

B. Technology Absorption, Adaptation and Innovation**i. Following initiatives were taken by the company towards the technology absorption, adaptation and innovation:**

1. A plant for the production of a widely used herbicide was commissioned. The product of desired quality and cost effectiveness is now produced on regular basis.
2. An auxiliary chemical used in a leading herbicide formulation product started to be manufactured indigenously to ensure supply of the chemical with desired quality and reduced cost.
3. A safener used for herbicide formulations was manufactured indigenously to meet with the market requirement.
4. Twelve new pesticide formulations were commercialized for launch both in the domestic and international markets.
5. Processes for five active ingredients were developed successfully at Research and Development Centres.
6. One hundred formulations of various active ingredients were successfully developed in the Research and Development Centres for future introduction.
7. Processes were developed for the intermediates of three technicals as an initiative to be self-dependent.
8. Some of the marketed formulation products were worked upon resulting in the cost reduction.
9. The quality of many actives and formulation products were improved and the process implemented in the plant.
10. A non-agro application of Superabsorbent Polymer (SAP) was developed.
11. Continued collaboration with outside agencies like universities, research institutes and scientists in their individual capacity has resulted into innovations and new technology implementation or upgradation of the existing technologies.

ii. Benefits derived by the company:

- i. An herbicide production plant was commissioned. This will result in self-dependency and quality product.

- ii. A safener required for the said herbicide is manufactured indigenously which will result in cost benefit and reduce dependency on other suppliers.
- iii. An herbicide auxiliary chemical for the marketed herbicide was produced indigenously which will result in reduction in the cost of the formulated product and foreign exchange saving.
- iv. New products introduced globally, resulting in business expansion.
- v. Accomplishment of process development for several active ingredients will be helpful in the future implementation in the plants at commercial scale.
- vi. Industrial process development and execution will result in expansion in revenue.
- vii. Process development for key intermediates for technical will result in cost effectiveness, and quality product.
- viii. Several pre-mix formulations have been developed for future product launches.
- ix. For the existing technical products, improvement in quality and/or increase in yield have been worked out.
- x. The marketed formulations have been worked upon for improved quality and cost effectiveness.
- xi. Patent protection for the products and processes will help in reduced competition
- xii. There have been increasing number of regulatory approvals in many countries for many products which will help in faster product launches.

iii Expenditure incurred on R & D:

Capital	₹ 644.62 Lacs
Recurring	₹ 16136.39 Lacs
Total	₹ 16781.01 Lacs
Total R & D expenditure	2.27% (as a percentage of turnover)

C. Foreign Exchange Earnings and Outgo:

1.	Total Foreign Exchange earned	₹395,575 Lacs
2.	Total Foreign Exchange outgo	₹244,604 Lacs