



CLIMATE DETECTIVES 2021 – 2022



CALIDAD DEL AIRE. VILLASANA. 2º ESO B.
IES DOCTOR SANCHO DE MATIENZO

RESEARCH QUESTION

HOW POLLUTING GASSES AND OTHER PARTICLES AFFECTS OUR AIR IN CITIES AND VILLAGES.

SUMMARY OF PROJECT

WE HAVE INVESTIGATED DIFFERENT POLLUTING GASSES IN THE AIR IN TWO VILLAGES NEAR WHERE WHE LIVE (VILLASANTE AND BALMASEDA) AND IN THE CAPITAL OF SPAIN, MADRID.

DATA ARE COLLECTED IN THE WEB AIR QUALITY.NET. IN DIFFERENT DAYS OF FEBRUARY , MARCH AND APRIL 2022.

PARAMETERS WE HAVE MEASURED ARE ICA (INDEX QUALITY AIR), OZONE (O3), CARBON MONOXIDE (CO), NITROGEN DIOXIDE (NO2), SULFUR DIOXIDE (SO2), PARTICLES WITH MOLECULAR WEGIHT OF 2,5 MICRONS (1/100000m) AND PM 10u.



Figure 1: POLLUTING GASSES AND PARTICLES IN THE AIR OF VILLASANTE (BURGOS) APRIL,21- 2022

MAIN RESULTS

WE HAVE OBSERVED THAT IN GENERAL THE CONTAMINATION IS HIGHER IN THE CAPITAL THAT IN THE VILLAGES BECAUSE THE HUGE SMOKE OF TRAFFIC AND INDUSTRY.

WE HAVE REALIZED THAT THE ICA (INDEX QUALITY AIR) IS COLLECTED FUNCTION THE WORSE CONTAMINANT; DOUBT TO THE FACT THERE IS A LOT OF POLLEN IN THE VILLAGES IN SPRING , SOME DAYS THE DATA ARE WORSE IN THE VILLAGES THAT IN THE CAPITAL.

POLLUTING GASSES LIKE NO2 AND SO2 CONVERTS IN SULFURIC ACID (H2SO4) AND NITRIC ACID (HNO3) IN CLOUDS, WHICH WILL PRODUCE ACID RAIN . ACID RAIN CONTAMINATES RIVERS AND ALSO DAMAGES STONE MONUMENTS.

THE POLLUTING GASSES AND OTHER CONTAMINANTS THAT WE HAVE INVESTIGATED ARE MOSTLY PRODUCED BY FOSSILS FUELS OF TRAFFIC AND INDUSTRY.

DATOS DE CALIDAD DEL AIRE COMPARATIVOS. 2022. 2º ESO B.

VADRID	ICA	O3 OZONO	PM2,5µ	PM 10 µ	CO	NO2	SO2	
06/02/2022	57	99	8	18	802	113	2,3	
30/03/2022	35	17	35	27	3	28	1	
05/04/2022	32	69	7,8	20	218	19	0,5	
13/04/2022	46	77	8,8	3,6	435	94	0,5	

/VILLASANTE	ICA	O3 OZONO	PM2,5µ	PM 10 µ	CO	NO2	SO2	ug/m3)
i/22/22	36	81	6	8,3	149	7,144	1,31	
30/03/2022	88	88	30	31	149	2,25	1,5	
05/04/2022	40	88	6,7	10	183	12	1,8	
13/04/2022	31	69	6,6	11	149	5,2	2,09	

BALMASEDA	ICA	O3 OZONO	PM2,5µ	PM 10 µ	CO	NO2	SO2	(ug/m3)
06/02/2022	37	83	5,8	15	149	9,024	1,572	
30/03/2022	88	88	30	50	149	3,1	1,8	
05/04/2022	40	88	7,2	10	195	19	1,8	
13/04/2022	33	53	7,9	10	149	5,2	2,09	

Figure 2: DATA CONTAMINANTS AND POLLUTING GASSES IN THE AIR OF VILLASANTE, BALMASEDA AND MADRID.

ACTIONS TO HELP LESSEN TO THE PROBLEM



Figure 3: MORE BICYCLE ; LESS SMOKE.

CORRECTIVE ACTIONS IN ORDER TO REDUCE CONTAMINANTS IN OUR AIR :

RECYCLE PRODUCTS TO REDUCE THE CONSUMPTION OF RAW MATERIALS.

WE HAVE DECIDE TO REDUCE THE USE OF HEATING AT HOME AND SCHOOL AND USE WARM CLOTHES INSTEAD.

USE THE BIKE AND PUBLIC TRANSPORT INSTEAD THE CAR.

WE WILL TRY TO BUY LOCAL PRODUCTS TO AVOID TRANSPORT EMISSIONS.

IN THAT WAY WE WILL IMPROVE THE ICA OF OUR AIR , AND OUR RIVERS WILL IMPROVE THEIR QUALITY TOO