

Thesis Title	Development of a Solar Rice Cooker
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ABSTRACT

The objective of this research is to develop and design a solar rice cooker in order to investigate the possibility of cooking rice by using solar energy in Thailand.

Three different kinds of solar rice cooker were designed and tested in this research: one with a single reflector, one with double reflector and the other one with parabolic reflector. The dimensions of the hot box are as follows 30x60x15-cm. Investigation was performed cooking 500-g rice in a ratio of 1 part of rice to 3 part of water. Tests were done during two periods 9.00 to 12.00 a.m. and 12.00 a.m. to 3.00 p.m.

The result turned out that solar rice cooker with double reflector gave the highest temperature in the hot box. The solar rice cooker with single reflector came in second place. These two types required 2-3 hours to get rice cooked respectively. For solar rice cooker with parabolic reflector, heat loss was important leading to limited performance. Therefore, it is still need further development.

Finally, this research pointed out that there is a great possibility to cook rice by using solar energy in Thailand. Moreover, solar rice cooker gave almost the same quality of rice as cooking with other type of rice cookers with relatively reasonable time. As the cost of solar rice cooker is rather low about 1,000 bath, the potential for its promotion seems, therefore to be very viable.

Keywords: solar rice cooker / cooking / concentration / low cost