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THE RISKS OF OCCUPATIONAL DISEASES IN THE PROCESS OF USING AGROCHEMICALS ON THE EXAMPLE OF GEORGIAN STATISTICAL DATA

Abstract: Based on the specifications of agrarian sector there are different working conditions, and the requirements for work safety and hygiene are different respectively. Because The modern agriculture can't be imagined without the use of agrochemicals, it is very important to thoroughly met the sanitary-hygiene requirements of the working process and conditions of employees. In this regard it is necessary to analyze the risk-factors of occupational diseases in a right way and conduct the preventing actions in a timely manner. This everything is vital, as it's visible from the results statistical information analysis.

Key words: agriculture sector, professional diseases, special equipment.

Language: English

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Introduction

"The life of employed human, who creates material wealth, is one of the fundamental right and it has to be protected well.

The right to work means not only the right of employment, the fair compensation and proper working conditions. The inseparable part of the labor right is the right of employed to be provided by maximally safe and healthy environment of work" [1].

Materials and Methods

According the results of social-hygienic monitoring data of working conditions, on the example of Georgia, 62% of the population has to work in harmful working condition, 51% among those are women. 15% of the whole number has to

work in the conditions of high dustiness and hazardous gases, 21% - under the impact of noise, 19,2% - in vibration conditions, 27% is occupied by the heavy physical work[1]. From 2007 the catastrophically increasing tendency of fatal cases and damages related to profession has been noticed. According to the Ministry of Internal Affairs, in 20110, the number of injured people during the work was 102, the number of death - 42. During 2011 the number of injured was 137, number of death – 54. These statistics doesn't say anything about the workers poisoned by the chemicals and pesticides, while the high productivity of the agrarian field, besides the heavy physical work needed constantly, is directly proportionally dependent on the use of chemicals and other biologically active substances. Mentioned mterials damages the human health,

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because they may easily get into the body by the direct contact, as well as through the respiratory system. The danger of touching chemicals to the skin is especially common. The migration of them happens through the skin (as it is one of the organ for exchanging substances), which causes not less, but possibly more damage than getting through the respiratory system.

According to GeoStat, currently about 62% of the Georgian population is employed in agrosector. The monitoring, conducted with the purpose of studying the conditions on the agricultural locations, showed that the work hygiene and sanitary-technological norms are not met. The issue is taken under the control of many developed countries. In particular, the constant monitoring is conducted about the protection of labor conditions and administrative actions take place in case of legal entities, as well as of sole proprietors. The interest of the state is emphasized with the large weight of costs incurred by the government for healing and

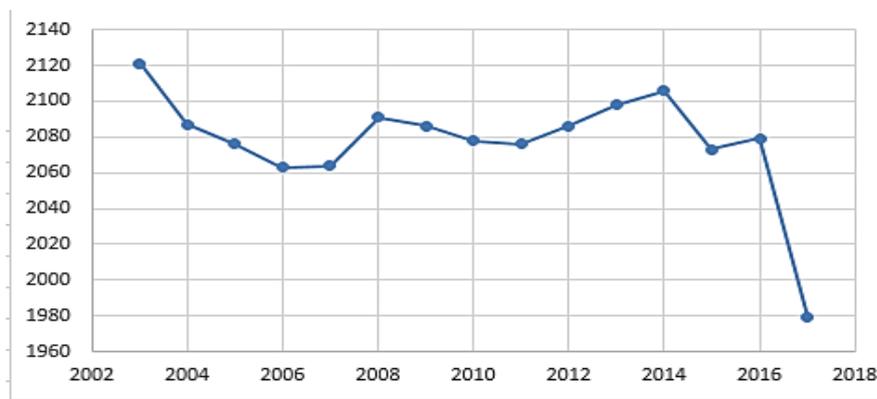
rehabilitation of the workers damaged because of the unsafe work hygiene.

In the Sanitary Code of Georgia there are very important records about the normatives inevitable for work hygiene and health, which regulates the necessary preservation of sanitary norms. But, despite this, the research results of this direction can't be found in Georgia. It can be said, that the problems related to this issue are not considered in the priorities of the country.

According the GeoStat data the number of people living in villages is about 42,6% of the total population [2, 3]. The statistics of people living in rural areas are decreasing rapidly (table 1). If we take into consideration the fact, that the large part of village residents are living temporarily and unofficially in cities, those numbers will be even smaller. Despite the small population in rural areas, the number of people employed in agriculture sector is high, as a part of the city population have their own small or family-size farms, or are involved in this activity through wage-labour.

Table 1. Number of population in rural areas in Georgia.

Year	Rural Population (thousands)	Rural population as % of total population	Year	Rural Population (thousands)	Rural population as % of total population
2004	2121	48,2	2011	2078	47,4
2005	2087	47,7	2012	2076	47,3
2006	2076	47,8	2013	2086	47
2007	2063	47,8	2014	2098	46,9
2008	2064	47,8	2015	2106	46,8
2009	2091	47,5	2016	2073	46,2
2010	2086	47,5	2017	2079	46,3



Picture 1. Population of rural areas in Georgia.

According the results of analyzing GeoStat Data, 47% of the total population (based on the rural population) of Georgia works in agrosector, so under the harmful and dangerous working conditions, more

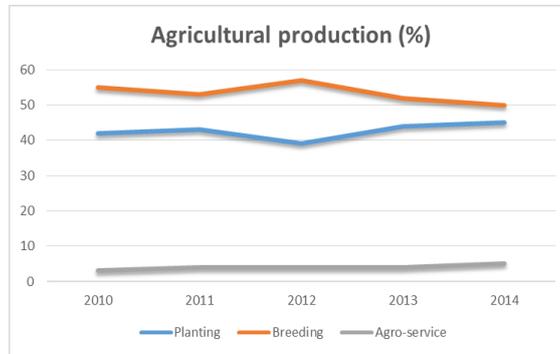
than 10 years. 42-25% of those people is occupied with plant cultivations (table 2). As it can be seen on the graph the share of the planting products is increasing in agricultural production each year.

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Table 2. Agricultural production (%).

Year	Planting	Breeding	Agro-service
2010	42	55	3
2011	43	53	4
2012	39	57	4
2013	44	52	4
2014	45	50	5



Picture 2. Agricultural production.

It's known, that necessity of using chemicals is conditioned by the specifications of agro-sector. The scales of using pesticides and fertilization in Georgia is quite impressive. The statistics of their use in presented in tables 3-5. The data of GeoStat allows us to think that the increase in consumption of agro-chemicals directly causes the deterioration of the health of people employed in Agro-sector by direct impact of them, because, as it is confirmed using questionnaires, absolute majority of the rural population hasn't applied to the doctor due to the work conditions. Their visits to doctors is explained by the motives of concrete disease. Neither the family doctors have been interested if those people are occupied by the job dangerous for their health. Somehow, only few people get interested that the

working conditions, which represent the daily occupation of some layers of the population, can be the cause of chonical diseases.

Diseases related to the profession of people occupied by agriculture can be poisoning with pesticides and agro-chemicals, dermatological and other types of chonical diseases. Considerable share in the structure of the occupational diseases comes to the impact of physical factors (degradation of neurosensurgic abilities, vibrational diseases). The diseases connected to physical fatigue and loading of separate organs or systems takes the second place. The majority of the occupational diseases end up with the performance decrement or loosing. The majority of registered patients turned out to be tractor driver or people working with other mechanisms.

Table 3. The area of soil mineral fertilized by natural fertilizers in Georgia (thousand ha.).

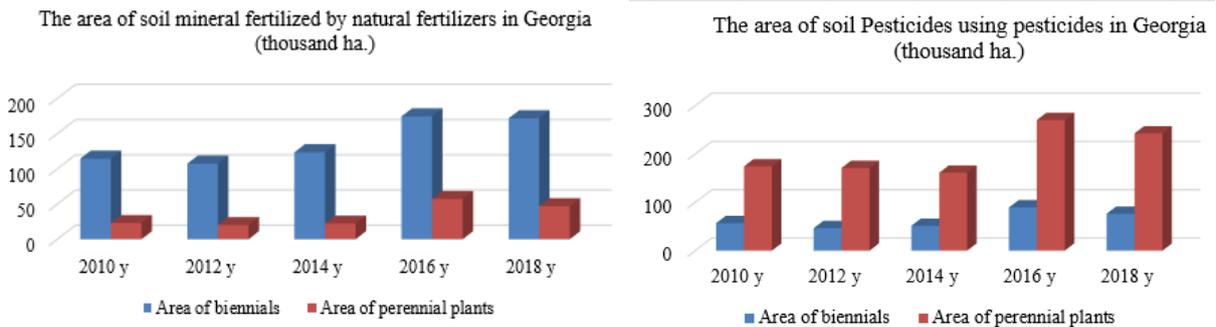
Year	2010	2012	2014	2016	2018
Area of biennials	114,4	107,5	123,6	174,5	171,8
Area of perennial plants	23	20,1	22,3	57,1	47

Table 4. The area of soil Pesticides using pesticides in Georgia (thousand ha.).

Year	2010	2012	2014	2016	2018
Area of biennials	57,1	46,8	51,6	89,7	76,4
Area of perennial plants	174,6	171,3	161,6	270,5	242,9

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Picture 3. Areas of biennials and perennial plants.

Table 5. Shares of household and enterprise production of agricultural products in Georgia.

According to area of total crops (%)					
Year	2010	2012	2014	2016	2018
Share of households	95,9	97,3	96,9	96,3	97,3
Share of agricultural enterprises	4,1	2,7	3,1	3,7	2,7
According to Fruit and Grapes production in Georgia (%)					
Year	2010	2012	2014	2016	2018
Share of households	96,1	96,7	95,8	97,9	97,3
Share of agricultural enterprises	3,9	3,3	4,2	2,1	2,7

Non-timely revealing of occupational diseases increases the number of worsened cases of individual workers. Alongside, the rural population, especially the inhabitants of villages remote from the regional centers and cities, often don't have the opportunity to get medical assistance and refer to self-healing in specific cases. They may not realize that the number of diseases can be acquired exactly from improper protection of working conditions. If we take into consideration the fact, that alongside increasing age, the process of "accumulation" of diseases takes place, we can conclude that the intensity of this process may be increased sharply by ignoring the protection of work hygiene.

In the cases of poisoning with agro-chemicals, in the conditions of accompanying chronic diseases, attention is not directed to occupational diseases, because pathologies caused by agro-chemicals are not emphasized if we don't deal with the acute poisoning. However, there are so many various types of pathologies that research of them must be very interesting and attractive and specialists have to get interested with this issue.

From the questionnaires with the population it is evident, that the majority of workers with chronic diseases has 20 and more years experience of working in agro-sector and their age is more than 50. Healing of the accumulated diseases with the age is lasting process or is impossible at all. So, it is necessary to implement and manage the preventing events with the purpose of preserving their health and prolong their ability to work. This is the

objective of state level, but the big social effect can be derived, without taking practical measures, by increasing the awareness of society in this direction, in avoiding toxical dangers by preserving the personal hygiene.

The basic reason of appearance of chronic diseases of agricultural workers is the lack of mechanization needed for using agro-chemicals, also the lack, not using at all or multiple use of individual protection means in the process of transportation, storing and using of agro-chemicals. As well as, using of ordinary clothes instead of special clothes and shoes, ignoring the cleaning or conditions for secondary use of item, ignoring of which leads us to negative results.

Based on the specifications of agrarian sector there are different working conditions, and the requirements for work safety and hygiene are different respectively. Therefore, the provision of sanitary clothes, footwear and other accessories must take place as a part of sanitary-hygiene measures for working process. The purpose of them is protect the employees of abovementioned fields from the harmful impact of working environment, such as: high and low temperature, dust and other similar pollutants, moisture, liquids, different types of mineral fertilizers and pesticides, reaching of micro-organisms into the human body from the soil, dermatologic and allergic activators caused by various chemicals, mechanical damages, various types of industrial accidents and etc. All of them are different based on the specifications of activities.

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Special equipment and accessories are different respectively and their purpose is to protect the workers in indicated conditions from any type of undesirable accidents and, alongside it, give the ability to organism to function properly. Under the proper functioning we mean as easy, unlimited movements, motion and convenience, as well as preserving natural-anatomic conditions of the body.

The role of footwear is significant in this case, not only in terms of protecting the foot, but for convenience and hygiene, which is conditioned by various factors and constructional-technological parameters. Special footwear should be convenient, comfortable and hygienic, which is ensured by its construction and used materials [4-10].

Conclusion

For improving the working conditions and reducing risks of health damage of workers in agricultural activities the daily care and enforcement of numerous measures is necessary. First of all, recommendations should be given to the local authorities about the work hygiene and providing safe working conditions. It is important to work on targeted programs directed to execute mentioned measures, as well as to use mass information means with the purpose of enhancing their social significance and improving efficiency of them.

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