

Air Pollution Control from Rice Shellers - a Case Study

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Abstract : A Rice Sheller is used for obtaining polished white rice from paddy. There are about 3000 Rice Shellers in Punjab and 50000 in India. During the process of shelling lot of dust is emitted from different unit operations like paddy silo, paddy shaker, bucket elevators, huskers, paddy separator etc. These dust emissions have adverse effect on the health of the workers and the wear and tear of the shelling machinery is also fast. All the dust emissions spewing out of these unit operations of a rice Sheller were contained by providing suitable hoods and enclosures while ensuring their workability. These were sucked by providing an induced draft fan followed by a high efficiency cyclone separator that has got an overall dust collection efficiency of more than 90 %. This cyclone separator replaced two cyclone separators and a filter bag house, which the Rice Sheller was already having. The dust concentration in the stack after the installation of cyclone separator is well within the stipulated standards. Besides controlling pollution there is improvement in the quality of products like bran and the life of shelling machinery has also enhanced. The payback period of this technology is less than four shelling months.

Keywords : air pollution, cyclone separator, pneumatic conveying, rice shellers

Conference Title : ICCET 2015 : International Conference on Chemical Engineering and Technology

Conference Location : New York, United States

Conference Dates : June 04-05, 2015