

Ünal H, Alibaş K (2006) Determining Of The Suitable Burning Method For Wheat Straw And Sunflower Stalks. Journal of Applied Sciences 6(2): 435–444.

Abstract

In this study, it was aimed to determine the suitable burning technique and grate type of wheat and sunflower stalks. Wheat and sunflower stalks were burnt in three different forms. In the first form, wheat straw was burnt in bale slices, sunflower stalks as it was removed from the field; in the second form, both stalks were burnt after being chopped without being compressed; and in the third one after being chopped and compressed in polyethylene bags. Three different grates with circle, oblong and mixed (circle+oblong) holed were used in the boiler. Fuels were burnt in the grates in three different forms, i.e., by front natural draft, bottom natural draft and bottom fan blowing. In the study, the highest boiler efficiency for the 1st forms of wheat and sunflower stalks were found as 25.7 and 25.1% in front burning with circle holed grate. The highest boiler efficiency in the 2nd form trials were obtained under front burning conditions with circle holed grate, being 35.8 and 30.5% in wheat straw and sunflower stalks, respectively. The highest efficiency in the 3rd form trials were obtained in the burning type bottom fan blowing and mixed holed grate with bottom fan blowing and circle holed grate in sunflower stalk with 30.9%. Low O₂ values were obtained for front burning conditions in all three grates for the 1st forms of fuels, in the chimney gas measurements of wheat and sunflower stalks.