

OCCUPATIONAL DISEASES IN POLISH AGRICULTURE AND THEIR LEGAL AND FINANCIAL CONSEQUENCES

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The article introduces questions related to the professional diseases in Polish agriculture. It brings up the essence of legal regulations of domain mentioned above as well as the relation between the amount of persons affected by occupational diseases to the quantity (amount) of agricultural productivity and the amount of persons employed in agriculture. An analysis of the influence of the injurious factors in the working environment on the occupational diseases of the agriculturists has been conducted. Moreover, the benefits and services dues on account of occupational diseases entitled to the farmers and their families from the Agricultural Social Insurance Fund.

Keywords: social security of the agriculturists, agricultural occupational diseases, occupational diseases social benefits, working conditions, costs of benefits related to the agricultural occupational diseases

Introduction

The Polish agriculture within the lapse of years reduces its percentage share in the labor market. This results from the fact, that shares which increase in the labor market are the fields of economy like industry and service. Unlike another sectors of economy, the agriculture only in limited extent come under the legal regulations related to the protection of life and health of the employees. This is connected to the fact that in Poland predominate individual farms (agricultural holdings), that is family-type ones. These farms within the meaning of Polish laws doesn't constitute neither enterprises nor employers, what relieve them from the control and the supervision of the National Labor Inspectorate. This is an essential problem from the point of view of the accidents in agriculture. The most incidents take place during the harvest period. This is when children and adults loose health or even life. This situation also causes many negligence related to the rules and regulations by the agriculturists themselves. Admittedly, different kind of actions promoting pro-health and pro – safe attitudes and comportments in the work of the farmers and their families, but they are far from resolving the problem. Situation looks completely differently in agricultural holding, in which are employed workers. These farms are perceived as being an enterprise, and their management – as an employer. They are subject to general and sector legal regulations of health and safety at work. From the point of view of the present article, the most essential importance is given to the occupational diseases in Polish agriculture. Agricultural activity is related to the animal and vegetable production, what is connected

with endangerments for the farmers' health. Ones result from the contact with animals, and the resulting possibilities of infecting worker's body. Others are related to the organisms, which can penetrate to the human body during farming and cultivating, as well as with chemical agents used for the plants protection. However, it is important to precise that all quantitative data presented in this article concern agriculture, hunting and chasing. This fact results of the fact, that these data are presented in such a form in the national statistical tables.

Legal regulations of the occupational diseases in Polish agriculture and their profile

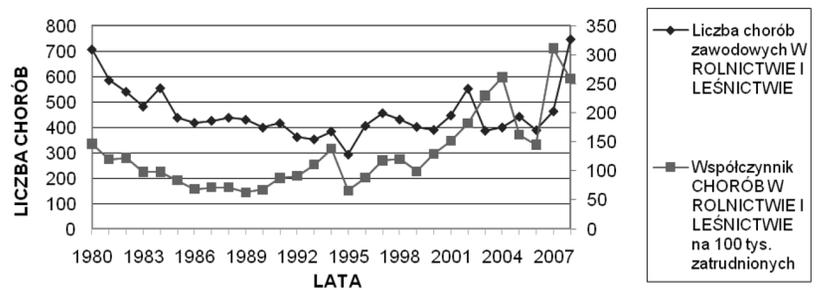
As it was mentioned in the introduction of the present article, the agriculture in Poland is subject to general and sector legal regulations settling the health and safety at work [1]. However, attention shall be drawn on the regulations governing agriculturists' social insurance. The fundamental regulation is Social Security of the Agriculturists' Act of December 20, 1990 [2]. In accordance with the article 1, paragraph 1 of the act, agriculturists social insurance, hereinafter referred to as «insurance», includes, on the principles determined by the act, farmers and their household members, who:

- 1) possess Polish nationality or
- 2) stay within the territory of Republic of Poland on a basis of visa, fixed-term residence permit, settlement permit, residence permit for a long-term EC resident, permit for tolerated stay or in relation with the granting a status of a refugee or complementary protection in Republic of Poland, or

3) are members of the EC countries, Swiss Confederation, European Free Trade Association members – European Economic Area agreement parties.

Provisions of the act as referred to in previous paragraph define occupational disease in agriculture; according to these, as an agricultural occupational disease is considered an illness which has been generated in relation to the work in agricultural holding, if this disease is included in the occupational diseases list defined by the regulations issued on the basis of Labor Code [3]. From this results, that the same list of occupational diseases is in force in agriculture as well as in remaining trades of Polish economy. The graph 1 presents the amount of persons, who fall for occupational diseases as well as the incidence rate of occupational diseases in agriculture per 100 thousand workers.

From the data results that in the years 1980–1989 we can observe a decrease of both incidence of



Graph 1. Amount of occupational diseases in Polish agriculture as well as the incidence rate of occupational diseases in agriculture for 100 thousand workers in 1980–2008.

Source. Own work.

occupational diseases as well as of the incidence rate of occupational diseases per 100 thousand workers. However since year 1990 succeeded a successive increase of the amount of agriculturists who contracted occupational diseases. This situation is disquieting when taken into consideration that the amount of workers employed in agriculture decreases. Many factors can have an influence on such a state. Among these, we can enumerate i.e. significant increase of use of pesticides as well as of fertilizers. The table 1 presents nosological units or groups of diseases on

Table 1

Nosological units or groups of diseases on account of which has been granted single indemnities in the years 2004–2008

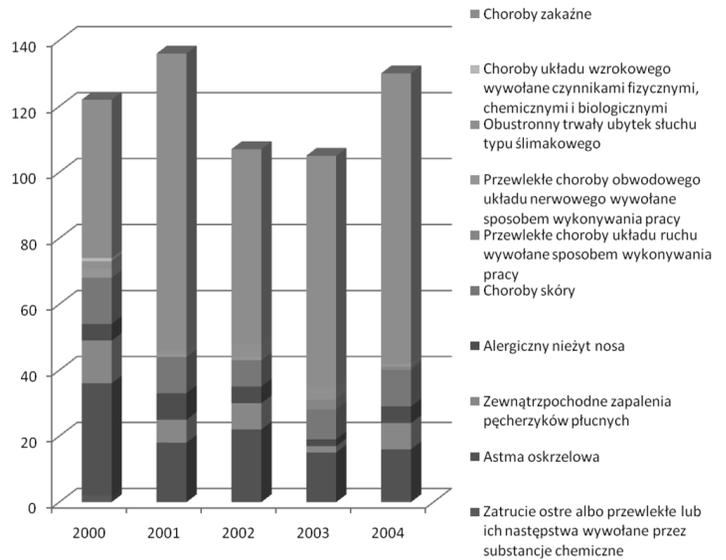
Nosological units or groups of diseases	2004	2005	2006	2007	2008
Severe or chronic intoxication or their consequences due to chemical substances	2	0	0	0	1
Asthma	34	18	22	15	15
Exogenous inflammation of pulmonary alveolus	13	7	8	2	8
Seasonal Allergic Rhinitis	5	8	5	2	5
Cutaneous diseases	14	11	8	9	11
Chronic diseases of locomotor system engendered by the way of executing of the work	0	0	0	3	1
Chronic diseases of the peripheral nervous system engendered by the way of executing of the work	3	1	1	0	1
Double permanent hearing loss of cochlear type	2	1	4	4	0
Visual system diseases engendered by physical, chemical and biological factors	1	0	0	0	0
Infectious diseases, of which :	48	90	59	70	88
Lyme disease (Lyme borreliosis)	31	76	51	58	80
Brucellosis (Bang's disease)	1	0	0	0	0
Tick-borne encephalitis (TBE)	15	9	4	8	6
Oral cavity actinomycosis	0	0	0	1	0
Alveolar echinococcosis	0	0	1	1	1
Aspergillosis	0	1	0	0	0
Toxoplasmosis of the eye	1	4	3	2	0
Erysipeloid of Rosenbach	0	0	0	0	1

Source. Ministry of Agriculture.

account of which, basing on Social Security of the Agriculturists' Act, has been granted single indemnities in the years 2004–2008.

For example, on Lyme disease are exposed workers such as : forestry workers in the large sense of this term, especially those who start their work, as well as agriculturists and agricultural workers from sylvan areas, whereas veterinarians, zootechnicians, cattle-breeders, abattoir workers are exposed to the risk of brucellosis contamination. Erysipeloid of Rosenbach is a disease which can be contracted by veterinarians, zootechnicians, pig-breeders, fishermen, abattoir workers and these working in the centers processing foods of animal origin and of fishes. [4]. Basing on the bibliographic data, we can indicate asthmagenic factors in agriculture of big molecular mass, what have been presented in table 2.

The graph below presents the proportional part of particular diseases or groups of diseases in the overall amount of agricultural occupational diseases. As it can be noticed, the largest part of the mentioned diseases represents infections, while the smallest proportional part concerns the cases of severe or chronic intoxication or their consequences due to



Graph 2. Proportional part of particular diseases or groups of diseases in the overall amount of occupational diseases in Polish agriculture.

Source. Own work.

chemical substances. It results from the fact that the increase of use of means of plants and fertilizers' protection have a negligible influence on the increase of agricultural occupational diseases.

As it has been mentioned previously, agricultural activity consists of animal and vegetable production. We can ask – what influence on the change of amount of agricultural occupational diseases has the change of value of animal and vegetable production as well as the amount of persons employed the sector of agriculture? In order to reply to this inquiry, a multiple regression has been used. The results of the analyses comprising the years 2002–2008 are presented on the figure 1 and table 3. The data used in the present calculation were provided by *Statistical Yearbook of Poland* of the Central Statistical Office in this: *Statistical Yearbook of Agriculture*.

From the analysis results, that between the change of the amount of agricultural occupational diseases and the change of animal and vegetable production as well as the amount of persons employed in the sector of agriculture exists a weak correlation; the change of the amount of falling ill has been explained by the change of the size of animal and vegetable production as well as size the employment in agriculture only in 11,8 %. Next question then appears : which another factors can affect the change of the amount of agricultural occupational diseases? It can be supposed, that this factor are the

Table 2

Asthmogenic agents in agriculture

Type of agent	Profession or workplace
Cows – fur and dandruff	Agricultural workers
Acari of grains	Grain warehouse
Acari of poultry	Breeder
Acari of barns and stables	Farmers
<i>Tetranychus maedanieli</i>	Grape vine cultivators
Bees	Apiarist
Oysters	Breeder
Silkworms and their larvae	Breeder
<i>Aspergillus</i> <i>Altenaria</i>	Beetroot cultivator
Beans seed	Cultivator
Pepper	Cultivator
Onion	Cultivator
Potatoes	Cultivator
Organic Phosphate Insecticides	Farmers

Source. J.S. Kłopotowski, *Choroby alergiczne pochodzenia zawodowego [w:] Choroby zawodowe (Allergic diseases of occupational origin. [in] Occupational diseases)*, red. K. Marek, Wydawnictwo Lekarskie PZWL, Warszawa 2001, pages 113–121.

conditions of the working environment, which constitute a threat for agriculturists' health. The table 4 below presents suppression or limitation of the threats of working environment factors in agriculture.

In order to check which influence on the amount of agricultural occupational diseases have factors of working environment i.e. physical, chemical and biological factors, the analysis of linear regression has been performed. The following variables has been analyzed: the amount of agricultural occupational diseases; the amount of suppressed environmental threats to the conform norm level; the amount of limited threats as well as the amount of disclosed new threats. As it results from the analysis presented in the figure 2 and the resume of multiple regression, there exists a very strong correlation between the change of the amount of occupational diseases and the change of the amount of suppression, limitation or disclosure of the harmful factors at working environment. Moreover, the analysis shows that in 89,6 % the change of the amount of agricultural occupational diseases is due to the change of amount of factors of threats in the working environment.

Benefits due to agricultural occupational diseases

Accidents, diseases and maternity insurances guarantee, under the Agriculturists' Social Insurance, concrete benefits such as :

- 1) single indemnity due to permanent or long-term bodily injury or death in consequence of accident at agricultural work or agricultural occupational disease, hereinafter referred to «single indemnity»;

- 2) sickness benefit;
- 3) maternity leave.

Single indemnity is entitled to :

- 1) an insured person who experienced permanent or long-lasting bodily injury in consequence of work accident in agriculture or agricultural occupational disease;
- 2) the members of family of insured person, who died as a result of work accident in agriculture or agricultural occupational disease.

Family members referred to in article 10 paragraph 1a of the invoked Act are :

- 1) spouse;
- 2) children, own or adopted, stepsons, grandsons, siblings fulfilling in the day of death the conditions required to obtain the survivor's pension;
- 3) parents, adopters, stepmother, stepfather if in the day of the death of the insured person they maintained a common household or if the insured person in a significant degree contributed to their living or if it has been fixed, by judicial sentence or consent judgment, the alimony order from their part.

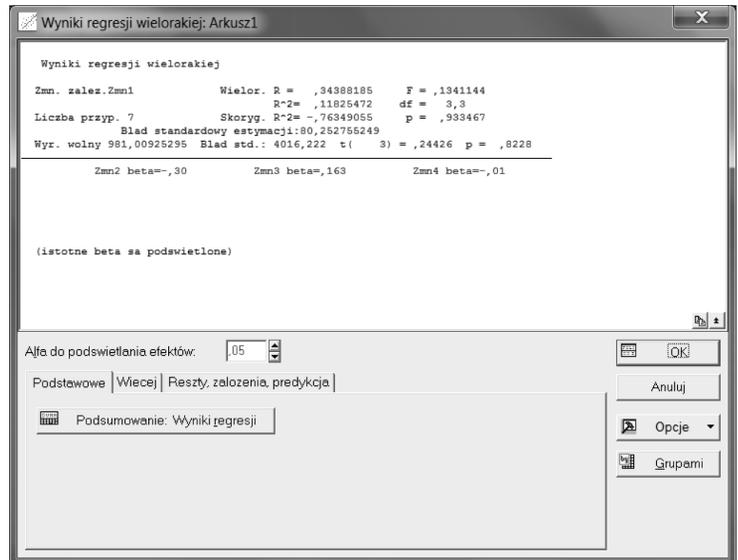


Figure 1. Analysis of multiple regression.

Summary of multiple regression of the dependent variable 1

Kolumna1	Beta	Błęd standardowy Be	B	Błęd standardowy	t(3)	poziom
Zmienna 1			981,0093	4016,222	0,244262	0,822781
Zmienna 2	-0,299529	0,564747	-0,0988	0,186	-0,530378	0,632600
Zmienna 3	0,162911	0,555720	0,0014	0,005	0,293152	0,788515
Zmienna 4	-0,013037	0,577577	-0,0454	2,010	-0,022572	0,983409

Summary of multiple regression of the dependent variable : : Variable (Chart1) $R = 0,34388185$ $R^2 = 0,11825472$ Skoryg. $R^2 = -0,76349055$ $F(3,3) = 0,13411$ $p < 0,93347$ Standard error of the estimation : 80,253

Table 4

Specification	Suppression or limitation of the threats of working environment factors				
	Employed in conditions of threat				
	in the relation to whom during a year of threat suppressed or limited				stan w dniu 31 grudnia
	total	suppressed or limited to the level conform to the norm	limited	uncovered according to threats	
Agriculture, hunting and forestry					
2000	4858	2685	2173	1588	11490
2001	4705	2635	2070	1354	10315
2002	4275	2355	1920	996	8502
2003	3387	2010	1377	970	6790
2004	3511	1959	1552	513	6239
2005	2680	1327	1353	796	6054
2006	2686	1379	1307	630	6332
2007	3224	1542	1682	1020	6044
2008	3390	1714	1676	1019	6542
2009	2310	1069	1241	743	4767

Source. Own work.

It shall be underlined, that single indemnity is not entitled to the insured, if:

- 1) he caused the incident purposely or as a result of gross negligence or
- 2) being in state of insobriety or under influence of abusive, psychotropic substances or another ones of similar effect, he contributed in great part to the incident.

It shall be necessarily underlined, that single indemnity for insured is determined in proportion to permanent or long term bodily injury defined in percentage. Moreover, law defines the notions of permanent and long-lasting bodily injury. Is recognized as a permanent bodily injury such an infringement of the physical fitness, which causes the impairment of body activities which doesn't prognostic improvement. On the other part a long-term bodily injury is considered such an infringement of physical fitness, which causes the impairment of body activities for a period exceeding 6 months, submittable to improvement.

The minister competent in matters of agriculture development, in agreement with the Council of Agriculturists, can determine, through a decree, the amount of single indemnity entitled for every percentage of

permanent or long-lasting bodily injury, taking into account:

- 1) the state of finances of contributory fund;
- 2) the amount of single indemnity entitled basing on social insurance regulations related to the work accidents and occupational diseases.

If the amount of single indemnity has been not fixed as described above, it amounts 66 % of basic

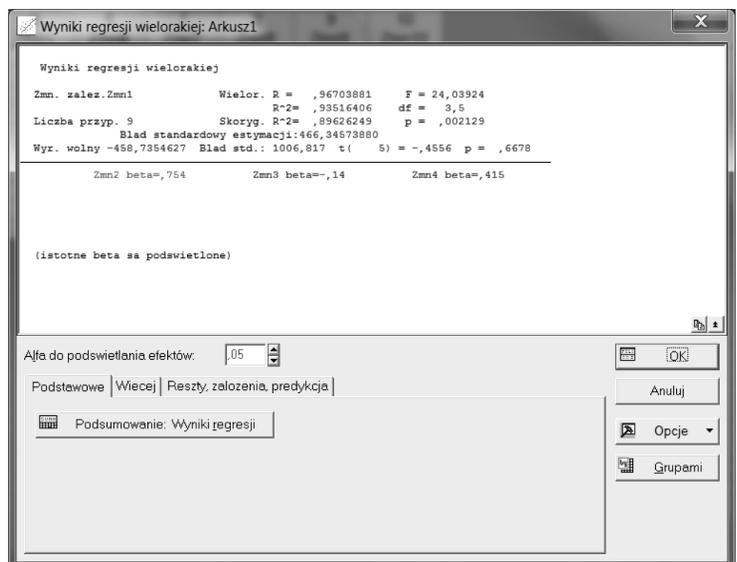


Figure 2. Results of multiple regression.

Resume of the regression of the dependent variable : Variable1 (Chart1)
 $R = 0,96703881$ $R^2 = 0,93516406$ Corrected. $R^2 = 0,89626249$ $F(3,5) = 24,039$, $p < ,00213$. Standard error of the estimation: 466,35

retirement pension for every percent of permanent or long-lasting bodily injury. Single indemnity mentioned previously undergoes an increase of a sum equal to single indemnity for a 20 % bodily injury, if the insured in the result of agricultural work accident or agricultural occupational disease it is incapable to carry out an independent existence. Moreover, if as a result of relapse of person's health status, permanent or long-lasting bodily injury due to agricultural work accident or agricultural occupational disease, which was the basis of granting single indemnity, will undergo an increase of at least 10 percentage points, the single indemnity is increased by the amount equal to the amount of single indemnity, defined in the decree issued by the Minister of agriculture or when it amounts 66 % of the basic retirement pension, for every percentage of bodily injury exceeding the percentage of the injury according to which the indemnity was settled. On another hand, if only one family member is entitled to the single indemnity, this last is equal to :

- 1) the amount of single indemnity for 100 % bodily injury, if the entitled person is a spouse or a child of the insured person;
- 2) 50 % of the amount determined in the point 1, if another family member is entitled to the indemnity.

In the situation when to the single indemnity are entitled simultaneously :

- 1) spouse and one or more children, the benefit is due in the amount of 100 %, increased for every child of an amount equal to single indemnity for 20 % bodily injury, if the insured in consequence of the work accident in agriculture or agricultural occupational disease is unable to carry out an independent existence.
- 2) two or more children, the benefit is due in the amount of 100 %, increased for second and every next child of an amount equal to single indemnity for 20 % bodily injury, if the insured in consequence of the work accident in agriculture or agricultural occupational disease is unable to carry out an independent existence.

On the other hand, if alongside the spouse and children another family members are simultaneously entitled to the single indemnity, each of them has a right to benefit single indemnity amounting 20 % of bodily injury, if the insured in consequence of the work accident in agriculture or agricultural occupational disease is unable to carry out an independent

existence, independently of the benefits entitled to the spouse and children.

While the persons entitled to the single indemnity are only family members others than spouse or children, the benefits are due in the amount of 50 % of single indemnity for 100 % bodily injury, if are entitled to the benefits another family members, increased for the second and every other entitled person of an amount equal to single indemnity for 20 % bodily injury, if the person entitled to the benefit is another member of the insured person's family, augmented for the second and every another entitled person of an amount equal to single indemnity for 20 % bodily injury, if the insured in consequence of the work accident in agriculture or agricultural occupational disease is unable to carry out an independent existence, independently of the benefits entitled to the spouse and children.

It shall be underlined, that the single indemnity due to the : spouse, one and more children or two and more children or family members different than the spouse and the children, are shared between the entitled person in equal parts.

It is essential, that a single indemnity due to the decease of the insured person, who died as a result of agricultural work accident or the agricultural occupational disease, is lessened of the amount of the sum of single indemnity for permanent or long-lasting bodily injury paid to the injured person.

Conclusions

The occupational diseases in Polish agriculture are regulated by separate regulations other than another sectors of national economy. These laws define not only the notion of «agricultural occupational disease» but also precise the benefits of the Agricultural Social Insurance Fund to which are entitled to the agriculturists due to occupational disease. From the realized analyses results that the change of size of animal and vegetable production as well as of the amount of persons employed in agriculture has a marginal influence on the evolution of the amount of occupational diseases in Polish agriculture. Moreover, it was established that the main influence on the change of amount of agricultural occupational diseases have the suppression, limitation or disclosure of harmful factors in the working environment in agriculture, threatening the health of the workers.

Bibliography

1. Czapka M., Bezpieczenstwo i higiena pracy w przedsiębiorstwach produkujących żywnosc. Aspekty prawne, techniczne i ekonomiczne (Occupational health and safety in the aliments producing enterprises. Legal, technical and economical aspects) [w:] Ekonomiczne i finansowe aspekty zarządzania przedsiębiorstwem, (In Economical and financial aspects of management) (red. M. Czapka), WSEiA, Bytom 2001.

2. Ustawa z dnia 26 czerwca 1974r Kodeks pracy, tj. Dz. U. z 1998r., nr21, poz.94 ze zm. (Act of June 26, 1974, Labour Code ie. Journal of Laws from 1998 no. 21, as amended)

3. Ustawa z dnia 20 grudnia 1990 r. o ubezpieczeniu społecznym rolnikow, (t.j.Dz.U.08.50. 291) (Social Security of the Agriculturists' Act of December 20, 1990., Journal of Laws no. 08.50. 291)

4. Choroby zawodowe (Occupational diseases), red. K. Marek, Wydawnictwo Lekarskie PZWL, Warszawa 2001.

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ПРОФЕСІЙНІ ЗАХВОРЮВАННЯ У ПОЛЬСЬКОМУ СІЛЬСЬКОМУ ГОСПОДАРСТВІ ТА ЇХ ЗАКОНОДАВЧІ І ФІНАНСОВІ НАСЛІДКИ

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Стаття торкається питань пов'язаних з професійними захворюваннями в сільському господарстві Польщі. Розглядається законодавство в галузі професійних захворювань, а також відношення між кількістю осіб з профзахворюваннями, продуктивністю сільського господарства та кількістю працюючих у сільському господарстві. Був проведений аналіз впливу шкідливих чинників у виробничому середовищі на кількість профзахворювань працюючих в сільському господарстві. Крім того, розглянуто питання грошової допомоги та обслуговування з боку сільськогосподарського фонду соціального страхування фермерів з професійними захворюваннями та членів їх сімей.

Ключові слова: соціальне забезпечення фермерів, професійні захворювання в сільському господарстві, соціальна допомога при профзахворюваннях, виробничі умови, вартість допомоги при професійних захворюваннях

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ПРОФЕСИОНАЛЬНЫЕ ЗАБОЛЕВАНИЯ В ПОЛЬСКОМ СЕЛЬСКОМ ХОЗЯЙСТВЕ И ИХ ЗАКОНОДАТЕЛЬНЫЕ И ФИНАНСОВЫЕ ПОСЛЕДСТВИЯ

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Статья касается вопросов, связанных с профессиональными заболеваниями в сельском хозяйстве Польши. Рассматривается законодательство в области профессиональных заболеваний, а также отношения между количеством случаев профессиональных заболеваний, производительностью в сельском хозяйстве и количеством работающих в нем. Проведен анализ влияния вредных факторов производственной среды на количество профзаболеваний работающих в сельском хозяйстве. Кроме того, рассмотрены вопросы пособия по болезни и обслуживания со стороны сельскохозяйственного фонда социального страхования фермеров с профессиональными заболеваниями и членов их семей.

Ключевые слова: социальное обеспечение фермеров, профессиональные заболевания в сельском хозяйстве, социальная помощь при профзаболеваниях, производственные условия, стоимость помощи при профессиональных заболеваниях

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