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CHULALAK PACHARATHIP: SURVEY OF IMPORTED AND LOCALLY  
PRODUCED RAW MATERIALS USED IN PHARMACEUTICAL INDUSTRY IN  
THAILAND. THESIS ADVISORS: PETCHARAT PONGCHAROENSUK, Ph.D.,  
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The objective of this research was to study and recommend pharmaceutical raw materials with potential for future local production in Thailand. Data were collected from 3 sources; local drug manufacturers, the Thai Food and Drug Administration (FDA) and the Thai Customs Department. For the drug manufacturers survey, of questionnaire was mailed twice, in February to April 1997 and January to March 1999. The first questionnaire was sent to all 176 manufacturers in Thailand, asking for their opinion about development of local production of raw materials and the quantity and value of raw materials used during 1994 and 1996. After the second round of questionnaires were sent, there were 26 (15%) usable out of 28 returned questionnaires. Since the response rate of the first survey was low, a second survey was done again in January 1999. A new questionnaire was constructed to make it much easier for respondents to reply. We also excluded the small manufacturers from the survey, thus 148 manufacturers received the questionnaire. The respondents were asked to put the quantity of raw materials used in 1997 and 1998 of each of the 487 names of raw materials listed, and whether local production was recommended. According to the 52 returned usable questionnaires (a response rate of 35.86%). The top five active ingredients with highest quantities used were paracetamol, aluminium hydroxide compressed gel, vitamin B6, amoxycillin, and aspirin. The top five non-active ingredients with highest quantities were glucose, alcohol, dextrose, glycerin, and formaldehyde.

Data from the Thai FDA used were market values of finished drug products gathered from local manufacturers as well as importers. The values of finished drug products with single active ingredients (excluding drug products with multiple active ingredients) in 1994 and 1995 were collected for 10 pharmacological classifications of drugs with the highest wholesale volume. Antibiotics were the drug group with the highest consumption. Data from the Customs Department were quantity and market value of groups of imported pharmaceutical raw materials in 1995 and 1996.

From the three data sources, it is recommended that in addition to analgesics and penicillins which have already been manufactured in the country, three more groups of drug products with high local consumption volume and potential for export are possible candidates for local production. They are NSAIDS (Non-steroidal anti-inflammatory)--ibuprofen, diclofenac and piroxicam; H<sub>2</sub>-receptor antagonists for gastro-intestinal drugs--cimetidine and ranitidine; and antibiotics particularly cephalosporins--ceftriaxone and cefotaxime. These drug products with established markets locally and internationally, could be profitably produced in Thailand.