

RECP Best Practice Catalogue

Improving production planning
Developed within the framework of
MED TEST II



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



switchmed



The SwitchMed Programme is
funded by the European Union

Best Practice - Improving production planning

SECTOR:	Paper, printing and plastic products
SUBSECTOR:	Manufacture of plastic products
PRODUCTS	HDPE and PP bottles and jerry cans from 60 ml to 25 L
CATEGORY	Good Housekeeping
APPLICABILITY	Process
COMPANY NAME	---
COMPANY SIZE	Large

Best Practice - Improving production planning

Description of the problem (Base scenario):

Normally, the production plan at the company depends on small production batches based on client orders and market demand. This practice results in intermittent production, that necessitates the change of molds to match each product batch. The start-up of the molding machine after replacement of molds is normally associated with off-specification products as the nature of molding process (until uniform temperature profile is achieved in raw material and mold). The frequent change over also impacts the equipment availability, due to the time loss during changeover.

Description of the solution

Better production planning with clients will lead to reducing the number of small production batches and to reducing the time of molds changeover positively affecting the production efficiency. This task can be achieved through better communication between the sales team and the company clients with a goal to improve the production planning. In parallel there will be provided training of the internal dedicated team in charge of mold changeover especially on process setting and adjustment.

Best Practice - Improving production planning

Economic Benefits

Lower frequency of changeover time and increasing the production efficiency will increase the manufacturing efficiency by 0.5% leading to productivity increase by about 36.25 ton/y
Cost of 1 ton product is 937 Euro
Cost saving is 33,969 Euro/y due to production gain.

Environmental Benefits

Reduce some wastes generated on startup. Currently about 6 hr needed to stabilize the process, with 8 changeover times per week. About 48 hr needed for process stabilization (2,496 hr/y)
Annual production is 7,251 t/y from 31 extrusion mold machines.
which generates 2,066 t/y off-spec product during process stabilization.
This amount should be grinded and re-processed again through mixing of specific percentage with virgin PET.
With better production planning, about 20% reduction in changeover time can be achieved thus the amount of reduced off-spec 413 tons.

Best Practice - Improving production planning

Capital investments & financial indicators	No investment needed. Payback: Immediate.
Suppliers	In house sales and production engineers.
Other aspects	Convince customers to better anticipate their demand and to share with him benefits of better planning.
Implementation	The company started with the training of the team responsible for mold change over until investigating the best modes of communication with customers.

Best Practice - Improving production planning

Replicability sectors

The same concept can be replicated in:
Plastic industry.

Aspects to investigate for replicability

Changeover time.
Amount of waste generated on startup
Hours needed to stabilize the process
Annual production

Useful resources
