

Tractor-Mounted Rice Huller on Zero-Tillage Frame: A Mobile Grain Processing Unit

Profile of Innovator

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Brief Description of Innovation

Mounted a rice huller on one end of the Zero Tillage frame and attached a 5 HP electric motor on the other end. The two were connected using a conveyor belt and pulley system, effectively transforming the idle ZT frame into a movable rice hulling unit. This multifunctional setup allows the rice huller to be transported easily by tractor, making it highly suitable for rural areas where mobility is key. With a processing capacity of 200 kg/hour, it requires just one person to operate. Additionally, by simply changing the sieve, the same machine can also be used for cleaning wheat grains—separating out weed seeds, under-sized grains, and other impurities without damaging the grains.

Innovation's Highlights

Integration of unused Zero Tillage frame and rice huller, 5 HP electric motor-powered mechanism, mobile and tractor-compatible, multipurpose and Low-labour requirement.



Rice huller fixed on zero-till machine



Machinery for grain cleaning fitted on zero-tillage machine

Benefits/Advantages

This approach reuses idle farm machinery, reducing waste and maximizing return on investment, while providing a cost-effective and labour-saving solution with the added advantage of mobility for operation across different farm locations. It enhances post-harvest efficiency and benefits both rice and wheat growers in the region. Through its use, the farmer earns about ₹42,000 annually, along with an additional ₹12,500 from the sale of rice husk and bran. By replacing the sieve, the same unit used for cleaning wheat grains which enables the removal of impurities (weed seeds, undersized grains, foreign particles), all without damaging the wheat grains

Scope & Potential of Innovation for Wider Reach/Out Scaling

This innovation is ideal for replication in rural areas where idle farm machinery is common. It can be promoted among farmer groups and cooperatives who often lack access to dedicated post-harvest equipment. Its low-cost adaptability and versatility make it scalable in other grain-producing regions of India. Huge scope for utility since the area comes under Rice-Wheat cropping system.

Scientific Validation required

Needs validation to assess machine durability, safety standards, energy efficiency, and long-term cost-benefit ratio.

Domain

Post-harvest processing, Farm machinery repurposing, Sustainable reuse of farm implements.