ETHIOPIAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 05, May-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

CONTAMINATION LEVELS OF FOOD PRODUCTS IN FERGANA CITY AND FERGANA DISTRICTS WITH VEHICLE WASTE

Momunova G.A.
The head of the department of Batkent National University
Isakov S.R.
is 2 nd course student in master's degree of Batkent National University

Abstract
Nitrogen oxides in the exhaust gases emitted by cars cause the formation of photochemical smog. One car emits 800 kg of carbon monoxide, 40 kg of nitrogen oxides and 200 kg of various hydrocarbons per year. Carcinogenic hydrocarbons, which accumulate especially around traffic lights at intersections, are extremely dangerous. This waste has the ability to accumulate in the external environment and in the human body[1,2].

Keywords
gasoline, carbon dioxide, diesel, holodes, salad, meat , grapes, fuel, dry and relatively dry products .

INTRODUCTION

Currently, the use of gasoline, diesel, liquefied gas and diesel fuel as fuel for motor vehicles is widespread. As a result of the burning of these fuels, the release of various gases into the atmosphere leads to environmental disasters. As a result of combustion of any organic fuel, water vapor H_2O , carbon dioxide CO_2 or soot gas CO (in incomplete combustion) and various other toxic gases are also produced. When these vapors and gases combine with oxygen, they form a flame. During the burning process[3,4,5], the temperature reaches 1500-2400 $^{O}C.$ 60...80% of fuel enters the vehicle cylinder in the form of vapor , 10...15% in the form of liquid droplets, and up to 25% in the form of liquid vapor. If the organic fuel is in gaseous or vapor form, it oxidizes at a very high rate when it burns. Evaporation of fuel is a process that occurs on the surface . The amount of air supplied for fuel combustion is extremely important. If it is not enough , the fuel will burn slowly, the temperature will be low, the formation of incomplete combustion products, i.e. carbon (II)-oxide, soot, etc. will increase[6,7]. It is also not good to overdo the amount of air. Oxygen in the air is only 21% by volume, and the rest is inert gas and nitrogen N_2 . As a result, when a lot of air is supplied, most of the heat goes to heating the nitrogen and the remaining oxygen. As a result, the temperature decreases, the burning rate decreases, and fuel is consumed excessively . Different fuels require different theoretical amounts of air for complete combustion.

12.5 m^3) of air at 293 K at constant atmospheric pressure is theoretically required for complete combustion of 1 kg of gasoline . In practice, gasoline does not burn completely. 17-18 kg (14.6 m^3) of air is needed for 1 kg of gasoline to ensure complete combustion . 26.7 kg (22.25 m^3) of air are required for the combustion of 10 kg of C carbon, and 80 kg (66.7 m^3) of air are required for the combustion of 10 kg of H_2 . But excess air in the mixture will increase the complete combustion of gasoline, as well as cause a decrease in the burning rate. As a result, it leads to a decrease in engine power.

To increase the combustion speed of the mixture, it is necessary to reduce the amount of air in the mixture[8,9,10]. The maximum burning rate occurs when about 109 m^3 of air corresponds to 10 kg of gasoline. This ratio mixture provides great power from the engine, but poor fuel economy due to incomplete combustion of gasoline.

eISSN: 2349-5715 pISSN: 2349-5707
Volume: 11, Issue 05, May-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

Approximate values of excess air in kg required for fuel combustion in various engines :

Table 1

Types of fuel:	
Gasoline (for gasoline engines)	0.09-1.15
Diesel fuel (for high-speed engines)	1.20-1.60
Motor fuel (for slow-speed engines)	1.50-1.70
Gaseous (compressed or liquefied gases)	1.05-1.15

Gasoline of various grades and brands is used as the main fuel for carburetor and injection engines[11,12]. Gasoline is a flammable liquid that evaporates easily. They are about 85% carbon by mass, 15% hydrogen, and very small amounts of oxygen, nitrogen, and sulfur. Gasoline density ranges from 0.690 to 0.742 g/cm ^{3}, the amount of heat released when they burn is about 3200 MJ/m ^{3}.

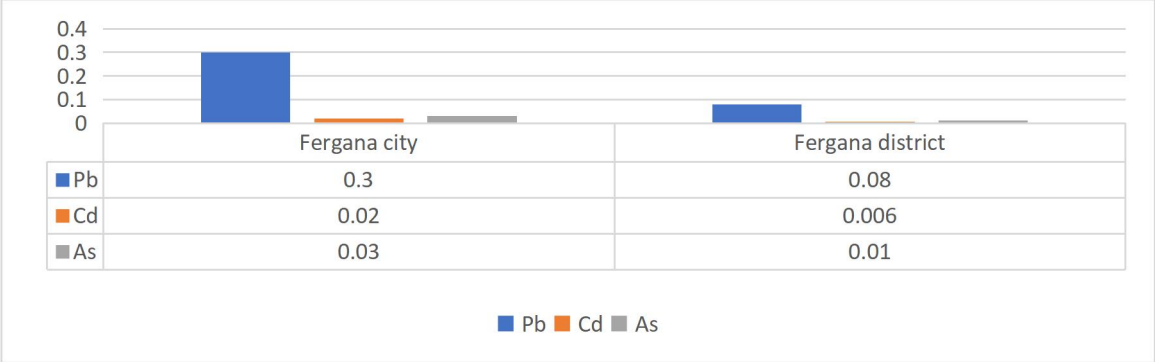
One of the main causes of air pollution is that the fuel does not burn evenly and completely. Only 15 percent of the fuel is used to drive the car, and 85 percent "goes into the air." The combustion chamber of a car engine is a chemical reactor that synthesizes toxic substances and releases them into the atmosphere. Even nitrogen contained in normal air enters the combustion chamber and turns into toxic nitrogen oxide. As a result of premature burning of fuel[13,14], the following toxic components are formed :

- CO - Carbon monoxide (suffocating gas - gas) 87-98%;
- NO, NO $_2$ - nitrogen oxides (19-73%);
- unburned hydrocarbons (82-96%);
- aldehydes;
- sulfur compounds;
- highly toxic lead compounds and soot can be shown.

oxides in the exhaust gases emitted by cars cause the formation of photochemical smog. One car emits 800 kg of carbon monoxide, 40 kg of nitrogen oxides and 200 kg of various hydrocarbons per year. Carcinogenic hydrocarbons, which accumulate especially around traffic lights at intersections, are extremely dangerous. This waste has the ability to accumulate in the external environment and in the human body.

Fergana city and Fergana district, during our inspection, the following heavy metals (mcg) were found in their composition

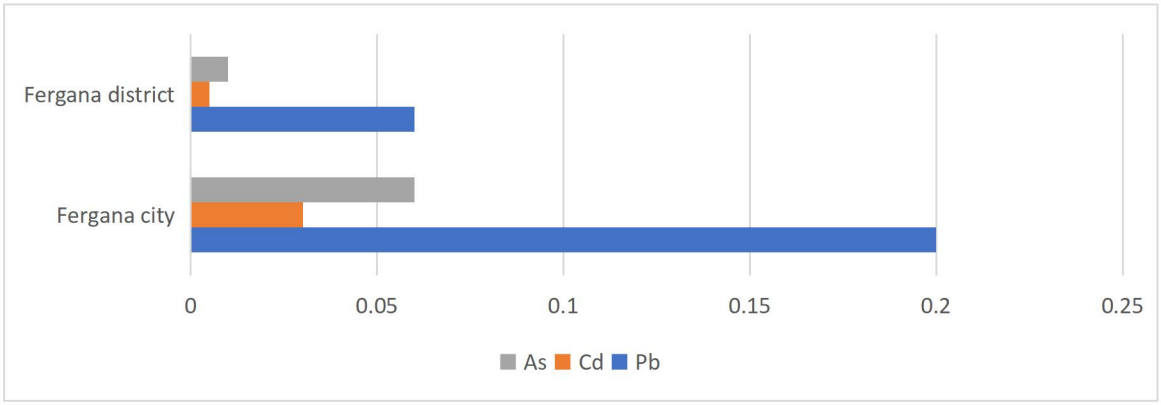
Diagram 1



When we checked the holodes in the city of Fergana and Fergana district, we found mcg of the substances listed in the table below.

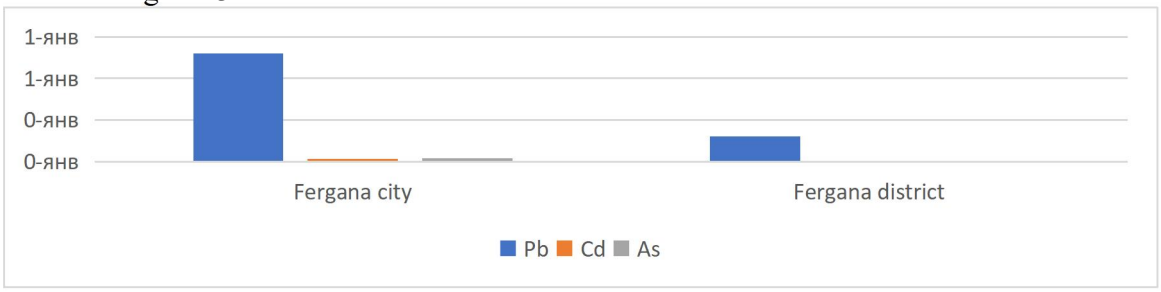
Diagram 2

eISSN: 2349-5715 pISSN: 2349-5707
Volume: 11, Issue 05, May-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662



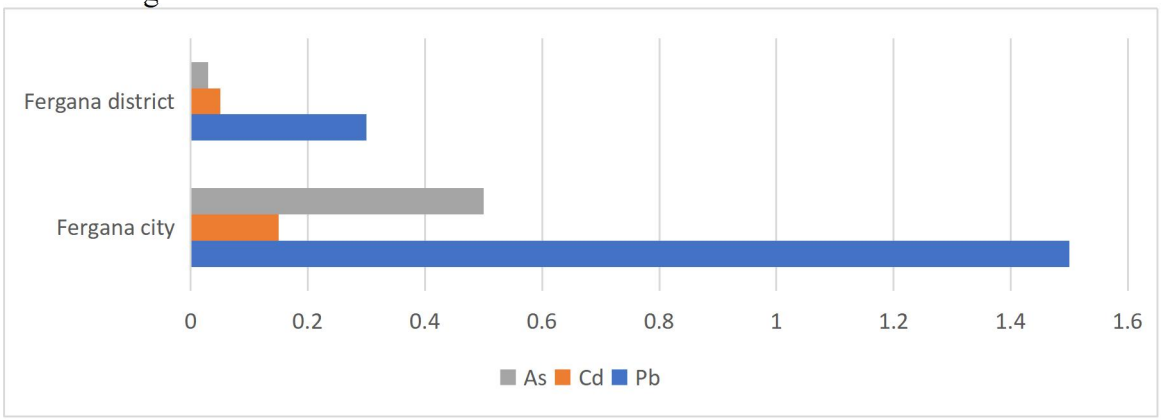
Fergana city and Fergana district, when we checked it, found mcg of the substances listed in the table below.

Diagram 3



Fergana city and Fergana district, they contained mcg of the substances listed in the table below.

Diagram 4



Food products (especially dried) absorb moisture from the environment , that is, from moisture in the air. Dry and relatively dry products (dry milk, dry fruits, tea, coffee), products rich in proteins, starches[15,16], fructose and invert sugar can absorb moisture, rich in fat and oil or have a lot of moisture. And the products do not absorb moisture. But it covers dust and other toxic gases in the air on its surface.

But we often notice that the meat is not in the refrigerator but in the open air. When we checked these products, it was observed that there were lead and dust particles in it, and it was 3 times higher than the standard.

Picture 1

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 05, May-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

In addition, our various foods, salads, fried fish, boiled hooves (halodes, hasb), chickpea soup, and four products we love to eat in the New Year are also sold in the open air at our market stalls[17,18], and no one pays attention to it. No one is thinking about the damage.

Picture 2

When we checked such wet products, it was revealed that it is unfit for consumption and has toxic properties that are harmful to the human body. It was found out that the above products contain lead compounds, nitro compounds, and sulfur compounds[19,20,21]. When I checked it with the one in the barrel, it turned out that it contained a large amount of products.

After that, when we started our experiment to study roadside and field fruits, it turned out that roadside fruits and vegetables also contain toxic substances.

Picture 3

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 05, May-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

cause significant damage to wastewater due to the lack of dedicated space . In addition, exhaust gases emitted from vehicles combine with water droplets (rain, snow, fog, dew, hail), and groundwater and surface water fall into ditches, artesans, streams, and other open water bodies[22]. changes and loses its toxicity. When I myself conducted an interesting experiment, when leeches were released into rainwater, they died within 1 day. It can be seen that now vehicles are causing huge problems to mankind.

Our checks showed that the permissible limit of PM2.5 particles in Fergana city increased by 23 times and in Fergana district it increased by 5 times. Science has proven that PM2.5 causes cancer and asthma.

REFERENCES:

1. Impact of food production industry on the environment DU Khujaeva, DI Tursunova, SR Isakov, SS Usmanalieva, Vestnik nauki i obrazovaniya, 2019
2. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=sz3jm1wAAAAJ&citation_for_view=sz3jm1wAAAAJ:2osOgNQ5qMEC
3. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=sz3jm1wAAAAJ&citation_for_view=sz3jm1wAAAAJ:9yKSN-GCB0IC
4. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=sz3jm1wAAAAJ&citation_for_view=sz3jm1wAAAAJ:d1gkVwhDpl0C
5. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=sz3jm1wAAAAJ&citation_for_view=sz3jm1wAAAAJ:u5HHmVD_uO8C
6. Tishabaeva Nargiza Alimdjanovna. (2023). Etiopathogenetic mechanisms in pre-eclampsia. World Bulletin of Public Health, 26, 66-70. https://www.scholarexpress.net/index.php/wbph/article/view/3193
7. Н.А.Тишабаева, Ш.Д.Бабажанова. Ранняя и поздняя преэклампсия- риск, факторы и исходы для матери и ребёнка, Journal of clinical and priventive medicine 2023.-Т.4.-№4.-С-78-81
8. A Tishabaeva, Nargiza, S Alimjanova, Mokhirabonu. The use of omega-3-polyunsaturated fatty acids in pregnancy as a factor in the prevention of preterm birth. Theoretical & Applied Science 6 (110), 353-355, 2022
9. Tishabaeva Nargiza Alimjanovna. (2022). Human papillomaviruses: relevance and treatment methods. American Journal Of Biomedical Science & Pharmaceutical Innovation, 2(06), 10–14.
10. https://doi.org/10.37547/ajbspi/Volume02 Issue06-03
11. I.N Raxmatjonovna. The problem of acceleration of children's development (literature review). International Multidisciplinary Journal for Research & Development. Volume10, Issue 12, pp. 160-164, 2023
12. IN Raxmatjonovna. The most pressing problem today is iodine deficiency. World Bulletin of Public Health 23, 97-100
13. IN Raxmatjonovna. Anthropometric indicators of children. Scientific Impulse 1 (5), 883-887
14. АА Джурабаев. О роли helicobacter pylori в патогенезе атрофического желудка гастрита и рака. ”Журнал клинической и профилактической медицины” № 1, стр.16-19, 2024. ISSN 2181-3531
15. AA Djurabayev. On the etiological and pathogenetic aspect of nonspecific colitis. World Bulletin of Public Health 29, 24-26, 2023
16. AA Dzhurabaev. The role of endoscopic examinations in early diagnosis diseases of the esophagus, stomach, and duodenum. Innovations in technology and science education, 264-269
17. Djurabaev A.A. Etiopathogenesis, prevention and treatment of acute gastritis and duodenitis. Ethiopian International Journal of Multidisciplinary Research. Vol.11 No. 05 (2024)

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 05, May-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

18. I.N Rahmatjonovna. Fast foods are the potential of human health. Ethiopian International Journal of Multidisciplinary Research. Vol. 11 No. 05 pp.365-369.(2024) https://www.scholarexpress.net/index.php/wbph/article/view/3193
19. Jaloliddinov Sh.I. “Treatment and prevention of caries disease in children”. Ethiopian international journal of multidisciplinary research. volume 10, issue 12 . sjif 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980
20. Jaloliddinov Sherzodbek Ikromjon O’g’li. exploring non-surgical options for managing ventral hernia: a comprehensive guide to conservative approaches “Innovative achievements in science 2024”. part 28 Issue 1 pp.113-118
21. Исмоилов, Д. Т., Ж. А. Абдухамидов, and Б. Б. Қамбаров. "Болаларда учрайдиган диспепсия касаллигининг оғир асоратлари." Евразийский журнал медицинских и естественных наук 3.6 Part 2 (2023): 117-120.
22. Исмоилов, Д. Т., Ж. А. Абдухамидов, and Б. Б. Қамбаров. "Гижжаларнинг организмга таъсири ва олдини олиш чора тадбирлари." Евразийский журнал медицинских и естественных наук 3.6 (2023): 38-45.
23. Tavakkal O‘g‘li I. D. Air pollution and human health //International Multidisciplinary Journal for Research & Development. – 2024. – Т. 11. – №. 02.