

## **Performance of Bubbler Irrigation System for Large Size Date Palm Trees Farm**

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A field study was conducted on bubbler lines of date palm trees rows in large farm in Gassim, Saudi Arabia. The farm has more than 200,000 trees, irrigated by bubbler irrigation system fed by 20 wells with an average water static level of 150 meters. Bubbler lines were designed to feed an average of 20 date trees, with an average flow rate of 10.7 liters/min per bubbler. The aim was to evaluate the performance of the bubbler system for improving the farm water management.

The results have indicated that due to high pressure losses and lower pump efficiency, the uniformity of distribution was low with an average of 73 %. Pump evaluations have shown that pump performance was also low an average efficiency of 60%. The reasons for the low performance were discussed and some recommendations were made to improve the bubbler system network.