

Identification and Promotion of Technology Transfer on Herbal Pharmaceutical Field in Indonesian State Universities

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論文題名 : **Identification and Promotion of Technology Transfer on Herbal
Pharmaceutical Field in Indonesian State Universities**

(インドネシアの国立大学の薬草製剤分野における技術移転の実態とその促進)

区 分 : 甲

論 文 内 容 の 要 旨

This research focuses on the identification of technology transfer activity and problem in Indonesian state universities, particularly in the herbal pharmaceutical field. This study further seeks a viable governmental policy and possible measures to enhance the performance of university technology transfer in Indonesian state universities. Also, it intends to encourage university and industry to engage in the development of herbal pharmaceutical fields actively. Collaboration between university and industry is expected to fulfill the hopes of government and public on the availability of a safe and high quality of herbal medicines products.

The author conducted empirical as well as a literature study to carry out this research. I started this research by observing and describing the outlined structure of technology transfer activities on herbal pharmaceutical products in Indonesian state universities, specifically in two universities, i.e., Bogor Agricultural University and the University of Indonesia. The author conducted an empirical study of the practice in these two universities, by means of in-depth interviews with their insiders who are involved in university technology transfer. At the same time, through literature study, the author observed the reality of the herbal pharmaceutical industry in Indonesia and tried to find out how universities could contribute to the development of the herbal pharmaceutical industry. In this Part, the author also identified obstacles and gaps faced by universities and industry. Additionally, the author elaborated on the issue of uncertainty feature of transaction cost theory. Whereas the uncertainty elements brought an impact to the potential collaboration between university and industry, and raised the cost of a transaction when the collaboration occurred (Part 1). Through the identification of the key players both in universities and industry, as well as their roles, demands, and frustrations by means of the said study, this thesis identified that obstacles and gaps faced by the universities and industry create frustration and may hinder university-industry collaboration.

It often arises that one of the common issues on technology transfer is the ownership rights. Through the study, the author found out that the ownership rights issue was not the only problem in technology transfer, particularly in Indonesian state universities (Part 2). Other elements may also influence the activity of technology transfer. Other elements, which influence the activities of technology transfer to become active, are difficulties to find counterparts in commercializing university products and funding for research and commercialization (Part 3). Although several measures have taken, it is not sufficient to boost the technology transfer at both universities.

Next, the author identified the mutual demands between industry in the herbal pharmaceutical field and universities. Further, the author found out how universities could contribute to the herbal pharmaceutical industry. The author suggests some strategies that could be employed to improve the safety and quality of herbal pharmaceutical products (Part 4). Subsequently, the author identified institutional challenges faced by both BAU and UI, in conducting technology transfer (Part 5). I found that several elements of technology transfer are still lacking. Both universities need to fix each lacking element to lessen its impact on the technology transfer process.

Subsequently, the author tries to draw a lesson from the experience of Kyushu University and Prefectural Industrial Technology Centers. Kyushu University AiRIMaQ has been experiencing in carrying out

university technology transfer. In addition, Prefectural Industrial Technology Centers have been experiencing in facilitating industrial development concerning research activities. Those institutions' experiences give hints on how to overcome the obstacles and fill the gaps faced by university and industry in the Indonesian situation (Part 6). Finally, in consideration of the findings outlined above, the author proposes strategies and recommendations that are likely to promote the university technology transfer, as well as the productive university-industry relationship (Part 7).