

EXPLORATION AND DEVELOPMENT OF GEOTHERMAL WATER RESOURCES FOR  
AGRICULTURAL USE IN JAPAN

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Geothermal resources are most frequently exploited for the generation of electricity and recreation in Japan. Agricultural uses of them, however, have a longer history. Indoor floriculture and vegetable farming have been common fields using geothermal energy in agriculture. Geothermal resources developed for agriculture are generally restricted to those related to recent volcanic activities or the residual hot water discharged from geothermal power plants. Geothermal water in deep sedimentary basins have recently begun to be exploited for agriculture.

In 1980, Agricultural Structure Improvement Bureau, MAFF, initiated Geothermal Water Exploration Project series to promote agricultural use of geothermal resources. The purpose of the project series is to exploit geothermal resources for agricultural uses where a considerable extent of farm land is present and where utilization of geothermal energy for agriculture has not been active so far but is fairly probable in the near future. The operation term of one project is 3 years and one project covers 2-3 prefectures. As of 1988, 3 projects have completed and 3 are in operation. During the operation period, extensive geological and geophysical data are collected and examined in the first year. In the subsequent 2 years, 2 drillings are carried out at 2 places which are found through geological surveying, gravity anomaly measurements, radioactive and geochemical prospecting and so on.

Although agricultural uses of geothermal resources still have many technical problems to be solved and although economic circumstances are not in favor of the exploration of geothermal resources because of the current low oil prices, we intend to continue the project series to help improve the productivity of agriculture.