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Design and Development of Simarouba Seed Shelling Machine

Simarouba (*Simarouba glauca* L.) belonging to the family simarubaceae, is one of the promising bio-fuel trees which has a potential to become a new source of bio-oil and a natural medicine for treating cancer deceases. Simarouba nutlets have a hard cover which is difficult to separate from the kernels. The conventional method of decortication is a laborious slow process. Hence, automated operated shelling for simarouba nutlets was developed and evaluated. The physical properties of the nutlets and kernels were determined. The shelling consists of a DC Motor, chain conveyor, Geneva wheel and oscillating tool. The height of the tool can be varied according to the seed size providing a higher shelling efficiency of 93.8 % with a better whole kernel recovery. The developed shelling machine is easy to operate and economical with a cost benefit ratio of 1:3 compared to hand shelling.