

companies use “gene guns” that shoot metal particles coated with DNA into plant tissue.

Step4: Growing the GMO. After a genetic trait has been successfully inserted into an organism’s genome, the modified organism must then be able to grow and replicate with its newly engineered genome. Biotech companies use special climate-controlled grows chambers and check on the plants by hand to make sure that they are growing as expected.

It is believed that we can evaluate the effects of using GMO only in a few generations. But now GM products are not consider to be dangerous. To learn whether GMO crops affect fertility or embryos during gestation scientists turned again to studies on rats. In this case, the rats were eating a type of GM corn with *Bacillus Thuringiensis* introduced. The scientists monitored the GMO-eating rats not only for the lifetime of one generation, but also three additional generations. For each generation, they tracked the fertility of parents and compared the health of the embryos from parents that ate BT corn to those with parents that did not. There was found no change in testicular health or litter sizes in any generation. Likewise, ingestion by pregnant mothers had no effect on fetal, postnatal, pubertal, or adult testicular development of her offspring.

Being come a long way potato appears on your table. Now its destiny in your hands.

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### **COSTS REDUCTION IN CHEMICAL INDUSTRY OF THE REPUBLIC OF BELARUS**

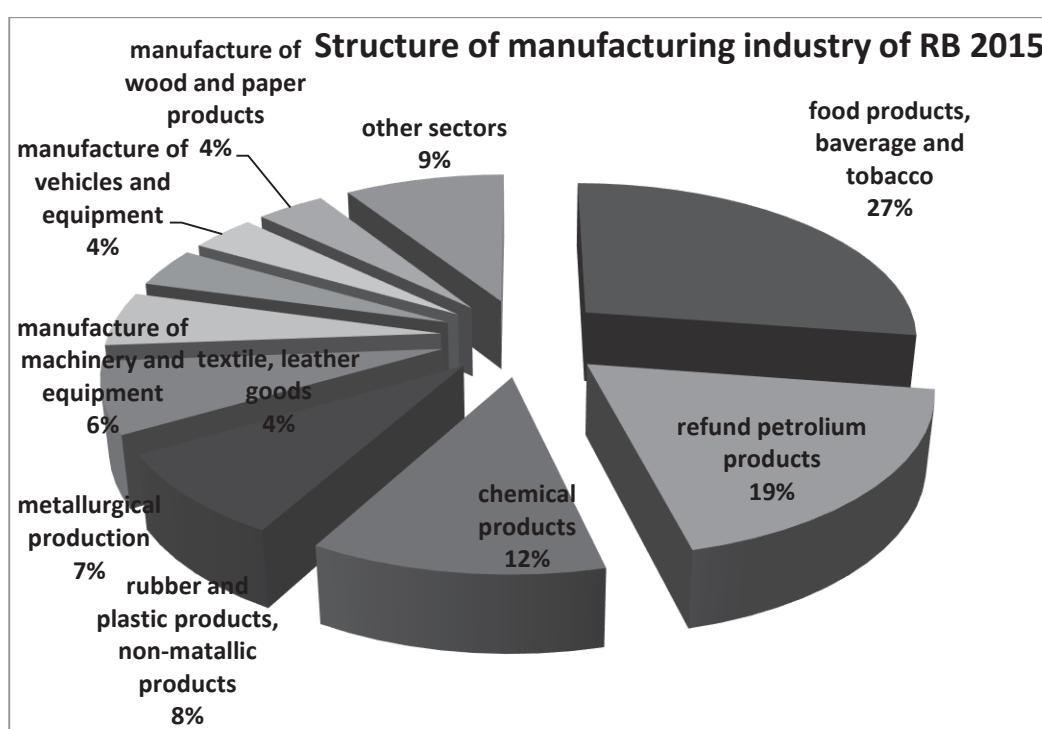
Chemical industry is one of the principal and highly-developed sectors of the Belarusian industrial complex. Branch-forming enterprises, such as Grodno Azot, Grodmohimvolokno, Mozyrsky NPZ, Belaruskaly, deal with mining, manufacturing potash fertilizers, producing chemical fibers and petrochemical goods. Official statistics proves that more than 70% of the goods, produced by this sector are sold abroad [1]. Undoubtedly chemical industry is an export-oriented branch of the Republic’s economy.

The aim of this research is to investigate the features, structure and ways of reducing costs in chemical industry of RB.

Cost of a product is the most important general indicator of a firm (enterprise), reflecting the efficient use of resources, up-to-date equipment and advanced technologies, organization of labor and manufacturing.

Economic and production activities of any enterprise are closely concerned with a great number of various expenses. Costs of products include the evaluation of natural resources, raw materials, fuel, energy, fixed assets, intangible assets, labor and other components used in the process of manufacturing goods.

The pie-chart below represents the structure of the Republic's manufacturing industry.



It shows that a significant part of the country's industrial output accounts for three main branches, including chemical industry. According to the data of the National Statistics Committee the share of chemical industry in the whole manufacturing sector accounts for 12%.

The chemical industry being a considerable part of the RB industrial complex, it would be reasonable to mention that the costs of products tend to increase in our country. The cost value of products in 2012 – 2015 increased approximately by 750 billion rubles [2]. It is obvious that the problem under consideration requires effective methods to be solved.

As for the chemical industry, the detailed review of production costs is given in the following table:

| Cost items (%)                                 | 2012 | 2013 | 2014 | 2015 |
|--|------|------|------|------|
| Material costs                                 | 77,6 | 70,1 | 68,5 | 71,3 |
| Expenses on payment                            | 9,3  | 12,6 | 13,6 | 12,5 |
| Assignments on social needs                    | 3,3  | 4,4  | 4,9  | 4,5  |
| Fixed asset depreciation and intangible assets | 5,8  | 9,6  | 9,4  | 8,0  |
| Other costs                                    | 4,0  | 3,3  | 3,6  | 3,7  |

This table reflects the structure and the dynamics of changes in products costs using expenses within the chemical industry. Manufacturing costs decreased notably from 77.6 billion rubles in 2012 to 68.5 billion rubles in 2014. Nevertheless, the decrease in material expenses was accompanied by the increases in assignments on social needs and payment. Within the reporting period these cost items grew rapidly by 31% and 38% respectively. As for the 2015, some reduction in costs is observed in all cost items, except for material costs which increased by 2.8 million rubles.

Thus, the conclusion resulting from the information above is the following: the most of production expenditure items in the chemical industry increase, this fact determines the general upward tendencies of product costs around the country. The growth of product cost implies the growth of the finished product price, and consequently the decrease in its competitiveness. In order to avoid adverse effects, specific measures for decrease in cost value of products, in view of technological and organizational features of production, should be taken by the entities [3].

Data analysis of available information is the basis for the development and implementation of effective measures for the cost reduction and in the chemical industry as well. It was found out that the cost of raw materials, along with the costs of labor, form up a significant share in the finished product cost. So, it will be reasonable to replace the obsolete equipment which consumes a great amount of energy and materials with energy-saving equipment. This step will allow to make a share of material and en-

ergy costs lower and will enhance the labor productivity. To decline costs further the automation and modernization of production processes and minimization of the number of staff is required.

Extra production (external) factors of decrease in the cost value do not depend on activities of the entities and are caused by the external environment and the state regulation of the economy. They include change of depreciation rates, rates of a payment for resources, standard rates of assignments on social protection of the population, rates for a cargo transportation and the electric power, etc. The purchase price of materials is one of the external factors that affects the cost of production. To achieve its reduction the entity has to establish the long economic relations with suppliers and subcontractors.

As a conclusion it should be mentioned, that decrease in cost value of products is a strategic task as for the individual entity and for the state as a whole. From the economic and social point of view, decrease in cost value allows to increase profit which the entity can use at discretion, including for expansion of production, upgrade of the equipment and implementation of new technologies, and also for a financial stimulation of workers that substantially influences on improvement of work performance and its efficiency. Reduction of manufacturing costs leads to the growth of profit and competitiveness of the enterprise both on the internal and external markets thereby increasing the scales of production, competitiveness and market expansion.

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