



## Atlantis Industry Waste Minimisation Clubs Case Study GR Pharmaceuticals

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### Background

GR Pharmaceuticals is a small enterprise that has been operating for approximately 35 years. The company has 61 employees and produces about 280,000 kg of product per year. Their product range consists of traditional remedies, household medicines and first-aid products. Before joining the Waste Minimisation Club for Atlantis Industry the company had investigated and implemented various areas of improvement such as their effluent pollution reduction. The company encourages environmental activities and they are in the process of compliance with ISO standardisation.

### The Process

All raw materials are inspected and tested in the laboratory. Raw materials are dispensed to the manufacturing department. Extraction of herbs takes place for the traditional remedies. The products are then packed into various containers, such as liquid products that are packed into plastic bottles. The final packed products are shrink-wrapped in plastic, boxed and sent to the distributors.



### Identification of Waste Minimisation Options

As part of the Waste Minimisation Club GR Pharmaceuticals have formed an in-house project team to investigate all areas for waste reduction. With the help of the BECO consultant and a student the project team analysed the company for improvement options. A total of 13 waste minimisation options were identified for the plant. The waste minimisation options are listed below with their implementation status.

Waste Minimisation Option Identified	Status
1. Using return packaging for the suppliers	Investigated
2. Reduce the amount of plastic used for the shrink wrappers	Investigated
3. The amount of water and cleansing chemicals used for cleaning can be reduced by implementing a high pressure nozzle for the water hoses	Investigated
4. Sidewalls to the tables will ensure no product damaged	Investigated
5. Plastic sheets can be substituted with steel lid/covers which do not have to be replaced	Investigated
6. Awareness and monitoring of packaging waste	Implemented
7. Educate workers in waste minimisation	Implemented
8. Segregate waste in the packaging areas	Implemented

9. Re-use of water in the manufacturing process	Implemented
10. Reducing boiled water for cleaning per day	Investigated
11. Recycling of plastic bottles	Implemented
12. The reuse of water for equipment cleaning	Investigated
13. Reduce unnecessary water usage for cleaning,	Implemented
14. Reduced non-prime product by improved planning	Investigated

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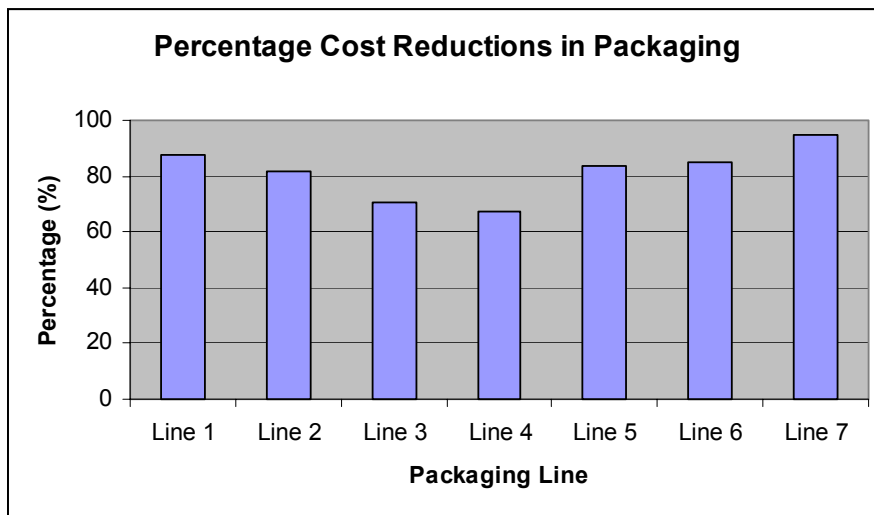
## **Implementation of Waste Minimisation options**

### ***Packaging materials***

There was a large amount of wastage in the packaging area due to poor housekeeping and machine errors. The problems experienced in the packaging department were bottles falling on the floor, incorrect machine settings, no pre-checking of bottles and overfilling of the feeding machines.

By implementing a monitoring system (daily logs) and running a waste minimisation awareness campaign for the staff in the packaging department, the packaging waste was reduced by an average 80%. The figure below indicates the reduction of waste in one week. Not all the packaging lines are in operation for the entire working week.

Figure 1: Cost reductions in packaging department



### ***Effluent pollution reduction***

The company's effluent had high COD levels due to the type of products they were producing. Once this was identified, they immediately embarked on a programme to reduce the source of this pollution and the following improvement options are now in place:

- Open drains to the municipal sewer were closed down
- Waste product in containers were removed and placed in waste drums instead of going to the sewer.
- Cleaning water of floor equipment goes into waste drums instead of to sewer.

These actions can be viewed as waste minimisation activities as implementation of the programme has resulted in management investigating all areas where efficiency can be improved.

### **Economic Benefits**

The waste minimisation activities described above resulted in the following achieved savings per year.

<b>Item</b>	<b>Implemented Savings per year</b>	<b>Payback</b>
Packaging	R 108,000	Immediate
Water and effluent	R 42,000	3 months
<b>Total</b>	<b>R 150,000</b>	

### **Environmental Benefits**

The programme of waste minimisation has resulted in the following environmental benefits:

- Less solid waste to landfill
- Reduced water consumption
- Less pollution in the effluent

### **Employee involvement**

The formation of the Waste Minimisation project team has been the catalyst to the identification of improvement options. Due to the involvement of employees in the project team the company morale has improved and employee efficiency increased. Jan van Staden who is the company janitor has taken pride in his effort to reduce waste generation at the company. His efforts have resulted in reduced disposal costs for the company as the waste bin is removed less often.

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