Energy requirement for the sowing of wheat after the *in-situ* management of paddy residues

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■ **ABSTRACT :** The present study assessed the energy requirement for the harvesting of paddy with combine harvesting with/without Super Straw Management System and wheat sowing with different farm machinery having straw retention and straw incorporated in the fields. The straw retention treatments *i.e.* T_1 and T_2 whereas straw incorporation treatments *i.e.* T_3 and T_4 were taken in the study. The total energy consumption was maximum for treatment T_4 (5529.92 MJ/ha), followed by treatment T_3 (5487.47 MJ/ha), followed by treatment T_2 (3485.15 MJ/ha) and treatment T_1 (2539.40 MJ/ha). The least human energy consumption (22.01 MJ/ha), diesel energy (551.95 MJ/ha) and tractor and machinery energy (551.95 MJ/ha) was observed for treatment T_1, while the maximum human energy, diesel energy, and tractor and machinery energy was observed in treatment T_4 (52.17 MJ/ha), T_3 (3442.63 and T_4 (644.89 MJ/ha). The electrical energy (1401.78 MJ/ha) and submersible pump energy (13.68 MJ/ha) was observed in treatment T_3 and T_4, respectively. The residue retention practice of wheat sowing with Happy Seeder after paddy harvesting with combine harvester having Super Straw Management System is the efficient energy input to manage the paddy residue.

■ **KEY WORDS :** Energy, Straw management, Wheat sowing, Straw retention, Incorporation