

Pharmaceutical Research Centre, Darou-Pakhsh Company, in Tehran. However, this Institute has had a much smaller output of published papers, with only 10 publications published during the years 1985 to 1990.

While there were varying levels of sophistication in the Iranian centres of research, no significant evidence was found of a genetic engineering or recombinant DNA research program.

The Razi Institute reported the capability to make 20 million doses of *Clostridium perfringens* vaccine for veterinary purposes on an annual basis in Iran. This is clearly a very large-scale effort in vaccine production.

4.2 Patterns of Publications

One of the basic findings of this study is that Iranian research publications grew dramatically in the 1970s, peaking in 1978 and then falling to a low output in the early 1980s. While there was a subsequent recovery in 1988 to 1990, the levels of research publications did not return to the level of 1978. The pattern found in this study of Iranian biological and toxin research can be compared to the pattern that other studies have found for Iran's neighbour, Iraq. (The major trend in Iraqi biological research reported in other studies can be described as follows. Initially, there was low number of publications which showed a major increase from 1979 to 1981. After this peak of publications, there was a decrease during 1983 to 1985. Following this, there was another large increase. This is in some contrast to Iran which did not have a subsequent resurgence in research publications