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### Process design of production of essential oil from *Pimentaracemosa*

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**Abstract:** This research presents the potential of producing essential oils of *Pimentaracemosa* to be widely applied into the medicine field, in the production of perfumes, cosmetics, among others. An experimental facility is built for extracting with steam distillation. Results demonstrated that the highest extraction levels applying the lowest steam flow are obtained from the dry and whole leaves. With these results and considering the demands of the study, a technological daily production flow of 62.4 kg is set as proposal. A procedure for designing the process where the mass and energy are considered for determining the capacity of the equipment is applied. The technical investment indicators show a net present value of 806,932.56 USD, an internal rate of return of 46% and the investment is recovered approximately in 3 years. An environmental technical analysis for proposing solutions for the deposition of residuals is done.

**Keywords:** *Pimentaracemosa*, essential oil, steam distillation, process design.

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