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Burning leaves and its influence on the organism

Nowadays the problem of pollution of environment is extremely urgent. Ukrainians got used to burn fallen leaves down but the most still have no clue that this practice poses a threat to human health and the environment and often results in dangerous wildfires. A smoke of burning leaves consists mostly of small particles forming suspension in the air. Also smoke is composed of gases of different degree of toxicity. In fact, one ton of leaves may emit about 30 kg of carbon dioxide while it burns. Besides carbon dioxide and water vapor, numerous toxic substances are released during the combustion. For example, carbon monoxide, dioxins, benzopyrene ozone-forming chemicals, nitrogen oxide. Each of these substances makes toxic, irritant, and carcinogenic effect. These negative effects of burning leaves are explained by strong degree of pollution of soil, water and air of big cities and suburbs. If leaves are burning, all accumulated toxic substances such as pesticides (common in rural area) and radionuclides are emitted in the air again. Also villagers often burn household waste at the bonfires what makes that harsh smoke way more hazardous. In fact, in some areas of Ukraine burning of leaves and garbage sometimes causes much higher level of air pollution than factories and vehicles. Air pollution leads to a pollution of soil and groundwater. Smudge rises in the higher parts of atmosphere penetrating into clouds and rainfall cleanses the air. Then solid smoke particles are washed right onto the water or onto the ground from where they enter the groundwater that supply rivers. With river water poisonous remains of smoke can spread around the lakes, seas or even oceans.

Leaf-burning smoke can cause significant health problems. It has irritative effect on eyes, nose and throat and especially dangerous for children, elderly and people with asthma and another heart or lungs diseases. This affection is caused by small particulars of smoke that penetrate deeply in the lung tissues. A smudge may cause headache, coughing, wheezing, chest pain and sometimes shortness of breath. Those unpleasant symptoms may persist up to several days in case of breathing a large amounts of smoke. As it was mentioned before, smoke from leaf fires contains different toxic gases. Carbon monoxide binds with hemoglobin forming stable compound called carboxyhaemoglobin which is unable to carry oxygen. Mild poisoning with carbon monoxide causes headache, nausea, shortness of breath, tachycardia, dizziness and faint. Also smoldering leaves release benzopyren which can cause cancer, a number of diseases of reproductive system and pathologies of intrauterine growth of a fetus. In present burning leaves is prohibited by the Law of Ukraine "On the Protection of Atmospheric Air".