

A possibility of saving energy in cooking rice

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The wastage of energy in the process of cooking rice in traditional methods was studied. A given mass (0.2 kg) of white rice and a suitable aluminum pot were chosen to conduct the experiment. Procedures followed by several individuals were studied. The mass of the water added, the variation of temperature of the outer surface of the pot with time during the period of cooking, the amount of water absorbed by rice and the amount of gas used were measured. A gas cooker, which has a small gas cylinder, was used in order to measure the amount of gas consumed, accurately.

The amount of water absorbed by rice during each individual's way of cooking was estimated from above measurements. The same mass of rice was cooked with the addition of water slightly more than the water absorbed by rice. The gas supply was set so that the flame spreads only the bottom of the pot and the temperature of the pot did not increase rapidly. When the water started boiling, the gas supply was controlled manually so that the temperature of the pot remained close to the boiling point of water with a minimum or no steam emanating.

It was found that the amount of rice used in this experiment could be cooked using about 20% less water than normal practice. In addition, the pot was over heated unnecessarily, in particular, during the initial period of cooking. By controlling these two factors the amount of gas used could be reduced by about 46% (on the average). The study can be easily extended to design electronically automated gas supply system to the cooker in order to reach the optimal fuel saving. Even without such a complicated system, by learning to control the amount of water used and the supply of heat through observations and practice, one should be able to reduce the energy consumption significantly.