

BREATHING TO DEATH?

Is the air we breathe in a rural environment clean? As we all know, air pollution is a real problem in big cities. We all have heard about the blackish clouds that form above big cities like Madrid or Barcelona, two of the most polluted cities in Spain.



But, without going that further, did you know that 9 out of 10 people breathe polluted air in Spain? This is a serious problem, too dangerous to keep it unnoticed and it not not only affects (as many of you may be thinking) the most crowded areas due to traffic, the cities ... None of that. In Spanish rural areas such as Tudela (Navarra) or Villanueva del Arzobispo (Jaen), limited regulations for particulate matter (PM) in the environment have been exceeded. In 26 municipalities, some with a volume of traffic that cannot be compared to that of Madrid or Barcelona, alarms have gone off and all this because of an apparently invisible problem.

Air pollution depends on several factors and not everything has to do with big cities. If you live near a very busy highway and the orography of the area makes it a place without a lot of wind, your town may also have very high records of pollutants.

To prove this fact, an experiment has been carried out at IES Reyes Católicos (Ejea de los Caballeros, Zaragoza, Spain) with the collaboration of Jorge Pey (ARAID researcher at the Pyrenean Institute of Ecology) in which nanoparticles, metals and soot (most characteristic components of road traffic emissions) were captured in filters. The study reached the

conclusion that pollution was double and even triple in those areas of the educational establishment where there was more traffic (such as the entrance to the building by comparison to the playground, around 40 meters far from the road).

But does that mean that the rest of the town gets rid of pollution? The answer is clearly no. One of the myths of pollution is based on the belief that the polluted air cloud remains fixed at one point and it only affects those who are under it, but that's not true because pollutants move and disperse and although the surroundings are low polluted areas, all the investigations point out that, no matter how small, there is no level of contamination that does not affect humans.

Scientists have proved that certain levels of pollution have direct consequences on the health of people. Jorge Pey reported that people who live with some moderate percentages of contamination and are sensitive to these circumstances may contract a series of respiratory or cardiovascular diseases in medium term. Even in the long term, after 40 years breathing a load of moderate pollution air, a person can get lung cancer that can develop and cause death. According to some recent studies, air pollution due to road traffic has significant consequences on babies cognitive development since pollutants are layered by their density and their concentrations are higher at between 0.5 - 1m above the ground, a height that coincides with that of the strollers in which babies are carried.

After having raised and explained this problem that affects us without even realizing it, we have devised and proposed a series of solutions. These solutions include proposals at a local level -but may be applicable elsewhere-, and at national level.

At local level, some proposals are creating a carbon sink with autochthonous species that can reduce carbon dioxide concentrations in the surrounding atmosphere; a reorganization of road traffic so that as few vehicles as possible gather at the entrance of the educational establishment (allowing only the passage of school transport vehicles, transforming the street into a pedestrian one, establishing bike lanes throughout the municipality and an a specific area for private vehicles that bring students to the center; encouraging students and the educational community in general to use other types of vehicles that have less emissions or that avoid them directly (bicycles, walking, etc). In order to convince families to let their children cycle around cities where cars are the protagonist, safety is the key. Other proposals go through encouraging transport companies to replace their vehicles with less polluting ones, for example hybrid vehicles, 100% electric or the ones that use hydrogen to work.

Some of these local proposals could also be adapted to the national level. But the most important and urgent measure is the establishment of air pollution legislation since the current one is very flexible; it was enacted many years ago, when the problem of pollution was even more unknown and ignored. Air was not as obvious or as serious as a problem as it is now. An example of eco-friendly legislation is the one that promotes 15-minute cities which consists of the fact that citizens must have access to all the fundamental services at a distance of 15 minutes on foot in order to reduce or completely prevent citizens from choosing to move in a vehicle, thus reducing their emissions.

Sincerely, air pollution is a problem that should not be taken lightly due to the serious consequences it has on population and, in which to alleviate it, a great collaboration should be carried out, not only by the governments but also at the individual level... In short there is a hard work ahead.

Article cited: "El aire que respiramos" <http://iesreyescatolicos.com/el-aire-que-respiramos/>
Accessed 15 January 2020.

Photo cited: "contaminación ciudades"
<https://pixabay.com/es/photos/la-contaminación-fábrica-2575166/>
Accessed 9 March 2020.

Article cited by Ortí, Antonio: "La salud está en el aire" [Nuestra salud está en el aire | Reportajes | MG Magazine \(magazinedigital.com\)](#) Accessed 30 January 2020.