 mm
Operational hourly productivity:	0.1 - 0.32 (ha/hr)
Type model:	JL200-F
Engine type:	4-Stroke, Gasoline Engine
Output power / Speed:	5.63 hp / 3600 r/min
Operating Speed:	0.28 ~ 0.77 km/h
No. of Transplanting Rows:	6
Transplanting Spacing:	300 mm
Seedling Distance (mm):	120, 140, 160, 180, 210 (Other options “250, 280”)
Transplanting Depth (mm):	7 ~ 37

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RIDING TYPE RICE TRANSPLANTER

RIDING TYPE

All over the world, a riding-type rice transplanter operates similarly to a walk-behind model, but it is often faster and has a larger capacity. Because of its speed, it must be controlled like a vehicle. This type can plant additional rows of rice seedlings, making it an ideal choice for larger rice fields.

TECHNICAL SPECIFICATIONS OF RIDING-TYPE RICE TRANSPLANTER

Model:	2ZG-630G
Size, LxWxH (mm):	3090 x 2220 x 2380
Total weight:	805 kg
Engine model:	GB680
Engine type:	Air Cooled 2 Cycle
Piston Displacement:	680 cc
Power:	19.5 hp
Fuel Tank Capacity:	34 L
Fuel Type:	Gasoline
Number of Transplanting Rows:	6
Operating Speed:	0 ~ 7.2 km/h
Operational hourly productivity:	0.2 - 0.42 ha/hr
Transplanting Spacing:	300 mm
Seedling Distance:	120, 140, 160, 180, 210 (Other options “250, 280”) mm
Transplanting Depth:	10 ~ 55 mm

MANUAL AND MECHANIZED LABOR COST COMPARISON

Assumptions Used:

Cost per hectare (Manual Labor):	8,000 Php / ha
Number of Farmers Required to Plant One Ha:	10
Payment per Farmer (Manual Labor):	8,000 Php / 10 = 800 Php

WALK-BEHIND RICE TRANSPLANTER

Rental Cost per day:	5,250 Php / day
Operator Fee per day:	1,000 Php / day
Ave. Work Efficiency:	0.21 hectare/hr
Approx. Working hours:	10 hr/day
Rice Seedling Tray Cost:	3,000 Php (good for 1 hectare)
Soil Bed and Sowing:	400 Php (good for 1 hectare)

RIDING TYPE RICE TRANSPLANTER

Rental Cost per day:	6,000 Php / day
Operator Fee per day:	1,000 Php /day
Ave. Work Efficiency:	0.31 hectare/hr
Approx. Working hours:	10 hr/day
Rice Seedling Tray Cost:	3,000 Php (good for 1 hectare)
Soil Bed and Sowing:	400 Php (good for 1 hectare)

TOTAL RENTAL COST

WALK-BEHIND RICE TRANSPLANTER

Day per Hectare:	(1 / 0.21) hr/ha x (1 / 10) day/hr = 0.476 day per hectare
Unit Rental Cost per Hectare:	5,250 Php/day x 0.476 day/ha = 2,499 Php / ha
Operator Fee/ha:	1,000 Php/day x 0.476 day/ha = 476 Php / ha
Total Cost / Ha:	2,499 Php + 476 Php + 3,000 Php + 400 Php = 6,375 Php per hectare

RIDING TYPE RICE TRANSPLANTER

Day per Hectare:	(1 / 0.31) hr/ha x (1 / 10) day/hr = 0.322 day per hectare
Unit Rental Cost per Hectare:	6,000 Php/day x 0.322 day/ha = 1,932 Php / ha
Operator Fee/ha:	1,000 Php/day x 0.322 day/ha = 322 Php / ha
Total Cost / Ha:	1,932 Php + 322 Php + 3,000 Php + 400 Php = 5,654 Php per hectare

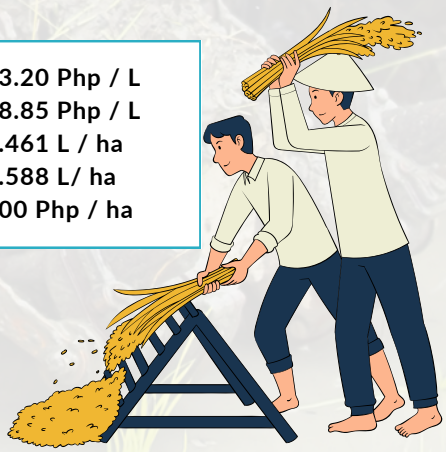
SUMMARY

	Manual Planting	Mechanized Planting	Savings per Hectare
Walk-Behind Rice Transplanter	8,000 php / ha	6,375 php / ha	1,625 php / ha
Riding-Type Rice Transplanter	8,000 php / ha	5,654 php / ha	2,346 php / ha

ADDED REVENUE IF TRANSPLANTERS IS RENTED OUT TO FARMERS

Assumptions Used:

Unleaded Gasoline Fuel Price:	63.20 Php / L
Diesel Fuel Price:	58.85 Php / L
Walk-Behind Fuel Consumption (from Instruction Manual):	6.461 L / ha
Riding-Type Fuel Consumption (from Instruction Manual):	6.588 L/ ha
Approx. Maintenance Cost:	500 Php / ha



RENTAL INCOME

WALK-BEHIND RICE TRANSPLANTER

Total Income from Rent:	6,375 Php / ha
Fuel Cost:	6.461 L/ha x 63.20 Php/L = 408.33 Php / ha
Profit:	6,375 Php - 408.33 Php - 500 Php = 5,466.67 Php / hectare

RIDING-TYPE RICE TRANSPLANTER

Total Income from Rent:	5,654 Php / ha
Fuel Cost:	6.588 L/ha x 63.20 Php / L = 416.36 Php / ha
Profit:	5,654 Php - 416.36 Php - 500 Php = 4,737.64 Php / hectare

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SUMMARY

	Income	Fuel Cost	Maintenance Cost	Profit
Walk-Behind Rice Transplanter	6,375 Php / ha	408.33 Php / ha	500 Php / ha	5,466.67 Php / ha
Riding-Type Rice Transplanter	5,654 Php / ha	416.36 Php / ha	500 Php / ha	4737.64 Php / ha

PRICE AND SPECIFICATION COMPARISON OF TRANSPLANTERS

RIDING TYPE	Dimension (mm)	Weight (kg)	Engine, PS Type	Power (HP)	Displacement (cc)	Fuel Tank (L)	Fuel	No.of Rows	Row Width (mm)	Working Speed (m/s)	Productivity (Ha/hr)	Dealer Price	SRP Price
MSK Sato 2ZSG-630G	3090 x 2200 x 2580	805	Aircooled	19.5	680	34	Gasoline	6	300	0-1.6	0.2-0.42	N/A	N/A
KUBOTA SPV 6CMD	3050 x 2220 x 1805	805	Water cooled	19.6	778	34	Diesel	6	300	0-1.65	N/A	850,000	100,0000
YANMAR VP6D	3290 x 2595 x 2330	755	Water cooled	20.5	903	37	Diesel	6	300	0-1.65	0.4	N/A	N/A
SATO MSK Advantage		More Stable			Saves on Fuel	Not Much Diff.	Easy to maintain	Same	Same	Not Much Diff.			

WALK-BEHIND	Dimension (mm)	Weight (kg)	Engine, PS Type	Power (HP)	Displacement (cc)	Fuel Tank (L)	Fuel	No.of Rows	Row Width (mm)	Working Speed (m/s)	Productivity (Ha/hr)	Dealer Price	SRP Price
MSK 2ZS-630S1	2370 x 1930 x 920	188	Water cooled	5.6	217	10	Gasoline	6	300	0.34-0.77	0.1-0.231	N/A	N/A
KUBOTA KW6	2390 x 2280 x 885	189	Aircooled	5.6	192	10	Gasoline	6	300	0.47-0.85	0.20-0.36	210,000	260,000
YANMAR AP4	2190 x 1500 x 1034	145	Aircooled	3.5	171	4	Gasoline	4	300	N/A	N/A	N/A	N/A
SATO MSK Advantage	Better Maneuvera-bility	More Stable	Cooler Engine			Longer Operation	Easy to Maintain	Not Much Diff.	Same	Not Much Diff.			

SUMMARY

From the above comparison, it can be said that the SATO Rice Transplanter has some advantage over its competitor in terms of productivity, maintenance, and maneuverability. The SATO Riding-Type Transplanter is the only gasoline-powered vehicle and will definitely be easier to maintain in the long term compared to Kubota and Yanmar, which are powered by a diesel engine.