

Metal Road Ring for Tractor Cage Wheels to Prevent Road Damage

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ABSTRACT

Puddling with cage wheels is more common in India for easy and quick puddling with tractors by replacing the normal wheels with cage wheels. For attending puddling operations, the tractor cage wheel has to be brought to the field. Repeated cage wheel movements on the village roads in general and tar roads in particular, make small to large depth of indents. The average depth of indent is varying from 5mm to 18mm on earthen road, 6mm to 17mm on gravel road and 0.5mm to 6mm on bitumen road. With increase in load on tractor, the depth may further deepen and finally makes the roads unusable. In Andhra Pradesh, every year 13,000km are damaged by tractor cage wheels. The cost of restoration of damage caused by tractor cage wheels in the state is about Rs. 30 core every year on R& B. To avoid this unnecessary expenditure, a stable metal road ring that can be fixed on the surface of the cage wheel easily, which costs less and more useful is fabricated at College of Agricultural Engineering, Bapatla and was tested on different roads and at different speeds. The metal road ring developed is found to reduce the depth of indent on the order of 77% to 88% in various road conditions.

Key words : Cage wheels, Depth of indent, Metal road ring.