
The development of smart shipping container farm technology under low carbon fuel engine electric generator

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The needs of farming fields in the central city pose a significant impact on the distribution speed and cost. However, the fast development of industrial and residential areas makes it difficult to cultivate fields among these infrastructures. The vertical farming technique has been a popular choice since it is flexibility and does not require a large amount of farming field. The accuracy of the controlling environmental factor and the nutrients needed by a plant make the harvest quantity, quality, and succession rate increase significantly. However, controlling the environmental component demands a significant quantity of electricity that makes the farming cost very high. This investigation applies vertical farms in the shipping container box. The box is a ready-made structure that is easy to move and may be stuck up to preserve farming land, making it an excellent choice for cultivation medium. The DME fuel applied to the diesel engine (DME engine) was used for the self-sustained electric generator. DME (dimethyl ether) is a promising alternative fuel for diesel engines, offering potential benefits like lower particulate matter emissions and a high cetane number. The investigation not only analyzes the cultivation process but also the energy cost to produce the optimum crop by using self-generated electricity by using a DME engine compared to electricity produced by the company.

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