

Any local measures would not help. The best solution is total system rearrangement providing two independent water supply systems on the right and left banks of the river.

Drinking water supply through the river is to be eliminated due to construction of a new right-bank water treatment plant in the Kama Reservoir water pool. The inverted siphon will be used as an emergency crossover between two separate water supplies located on different river banks. The obsolete Kirovsky and Bolshekamsky WAs are supposed to be abandoned.

On the one hand, such measures will allow avoiding the above situations and, on the other hand, they will improve the quality of water supplied to the system, for construction of a new treatment plant will enable to use up-to-date and effective methods of water treatment.

The article is admitted to the International Scientific Conference "Ecological monitoring"; Turkey (Kemer) of the August 6-13, 2007; came to the editorial office on 26.06.07

ECOLOGICAL ENVIRONMENT AND HEALTH OF THE POPULATION OF THE REPUBLIC OF KAZAKHSTAN

Kaidakova N.N.

*The Kazakh Agency of applied ecology
Kazakhstan, Almaty*

The purpose of research. To estimate possible influence of the toxic substances acting in an environment as a result of activity of the enterprises of oil-and-gas branch, on a state of health of the population in the Republic of Kazakhstan.

Object and subject of research. As modeling regions the basic oil and gas extraction areas of the Republic are chosen: Mangistauskay and Aтираuskay in which territory 188 oil fields and gas or 81.7% of the deposits revealed in the Republic of Kazakhstan are located.

During the work the resource security of public health services and the basic parameters of health state of the population carried out: the demographic situation, including the analysis of number and structure of the population (1996-2005) is determined; primary and total morbidity of the population: on classes of illnesses of the whole population, adults and children. Groups: adults and children - covers 93.8% of the whole population of the Republic.

Mangistauskay oblast on primary diseases of the whole population and adults takes first place in the Republic, and Aтираuskay oblast which has as well as Mangistauskay oblast a plenty of oil-and-gas deposits, the last - 14 place on all investigated groups of the population. Taking into account high morbidity of Mangistauskay oblast population the basic researches carried out in this area.

The sanitary condition of water, atmospheric air, maintenance of the population with good-quality food, epidemiological conditions are also investigated.

Methods of research. The analysis was carried out by a method of quantitative measurement of effects of environment influence on health of the population, a method of codification, by an estimation of risk for health of environment factors and its management.

Results of research and discussion. Aтираuskay oblast population estimates 472.4 thousand person (3.1% from the Republic population), and Mangistauskay oblast - 374.4 thousand person (2.5% from the Republic population). Aтираuskay oblast urban population was equal - to 269.1 thousand person (57.0%), Mangistauskay oblast - to 263.06 thousand person (70.2%), and rural - 203.3 and 111.4 thousand person accordingly (43.0% and 29.8%). Mangistauskay oblast, undoubtedly, concerns to industrial regions as three quarters of its population live in cities, in the Republic the urban population estimates - 57.1%.

In structure of the population of oblasts the number of adults is less, than in the Republic (64.5% in Aтираuskay, 63.4% in Mangistauskay and 69.7% in the Republic), and the number of children is more than 28.6%; 30.1% and 24.2% accordingly) at equal relative quantity of women in fertile age in oblasts and the Republic (28.3%, 28.3% and 28.5%). This fact, can be connected, with higher common factor of fruitfulness in oblasts - 1.00 and 1.06; in the Republic - 0.85.

In Aтираuskay oblast from 1996 to 2005 the population has increased for 8.5%, in Mangistauskay oblast on 11.2%, and in the Republic during this period the amount of inhabitants has decreased for 5.3%. Obviously one of the reasons of population increasing in oblasts is the process of immigration or installation of the population in oblasts. There was a positive balance of migration (the number of coming and leaving): 288 person in Aтираuskay oblast and 3730 person in Mangistauskay.

The system of public health services in Mangistauskay and Aтираuskay oblasts has typical structure. The Security of the population of oblasts material resources of public health services for 11 years, basically, corresponds or exceeds middle republic level (Charges on 1 inhabitant in one year, scheduled capacity of the polyclinic organizations, security of the population with beds). Security of the population of modeling oblasts with the staff of medical workers is lower than middle republic level.

Aтираuskay oblast and Mangistauskay oblast have higher level of birth rate, a natural increase and a low death rate in comparison with republic (progressing demographic structure) that is caused by social factors i.e. the advanced infrastructure of the industry including oil and gas extraction and a high average level of wages: in Aтираuskay oblast - 415 dollars, in Mangistauskay oblast - 400 dollars; at middle republic

level - 219 dollars. Expected life at a birth of the population of both areas does not differ from middle republic level and makes about 66 years (In Russia - 64.9 years).

For 11 years the parameter of infantile death rate in Mangistauskay oblast remained at high level and has made in 2005 – 17.4 at middle republic level – 15.2. For comparison: in 2003 the given parameter in Russia made 12.4; in Uzbekistan 16.6; on the average across the CIS - 14.5 on 1000 person born alive.

The conducting reason of death rate of newborns is high incapability of fruit reserving, the number died prematurely born in 2005 has made 126.8 on 1000 person born alive, on republic - 73.7-83.1. The analysis of a parameter of infantile death rate in Mangistauskay oblast for 5 months 2005 has revealed, that - the parameter of infantile death rate is lower than that in the basic oil and gas extraction region of area territories Zhana Ozen (13.5 on 1000 born alive and 14.2 accordingly). At the same, Karakijansky area where Zhana Ozen is located, has the highest level of infantile death rate in oblasts - 24.4. Thus, influence of oil and gas extraction branch in formation of a parameter of infantile death rate is debatable and demands the further scientific verification.

The parameter of mother death rate in 2005r. in Mangistauskay oblast is one of the highest in the Republic and makes 59.7, in Aтираuskay oblast – 93.4, in the Republic – 40.5 on 100 thousand born alive, that, is probably connected with the environmentally poor - easing of an women organism and with organizational - not sufficient security of the population of oblasts by doctors of the whole specialities 31.7 on Mangistauskay oblast, 30.1 - on Aтираuskay oblast and 36.5 on the Republic on 10000 person of the population), doctors obstetricians-gynecologists on Mangistauskay oblast – 2.6, on Aтираuskay oblast 2.1 (on the Republic - 2.7 on 10000 person of the population) and not duly receipt of pregnant women under supervision of female consultation (till 12 weeks of 68.6% in Mangistauskay oblast, 55.1% in Aтираuskay oblast and on the Republic of 71.7%).

In the Republic in 90th years the regressing structure of the population took place: birth rate and a natural increase decrease, the parameter of death rate annually increased. The character of change of infantile death rate had a negative orientation. Since 2002, the demographic situation in republic was stabilized

Primary morbidity of population Aтираuskay oblast are lower than average on the Republic. On Mangistauskay oblast the highest primary morbidity of the population takes place during the analyzed period (1995-2005rr).

The first place in structure of primary morbidity of the population of oblasts and the Republic in 2005r. is taken by illnesses of system of breath. Determining factor in formation of this group of a pathology is allocated to a condition of atmospheric air. In Mangistauskay oblast this pathology makes 30.7%,

in the Republic - 39.4% that does not allow to assume causal conditionality of these diseases by oil and gas extraction branch functioning in area.

The second range in structure of diseases of the population of oblast taken by illnesses of digestion system (9.8 %), on the Republic - by illnesses of urogenital system (7.5%).

It is not excluded, that one of the reasons of defeat of a gastroenteric path of population in Mangistauskay oblast is its low security with good-quality potable water. 70.0 % of the population of rural territories of oblast are provided with imported potable water pipe, use water only 12.0 % of the population; use columns - 4.0 %; wells - 12.0%. Unsatisfactory security of food is marked in oblast, in comparison with 1990 consumption of meat and meat products has decreased as well as manufacture of milk and dairy products from 11.9 thousand tons up to 0.2 thousand tons has decreased. Manufacture of sausages, groats has completely stopped. There is no manufacture of oil creamy, vegetables, sugar. Monotonous, basically carbohydrate, meal results in functionalities easing of an organism of adults and children, backlogs children growth and development. An insufficient and unbalanced meal results anemias at women of the fertile period, frequently meeting in regions, that, in turn, can be one of the significant reasons of high infantile death rate in perinatal period.

The third place in 2005 in structure of diseases of the population of oblast illnesses of an eye - (7.6%), as body, carrying out the first contact to an environment, on the Republic - traumas, poisonings and some other consequences of influence of the external reasons (7.2 %).

In structure of primary morbidity of adult population in Mangistauskay oblast neoplasms has a level below then middle republic level, that excludes causal conditionality of these diseases by oil and gas extraction branch functioning in area. More vulnerable children's population has higher level of neoplasms, than on the Republic. However, connections of a level of children neoplasms with staing in territories of oil and gas extraction it is not traced.

The high level of primary morbidity of the whole population and children Mangistauskay oblast by illnesses of blood and congenital anomalies estimated. The number of the congenital anomalies not compatible with a life being the reason of infantile death rate, on oblast is less, than on the Republic. High primary morbidity of population Mangistauskay oblast can be a result of good revelation of diseases. The active treatment, competent primary and secondary preventative measures decrease invalidization and the death rate.

The statistical analysis has revealed presence of positive correlation of different forces of primary morbidity of the whole population by all illnesses and of breath system and emissions of substances pollut-

ing of an atmosphere in Mangistauskay oblast and the Republic of Kazakhstan.

Taking into account, that this connection is characterized as strong for the Republic of Kazakhstan and weak for Mangistauskay oblast, it is possible to conclude, that negative ecological influences of oil and gas extraction branch on population health corrects high level wages, allowing to provide the population with more physiologic feed and to raise availability of medical aid.

Conclusions:

1. Progressing demographic structure of Atyrauskay and Mangistauskay oblasts in last decade is characterized by high birth rate, a natural increase, the common factor of fruitfulness at a low death rate of the population, in oblast growth of average life expectancy that is caused by the advanced infrastructure of the industry, including oil and gas extraction, and is registered by a high level of wages of the working population.

2. The system of public health services in Atyrauskay and Mangistauskay oblasts has typical structure. Security of the population of oblasts material resources of public health services for 11 years, basically, corresponds or exceeds middle republic level. It is established by unsatisfied number of a staff of medical workers in modeling oblasts.

3. The state of population health in Mangistauskay oblast characterized by the highest, and in Atyrauskay oblast by the lowest level in the Republic of primary morbidity of the whole population by all illnesses. The structure of primary morbidity of population of Mangistauskay oblast differs from structure of primary morbidity of the population in the Republic of Kazakhstan. Low death rate of population in Mangistauskay oblast in comparison with the population of the Republic testifies to the best detectability of diseases and a high level of preventive and medical activity of public health system.

4. The statistical analysis of the oil and gas extraction enterprises on health of the population of the Republic of Kazakhstan allows to conclude, that possible negative ecological influences of oil and gas extraction branch on health of the population better a high social standard of living of the population of regions.

Recommendations. Carrying out of the further profound complex medical-demographic researches of a health state of the population of oil and gas extraction regions under the special program is necessary in view of morbidity and death rate according to age and professional groups.

The decision of questions of material stimulation of work of medical workers will allow to solve questions of security of the population of oil and gas extraction areas with doctors - obstetrician - gynecologists and to lower mother and infantile death rate.

Controls public health services in Atyrauskay and Mangistauskay oblasts can recommend introduc-

tion and perfection of activity obstetric-therapeutic-pediatric complexes, as optimal form of work on improvement of the children's and female population of area.

The constant control of sanitation and epidemiological quality of air, potable water in areas and food is demanded. The increase in financing of construction and reconstruction of water pipes will positively reflected in an epidemiological situation in area.

The article is admitted to the International Scientific Conference "Modern high technologies"; Spain (Tenerife), November 20-27, 2006; came to the editorial office on 12.10.06

NEW ENVIRONMENTALLY SAFE PLANT ADDITIVES FOR MEAT PRODUCTS MANUFACTURING APPLICATION

Shalimova O.A., Shtakhova T.A., Sinyutina N.V.
*Oryol State Agrarian University
Oryol, Russia*

At the heart of Russian food consumers' preferences traditionally there are two criteria – customs and food price. But recently a third criterion has got a greater occurrence: it is quality. This is a distinctive feature of the new food market, this is the appearance of choice, this is the sign of the fact that our producers have become interested in the consumers' preferences. The food products quality is made of many characteristics. The notion "quality" includes the conformity with the branch accepted standards, chemical constitution, biologic and energy value, biological effectiveness, ecological safety, technologies' and ultimate product's safety, equivalence of the product's composition to the human body's needs depending on the form of activity, health status, age, sex, physiological features – pregnancy, baby feeding, advanced physical or mental work load, etc.

The food-processing industry current trends stimulate the ordered composition food production planning. It is caused by the fact that no one natural commodity contains all necessary for the body substances in the amounts providing its physiological needs. One of the ways to correct the chemical constitution of meat products is using biologically active substance rich medicinal herbs in production. The formulation of meat raw stuff functional products of prophylactic and bracing properties enables the regulating for preventive and therapeutic purposes' sake finely and complexly. The influence of crude drug on forcemeat properties has been investigated incompletely. In connection with the above said the following problems were set by us: to study the biochemistry of medicinal plants growing in the Oryol Region territory, to evaluate physical-chemical and functional-processing behaviour of meat raw stuff and their application. While selecting the plant materials we were ruled by the availability and popularity of them in the