# Evaporation Rate Enhancement in a Traditional Salt Pond using a Natural Halal Water-Absorbing Material

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**Abstract.** Indonesia is the fourth longest coastline in the world, but the vastness of Indonesia's coastlines does not guarantee that Indonesia's salt needs are met. Indonesia still imports salt for consumption and industrial purposes. Salt production in Indonesia is mostly carried out conventionally using the evaporation method in salt ponds by salt farmers. The disadvantages of this method include the high level of air humidity and the short dry season in Indonesia as well as the limited land area for salt ponds. As a result, the production process takes quite a long time, the quality of the salt produced is low and the production quantity is less than optimal. In the process of evaporation of water in salt ponds, the area of mass transfer is only as large as the area of the pond. In order for the evaporation process to run quickly, a larger surface area for water evaporation is required. The use of water-absorbing materials arranged regularly using the immersion method in salt ponds can increase the mass transfer surface area so that salt production is faster. This research is intended to provide solutions to salt farmers in increasing the productivity and quality of the salt produced by an innovation to increase the surface area in the pond evaporation process by immersing a halal natural water absorbing materials into the ponds. The aim of the research is to carry out surface area tests on a laboratory scale prototype of a traditional salt pond equipped with water-absorbing media from a halal natural material. The seawater raw material used for the research was obtained from a pond owned by a partner salt farmer from Jeneponto Regency. The results showed that the addition of water-absorbing media significantly accelerated the evaporation of the brine. The greater the evaporation surface area, the faster the evaporation process will be. This may result in the increase of salt production.

**Keywords**: **evaporation, immersion, halal water-absorbing media, surface area, traditional salt ponds**