

free trade. However, it doesn't put their economies on the same level with that of developed countries that have their own technologies and attractive market. Nowadays Russia has put itself on a way that was once open for Mexico, therefore, it is necessary to consider those indexes that were determinant for the development of this country.

Opportune creation of technoparks in Mexico could alter the modern situation of this country significantly. Technoparks have a complex effect over a number of critical factors: emergence of domestic qualified scientists/workers and technologies within a country that free it from borrowing the developed foreign ones. These factors lead to an independent development of prior sectors of economy that define life quality, growth of wages, and development of domestic markets.

Russian economy must be directed for creation of technoparks that increase labour productivity and consumption potential of a market, putting itself on the same level with other participants of WTO.

References

1. McConell C.R., Brue Economics S.L. – M., 1994.
2. Tkachev A.N., Lutsenko E.V. Life quality of population as an integral criterion of effective activity of regional administration. Poly-thematic network electronic scientific magazine of Kuban state agrarian university (issue 4). – Krasnodar: Kuban state agrarian university, 2004. – Chita: Chita state university, 2008.
3. Puyana A. Economic growth, employment and poverty reduction: A comparative analysis of Chile and Mexico / International Labour Organization. 2011.
4. Statistic data of the World Bank. – Access regime: www.worldbank.org.
5. Rafael E., Iacovone L. Economic Performance under NAFTA A Firm-Level Analysis of the Trade-Productivity Linkages // The World Bank Development Research Group Trade and Integration Team. May 2011.
6. Bocharova O.N. Entrepreneurship as a factor of innovative development of Russian economy. Magazine «Social-economic phenomenons and processes» (issue 11) / Tambov state university of G.R. Derzhavin. – Tambov, 2011.
7. Babeshko I.Y., Tikhanova M.V. Technopark structures as an element of national innovative system. Magazine «Modern problems of science and education» (issue 3) / Ed. office «Academy of natural science». – Sankt-Petersburg, 2012.
8. Kalinin V.F., Ivanova S.A., Ermolayev A.E. Institutions of higher education and scientific-research institutes as infrastructure of transition to an innovative economy. Messenger of Tambov state technical university (issue 1). – Tambov: Tambov state technical university, 2007.
9. Nepp A.N., Ponomarev E., Kosarev A.S., Lepikhin A.A. An impact of currency risk over economic results of enterprises: evaluation method and its implementation. Magazine «Managing financial risks» (issue 1) / LLC «united editorship». – Ekaterinburg, 2010.
10. Nepp A.N., Lepikhin A.A., Badagova N.Y. An impact of political risks over terms of foreign trade contracts, on example of LLC «Uralmash-engineering», Agrarian messenger of the Urals (issue 9). – Ekaterinburg: Ural state agricultural academy, 2011.

The work was submitted to International Scientific Conference «The introduction of integrated models of educational institutions, implementing educational programs at various levels of education», Singapore, December, 10-18, 2012, came to the editorial office on 20.12.2012.

WORKING AND HEALTH CONDITIONS OF WORKERS OF CONFECTIONERIES

¹Sitdickov R.Z., ¹Kamayev I.A., ²Aliyeva L.M.

¹*Social health and healthcare, Federal Budget Educational Institution of Higher Professional Education «Nizhegorodskaya state medical academy» of Ministry of social development, Nizhny Novgorod;*
²*Federal State Budget Institution Central Scientific-Research Institute of Organization and Informatization of Healthcare of Ministry of social development of Russian Federation, e-mail: ali.969@mail.ru*

The article presents the results of analysis the introduced working conditions over health of personnel of a confectionery, who operate in hazardous conditions of production and work.

The received data served as a ground of developing measures, aimed to improve health of confectionaries' personnel

A problem of preserving health in given conditions, maintenance of high level of professional workability, stability against unfavourable ecological-professional factors is an urgent issue and it requires a special solution (G.G. Onishenko, 2003, A.A. Kalininskaya, 2010). Evaluating health condition of workers of a confectionary, developing measures of decrease in disease rate and optimization of ratio among persons of major professional groups is an urgent scientific problem.

Labour of specialists of waffle workshop is defined by a complex of unfavourable factors: heavy work load; insufficient illumination of working places, high level of noise. Expression and strain of their work process can be classified as moderate (class 2.0) (table).

According to parameters of microclimate conditions (air temperature, speed of air flow, air humidity) working conditions corresponded to class 2.0. General illumination of working surfaces was lower than allowed by 30-100 lux (class 3.1).

Noise level at all working places exceeded an allowed level insignificantly and corresponded to class 3.1 of working conditions. While evaluating tension of electric field under frequency of 50 HZ indexes did not exceed maximum allowed values. Class of working conditions of waffle workshop worker and confectioner depended on electric field and equaled 2.

Impact of general and local vibration over organisms of workshop workers (waffle workshop worker and engineer) did not exceed normal standards. It allowed us to refer this position to class 2 (allowed labour – moderate physical strain).

Technological processes at production areas are not linked to a discharge of hazardous chemical substances into the air. The investigation has established that working conditions of waffle workshop workers can be described as unhealthy heavy of the first and second degree (class 3.1, 3.2).

Disease rate among workers of waffle workshop according to a number of disability cases per

100 employees equaled 102,7 and is described as «over average» according to the scale of E.L. Notkin (among control group – 73.6 «below average»). And

according to a number of disability days per 100 employees it equaled 1488.6 and is described as «high» (control group – 1045,6, «above average»).

Classes of working conditions according to indexes of unfavourable factors of productive environment (waffle workshop)

Class of hazard	Worker of waffle workshop	Confectioner	Engineer of forming-packing machine	Equipment adjuster
FDP aerosols	–	–	–	2,0
Noise	3.1	2.0	3.1	2.0
General vibration	2.0	–	2.0	–
Local vibration	–	–	–	2.0
Non-ionizing emanation (EMF of 50 HZ)	2.0	2.0	–	–
Microclimate	2.0	2.0	2.0	2.0
General illumination	3.1	3.1	3.1	3.1
Work heaviness	3.1	3.1	3.1	2.0
Work tension	2.0	2.0	2.0	2.0
General evaluation of working conditions	3.2	3.1	3.2	3.1

While comparing the received data and the disease rate with working conditions of administrative workers of a factory we have revealed a statistically-significant increase in cases rate ($t_{cr} = 4,12$, $p < 0,001$) and in days of disability ($t_{cr} = 4,36$, $p < 0,001$).

While studying ration of workers we have established a composition disbalance in contents and relations of macro- and micronutrients: we have established a carbohydrate-fat direction, deficit of proteins (up to 20%), excess of carbohydrates up to 26% that was mostly expressed in age groups of 18-29 years, excess of fats (up to 12%) in groups of 40-49 years, lack of vitamins of group C, A, B, E, PP, folates from 30 to 75% that was mostly expressed in the mentioned age groups, lack of mineral substances (Ca – up to 45%, Fe – up to 12%, Mn – up to 14%) was typical for all age groups.

Under clinic investigation among 53,5% of the studied the following chronic diseases have been registered: 40% – «Diseases of digestion organs and endocrine system» (chronic gastritis; chronic cholecystitis, calculary and non-calculary cholecystitis; ulcerous stomach disease, chronic pancreatitis), among 20,0% – «Diseases of blood circulation system» (hypertonic disease), among 20,0% – «Diseases of organs of breath» (conditions after an endured acute pneumonia, chronic bronchitis). Among the attendant disease we have registered non-inflammatory diseases of female pelvic and genital organs among 20% of the studied.

During an initial investigation 40,0% of the studied had complaints about headaches, pains in right subcostal area that was often expressed after meals. 30,0% had bitter taste, 40,0% had headaches,

20,0% – back pains. A significant part of workers had complaints about fatigability, weakness.

Obesity of the 1st degree was established among 20,0% of workers. Obesity of the 2nd and 4rd degree was established among 40% of the studied. Only 40,0% of the studied workers had a normal body mass. According to the data of general blood analysis anaemia of degree 1 and 2 was revealed (6,7% each). Among 33,3% of the investigates an increased systolic arterial pressure has been registered (140,0–150,0 mm of quicksilver), among 26,6% diastolic arterial pressure was within limits of 90,0–100,0 mm of quicksilver.

According to the data of ECG, disturbances in heart activity have been registered among 33,3% of employees: sinus arrhythmia, deceleration of intratrial conductivity, supraventricular extrasystole, bradycardia, diffuse disturbance in processes of repolarization.

According to the results of US, 93,3% of workers have functional disturbances of liver, gull bladder, and pancreas: among 53,3% – chronic cholecystitis (non-calculary, calculary), among 53,3% of them – in combination with diffuse alterations in pancreas, fat hepatosis of liver (20,0%), chronic pancreatitis – among 20,0%. Besides, an increase in size of right part of liver up to 5,7% was registered among 26,6%, decrease in left part of liver up to 43,3% – among 40,0% of the studied.

While studying ration of workers we have established a composition disbalance in contents and relations of macro- and micronutrients: we have established a carbohydrate-fat direction, deficit of proteins (up to 20%), excess of carbohydrates up to 26% that was mostly expressed in age groups

of 18-29 years, excess of fats (up to 12%) in groups of 40-49 years, lack of vitamins of group C, A, B, E, PP, folates from 30 to 75% that was mostly expressed in the mentioned age groups, lack of mineral substances (Ca – up to 45%, Fe – up to 12%, Mn – up to 14%) was typical for all age groups.

Conclusion. Working conditions of workers of waffle workshop (according to heaviness of working process, indexes of illumination and noise) do not correspond to modern hygienic regulations. Working conditions of persons of major professions of waffle workshop correspond to hazardous conditions of work of the 1st and 2nd degree (class 3.1, 3.2). An impact of hazardous working conditions leads to a development of diseases of organs of digestion and endocrine system, breath, blood circulation system, and attendant diseases. Chronic

diseases were registered among 53,5% of waffle workshop workers.

References

1. Onishenko G.G. An impact of environment condition over population health. Unsolved problems and objectives // Hygiene and sanitary. – 2003. – № 1. – P. 3–7.

2. Kalininskaya A.A., Kuznetsov S.I., Vorobiyev M.V. Managing healthcare, way to re-organize the branch. Urgent problems of preventive and treating medicine // Materials of inter-institute scientific conference with international participation, devoted to 65 year date after the end of World War II. 3rd of September 2010. – M.: State Educational institution of Higher Professional Education Moscow State Medical Stomatological University of Russian Healthcare, 2010. – P. 16–18.

The work is submitted to the International scientific conference «Modern science technology», Spain (Tenerife), November, 20-27, 2012, came to the editorial office on 20.12.2012.