

WEEKLY REPORT – WASTEWATER-BASED EPIDEMIOLOGICAL SURVEILLANCE OF THE SARS-COV-2

— RESULTS OF 23/03/2022

Authors: R. Janssens¹, H. Maloux¹, S. Hanoteaux¹, B. Verhaegen², K. Van Hoorde², K. Dierick², S. Quoilin¹, K. Blot¹, M. Lesenfants^{1*}

¹ Sciensano, Service Epidemiology of infectious diseases

² Sciensano, Service Foodborne pathogens

*Project leader and contact: marie.lesenfants@sciensano.be

In collaboration with:



TABLE OF CONTENTS

TABLE OF CONTENTS	2
1. Summary	3
2. Introduction	4
3. Methodology	4
3.1. SAMPLE COLLECTION AND ANALYSIS	4
3.2. WASTEWATER RESULTS	5
3.3. ALERTING INDICATORS	5
3.4. CASES RESULTS.....	6
3.5. CAUTION POINTS FOR THE RESULTS INTERPRETATION.....	6
4. Results	7
4.1. REGIONS.....	7
4.2. PROVINCES	9
4.3. CATCHMENT AREAS.....	10
4.4. VARIANTS	12
5. Appendix – Areas classified by alerting indicator	13

1. Summary

In the present work, the circulation of the SARS-CoV-2 virus in the environment is assessed based on three indicators. The analysis of wastewater samples collected in 42 wastewater treatment plants covers 45% of the Belgian population, with increased accuracy in the urban areas. The results of the wastewater surveillance are a source of complementary information to the infection cases number. Indeed, the wastewater results do notably include all asymptomatic persons, and are independent of the testing strategy.

Here are the conclusions based on the latest results of March 23th 2022:

- Indicators modification: From this week onwards, the indicators were computed on the “viral loads” signal to be no more impacted by rainy events as the viral loads accounts for the dilution. Further details can be found in the methodology appendix document.
- At the national level: For the first time in five weeks, the number of areas in Increasing trend has stopped to increase (24 areas are still in Increasing trend). This change of tendency was also observed in the reduction of areas for which the Fast increase indicator is fulfilled.
- At the provincial level: The Increasing trend indicator is still fulfilled in 8 provinces: Antwerpen, Brabant Wallon, Hainaut, Liège, Luxembourg, Namur, Vlaams-Brabant, and West-Vlaanderen. The Fast increase indicator is only fulfilled in the province of Limburg.
- At the covered areas level: among the 41 areas covered¹, the number of treatment plants belonging to the different indicators are 6 for the “High circulation” indicator, 5 for the “Fast increase” indicator, and 24 for the “Increasing trend” indicator.
- From this week onwards, the wastewater indicators were computed on the 5th wave as reference period. This modification did not impact the Fast increase and Increasing trend indicators. However, this change reduced the number of areas fulfilled by the High circulation indicator as the maximum concentration recorded during the 5th wave were significantly higher than the ones of the 3rd wave.
- An particularly alerting situation is evidenced for the covered areas of Leuven and Marche-en-Famenne as all three indicators are fulfilled.
- The risk of underestimating the Omicron variant in wastewater was assessed to be negligible.

The wastewater situation can be followed on a weekly basis on:

- The graphics available on the public [COVID-19 dashboard](#)
- The Risk Assessment Group (RAG) updating the weekly epidemiological situation through a report validated by the Risk Management Group (RMG) and published every Friday in [French](#) and [Dutch](#).
- Further details on the methodology applied for the wastewater surveillance can be found in [the Appendix Methodology document \(access available online\)](#). The methodology was updated this week.

¹ Due to the recent flooding events, the treatment plants from Wegnez (Verviers) and Grosses-Battes (Liège) are temporarily out of order. These two areas had therefore not been screened for SARS-CoV-2. Liège is still well represented within this surveillance, however Verviers is not. Since the 13th of October, the covered area of Soumagne is added to the surveillance.

2. Introduction

In mid-September 2020 started the SARS-CoV-2 national wastewater surveillance project. The present report is an outcome of this project aiming to assess weekly the wastewater-based epidemiological situation of Belgium.

The surveillance is based on the analysis of water samples collected twice per week from the influent of 42 WasteWater Treatment Plants (WWTPs) spread over Belgium. The evolution of the SARS-CoV-2 wastewater concentrations measured over time in the different treatment plants is analysed at different levels: regional, provincial, and the catchment area covered by the individual treatment plants. Also, three alerting indicators were developed to highlight areas of concern regarding the high circulation, the fast evolution, and the increasing trend of the observed wastewater concentrations.

In this report, the weekly wastewater-based epidemiological situation is presented and discussed at the above-mentioned levels based on the three categories of alerting indicators. Moreover, the remaining sources of uncertainties are discussed together with their expected impacts on the wastewater results interpretation.

3. Methodology

3.1. SAMPLE COLLECTION AND ANALYSIS

The surveillance project, which started in mid-September 2020 covers around 45% of the Belgian population. The population covered is 40% in the Flemish region, 35% in the Walloon region, and nearly 100% in the Brussels region. Figure 1 shows the catchment areas covered by the 42 WWTPs included in the project, which are located in high population density areas. A catchment area is defined by the area delimiting the population covered by a specific wastewater sample, collected at the inlet of the WWTPs. Further coverage details can be found in Table 2 by province (see also Table A1 in [the Appendix Methodology document \(access available online\)](#)) and on the [Sciensano public dashboard](#). In practice, 24-hour composite samples are collected twice a week on Mondays and Wednesdays from the influent of WWTP and are analysed for the presence of SARS-CoV-2 RNA by three different laboratories. The resulting SARS-CoV-2 concentrations (3 targeted genes) are delivered to Sciensano within 2 days for data analysis purpose. Concretely, the results which are representative of Mondays and Wednesdays are respectively available on Wednesdays and Fridays.

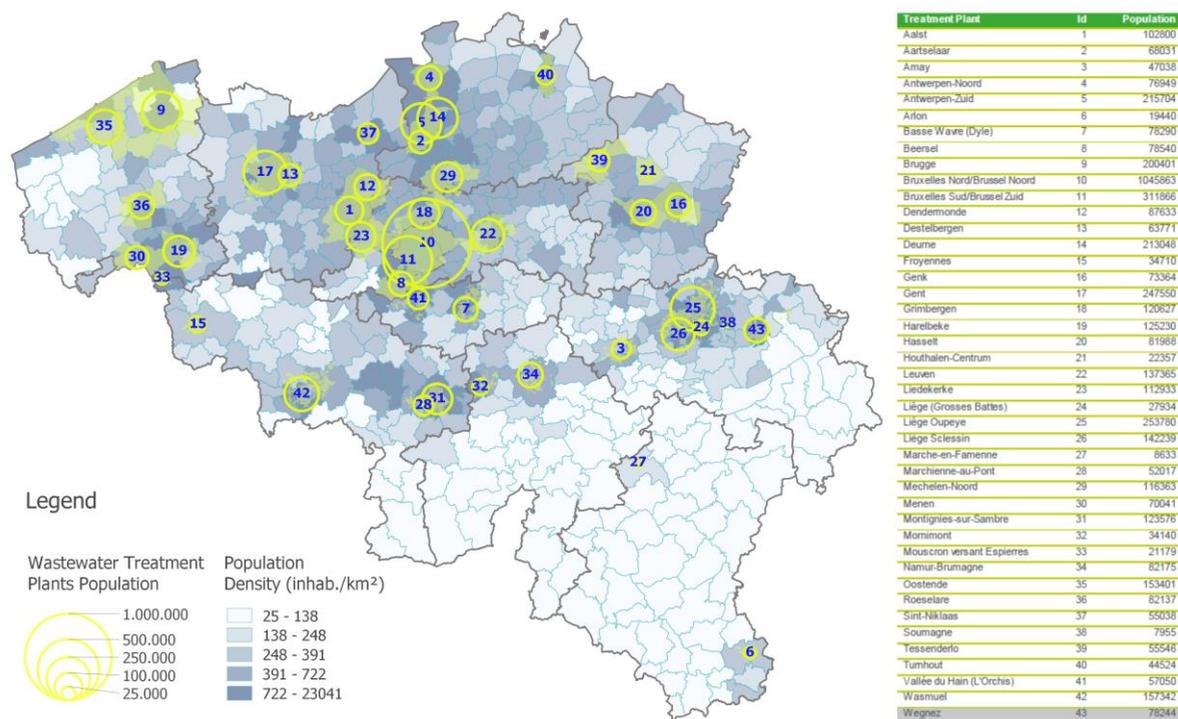


Figure 1: The population located in the areas covered by the wastewater treatment plants (highlighted in yellow) and the population density for each municipality (indicated by the blue scale). Note that due to the recent flooding, the treatment plants of Wegnez and Liège (Grosses Battes) are out of order. These areas are, hence, not considered anymore in the wastewater surveillance and has been partially replaced by the treatment plant of Soumagne.

3.2. WASTEWATER RESULTS

The quantification of SARS-CoV-2 in RNA copies/ ml (concentration) was generalized in mid-February 2021 to all the treatment plants investigated. Before this date, the quantitative values were estimated based on the retrospective application of the quantification method (see details in Appendix) from mid-September 2020 to mid-February 2021 for Flanders and Brussels. In Wallonia, the quantitative results were available since the start.

Preliminary results allowed for estimating the limit of quantification of the analytical method at 20 copies/ml.

In order to account for possible dilution by rainy events and for the number of people persons living in the catchment of each WWTP, a correction is applied on the viral concentration: the concentration is divided by the inlet flow and by the number of inhabitant equivalent of its respective WWTP and expressed by 100k inhabitant. This correction changes the reporting units from copy/ml into copy/day/100k inhabitants equivalent. We will refer this new signal as viral load instead of viral concentration.

3.3. ALERTING INDICATORS

To highlight the areas of possible concern, the three following types of alerting indicators are assessed twice a week, based on the viral load (RNA copies/day/100k inhabitants) measured for the three targeted gene fragments (E, N1, and N2):

1. The **High circulation** indicator highlights the catchment areas where the viral loads are high. It corresponds to a situation where the viral loads exceed half of the highest value recorded during the third wave (i.e. from first of January 2022 till first of March 2022).

2. The **Fast increase** indicator highlights the catchment areas where the viral loads have rapidly increased for the last week. It corresponds to a situation where the moving average on the past 7 days of the viral load has increased faster than 70% per week if being above the estimated limit of quantification. The increasing slope is normalized for each treatment plant.
3. The **Increasing trend** indicator highlights the catchment areas where the viral loads have been increasing for more than 6 days. The indicator is computed based on the moving average on the past two weeks of the viral load

The indicators were developed in order to be able to track the different phases of an outbreak. Typically, when the viral loads in wastewaters in an area start to increase, the indicator Increasing trend will be the first fulfilled. If the viral loads increase quickly, the Fast increase indicator will be fulfilled. Finally, after the initial increasing phase, the viral loads in an area may be sufficiently high to result in the High circulation to be fulfilled.

It should be noted that in several areas, the viral load exceeded the maximal load registered during the 3rd wave. The date at which the maximal viral load has been reached for each area is indicated in the tables A1 to A4 in the appendices.

3.4. CASES RESULTS

The cases number data presented in this report come from the COVID-19 laboratory-confirmed cases database centralized by Sciensano. The cases number, used to compute the 14 days-incidence, only accounts for the physical areas covered by the wastewater project (see Figure 1).

3.5. CAUTION POINTS FOR THE RESULTS INTERPRETATION

Only the trends, observed through the alerting indicators, should be assessed for the comparison of different areas. As the viral load values differ from a WWTP to another, notably due to the differences in population sizes covered, absolute values should not be compared. Additionally, the situation comparison between the regions should be considered with caution. The degree of comparability is not yet known and depends on the comparability of the results between the different laboratories performing the analyses (see [the Appendix Methodology document \(access online\)](#)).

Moreover, the wastewater viral loads and the cases numbers presented in this report do not originate from the same population, even though the positive cases are selected only for the municipalities covered by the wastewater surveillance. For instance, the wastewater results account for all infected persons (whatever age or symptomatic condition) while the cases numbers include only the persons clinically tested positive. Likewise, an infected person covered by the wastewater results could be associated with another area in the clinical surveillance as the person's postal code is used for clinical statistics, i.e. mobility bias. Therefore, the correlation between the wastewater viral load and the cases number varies according to the area considered. The wastewater results are thus complementary and independent information to the results of the cases.

The correlation between the wastewater viral loads and the cases numbers could also be influenced by the vaccination campaign and the circulation of variants.

4. Results

4.1. REGIONS

Figure 2 represents the quantitative SARS-CoV-2 RNA viral loads in the wastewaters and the 14 days incidence for each region, compiling the incidence data of the area covered by the wastewater surveillance. Several waves can be seen in Figure 2:

- The 3rd wave occurring in March 2021
- The 4th wave occurring in December 2021
- The 5th wave occurring in January 2022

It should be noted that the last viral loads in wastewaters are not displayed in the Figure 2 as the regional corresponding trends are based on centred moving averages, and therefore will be validated with the next week results².

Table 1 shows, for each region, the results associated with the samples of Wednesday January 26th 2022. The last trends were analysed based on the alerting indicators presented in Table 1. The overall trend observed this week indicates that the evolution of the circulation of the SARS-CoV-2 in wastewater has changed. Only in Wallonia, the Increasing trend indicator stays fulfilled. In all three regions, the Fast increase indicator is not fulfilled anymore. This indicates that the increasing tendency observed lately has stopped in Brussels and in Flanders.

Table 1: Alerting indicators fulfilled (1) or not (0) on March 23th 2022. Columns represent the population coverage of the regions (Pop. coverage) and the three alerting indicators High Circulation (High), Fast increase (Fast) and Increasing trend (Incr.). The specifications of the four last columns are explained in the footnotes 1-4 below the table. Missing data is indicated with a “/”.

Region	Pop. coverage	High	Fast	Incr.	Norm. viral load (%) ¹	Mean viral load ²	Norm. evol. (%/week) ³	Incr. days ⁴
Brussels	100%	0	0	0	11	65	-16	4
Flanders	41%	0	0	0	32	32	31	6
Wallonia	31%	0	0	1	30	7.6	-55	15

¹ : the viral load normalized with the maximum viral load measured in the corresponding catchment area during the fifth wave (i.e. from first of January 2022 till the first of march 2022).

² : the viral load computed on the mean of the replicate of the three targeted gene fragments as explained in section “3.2 Wastewater results”. The mean viral load is expressed in 10¹² copies/day/100k inhabitants.

³ : the slope (%/week) of the past 7 days moving average of the viral load if being above the estimated limit of quantification.

⁴ : the cumulative number of days of increase of the past 14 days moving average of the viral load.

² The trends of SARS-CoV-2 circulation in wastewater, given by the dark line on the graphs, corresponds to a 14 days centred mean of the viral load measured.

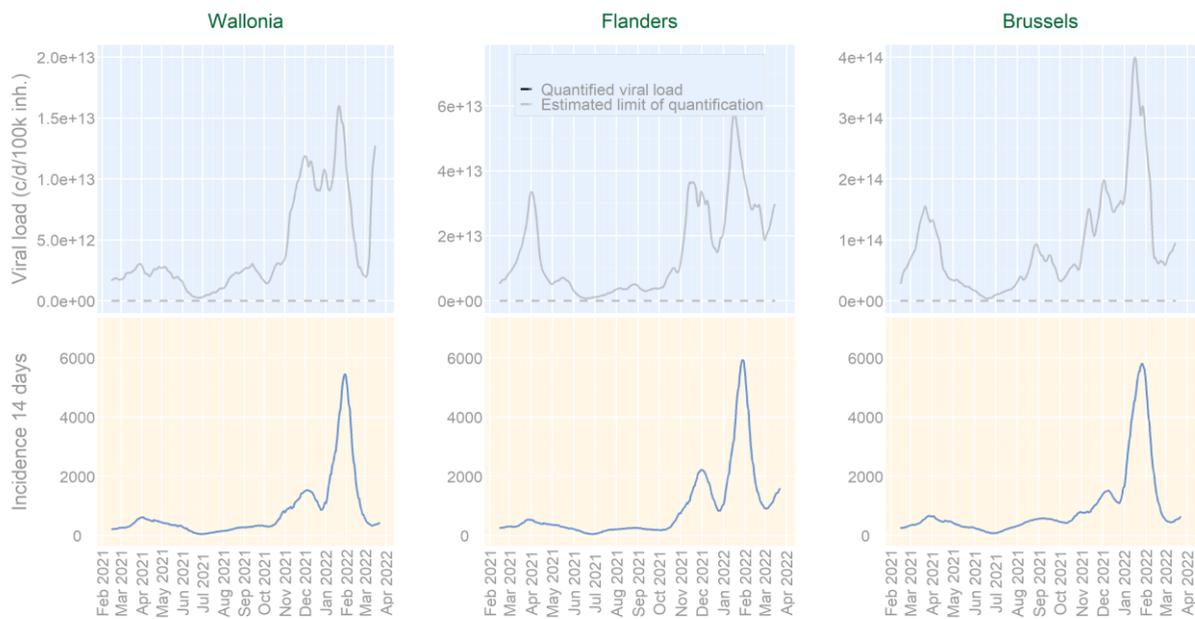


Figure 2: The SARS-CoV-2 RNA viral loads expressed as copies/days/100k habitants (based on the two weeks centered moving average applied on the linear interpolation) (Top), and the 14 days incidence in the population covered by the wastewater surveillance since mid-February 2021 (bottom).

4.2. PROVINCES

Table 2 shows, for each Province, the results associated with the samples of Wednesday March 23th 2022, for the three alerting indicators:

- The High circulation indicator is fulfilled in 3 provinces: Brabant Wallon, Luxembourg, and Vlaams-Brabant.
- The Fast increase indicator is only fulfilled in the province of Limburg.
- The Increasing trend indicator is fulfilled in 8 provinces: Antwerpen, Brabant Wallon, Hainaut, Liège, Luxembourg, Namur, Vlaams-Brabant, and West-Vlaanderen.

Table 2: Alerting indicators fulfilled (1) or not (0) on March 23th 2022. Columns represent the population coverage of the WWTPs within the Province (Pop. coverage) and the three alerting indicators High circulation (High), Fast increase (Fast) and Increasing trend (Incr.). The specifications of the four last columns are explained in the footnotes 1-4 below the table. Missing data is indicated with a “/”.

Province	Pop. coverage	High	Fast	Incr.	Norm. viral load (%) ¹	Mean viral load ²	Norm. evol. (%/w) ³	Incr. days ⁴
Antwerpen	41%	0	0	1	14	6	-1	8
Brabant Wallon	33%	1	0	1	62	9.3	-65	14
Brussels	100%	0	0	0	11	65	-16	4
Hainaut	29%	0	0	1	27	4.9	-62	18
Liège	50%	0	0	1	19	7.2	-50	14
Limburg	26%	0	1	0	38	15	360	1
Luxembourg	10%	1	0	1	185	61	-6	18
Namur	23%	0	0	1	27	4.4	-52	10
Oost-Vlaanderen	38%	0	0	0	30	25	-23	1
Vlaams-Brabant	61%	1	0	1	62	94	52	11
West-Vlaanderen	52%	0	0	1	33	31	-19	9

¹ : the viral load normalized with the maximum viral load measured in the corresponding catchment area during the fifth wave (i.e. from first of January 2022 till the first of March 2022).

² : the viral load computed on the mean of the replicate of the three targeted gene fragments as explained in section “3.2 Wastewater results”. The mean viral load is expressed in 10¹² copies/day/100k inhabitants.

³ : the slope (%/week) of the past 7 days moving average of the viral load if being above the estimated limit of quantification.

⁴ : the cumulative number of days of increase of the past 14 days moving average of the viral load.

4.3. CATCHMENT AREAS

Table 3 shows, for each catchment area, the values of the three alerting indicators obtained based on the results of last Wednesday's sample. Table 3 is a snapshot of the number of areas highlighted by the indicators for the last results obtained. Here are the results associated with the samples of March 23th 2022:

- The High circulation indicator is fulfilled in 6 covered areas: Marche-en-Famenne (556 % of the highest level registered for this area during the 5th wave), Leuven (102 %), Liedekerke (99 %), Aalst (63 %), Vallée du Hain (L'Orchis) (62 %), and Genk (56 %) (see Appendix A1 for more details).
- The Fast increase is fulfilled in 5 covered areas: Houthalen-Centrum, Leuven, Marche-en-Famenne, Sint-Niklaas, and Antwerpen-North (see Appendix A2 for more details).
- The Increasing trend indicator is fulfilled in 24 covered areas. . Further details can be found in Appendix A3. Last week, this indicator was fulfilled in 30 covered areas.
- An alerting situation is evidenced for the covered areas of Leuven and Marche-en-Famenne as all three indicators are fulfilled.

The wastewater results at the level of the local covered areas can be accessed online for each area on the [COVID-19 dashboard](#).

Table 3: Alerting indicators fulfilled (1) or not (0) on March 23th 2022. Columns represent the provinces, different WWTPs within the Provinces and the three alerting indicators High circulation (High), Fast increase (Fast) and Increasing trend (Incr.). The specifications of the four last columns are explained in the footnotes 1-4 below the table. Missing data is indicated with a “/”.

Province	WWTP	High	Fast	Incr.	Norm. viral load (%) ¹	Mean viral load ²	Norm evol. (%/week) ³	Incr. days ⁴
Oost-Vlaanderen	Aalst	1	0	0	63	39	-36	2
Liège	Amay	0	0	1	10	3.6	-24	14
Antwerpen	Antwerpen-North	0	1	0	10	2.3	77	0
Antwerpen	Antwerpen-South	0	0	1	13	5.9	45	21
Luxembourg	Arlon	0	0	1	21	15	-59	16
West-Vlaanderen	Brugge	0	0	1	35	22	6	9
Brussels	Brussel-South	0	0	1	11	54	-62	16
Hainaut	Froyennes	0	0	1	35	4.8	-68	14
Limburg	Genk	1	0	0	56	23	-4	0
Vlaams-Brabant	Grimbergen	0	0	1	12	30	-59	14
Limburg	Houthalen-Centrum	0	1	1	39	4.6	3626	7
Vlaams-Brabant	Leuven	1	1	1	102	180	208	9
Vlaams-Brabant	Liedekerke	1	0	1	99	88	24	16
Liège	Liège Oupeye	0	0	1	18	3.4	-42	14
Liège	Liège Sclessin	0	0	1	22	15	-73	14
Luxembourg	Marche-en-Famenne	1	1	1	556	160	115	21

Province	WWTP	High	Fast	Incr.	Norm. viral load (%) ¹	Mean viral load ²	Norm evol. (%/week) ³	Incr. days ⁴
Hainaut	Marchienne-au-Pont	0	0	1	18	6	-32	14
Hainaut	Montignies-sur-Sambre	0	0	1	17	4.4	-79	16
Namur	Namur-Brumagne	0	0	1	36	5.7	-40	14
West-Vlaanderen	Oostende	0	0	1	47	49	-8	16
West-Vlaanderen	Roeselare	0	0	1	39	35	-37	14
Oost-Vlaanderen	Sint-Niklaas	0	1	1	28	17	103	9
Liège	Soumagne	0	0	1	23	18	-64	14
Antwerpen	Turnhout	0	0	1	20	9.3	21	23
Brabant Wallon	Vallée du Hain (L'Orchis)	1	0	1	62	9.3	-45	14
Hainaut	Wasmuel	0	0	1	39	4.7	-57	23

¹ : the viral load normalized with the maximum viral load measured in the corresponding catchment area during the fifth wave (i.e. from first of January 2022 till the first of march 2022).

² : the viral load computed on the mean of the replicate of the three targeted gene fragments as explained in section "3.2 Wastewater results"; The mean viral load is expressed in 10¹² copies/day/100k inhabitants.

³ : the slope (%/week) of the past 7 days moving average of the viral load if being above the estimated limit of quantification.

⁴ : the cumulative number of days of increase of the past 14 days moving average of the viral load.

Figure 3 was developed to offer a dynamic view of the three alerting indicators over time. For further insights on the dynamic of the different indicators, see Section 3.3.

For the first time in five weeks, the number of areas in Increasing trend has stopped to increase. This change of tendency was also observed in the reduction of areas for which the Fast increase indicator is fulfilled.

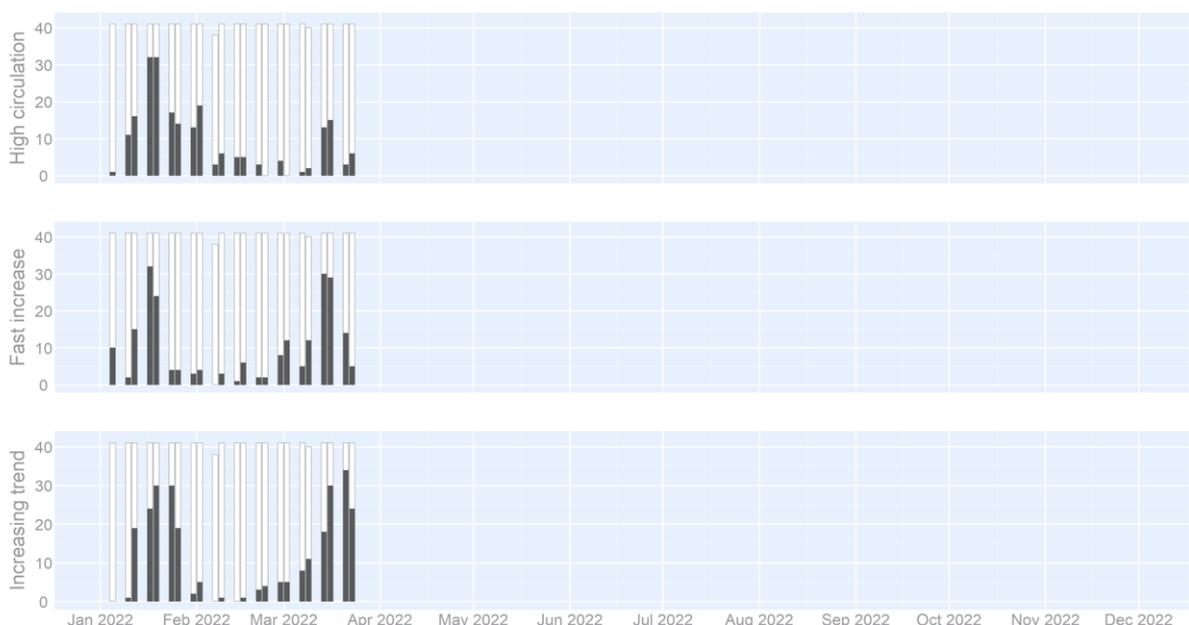


Figure 3: The number of areas (among the 41 covered by the wastewater surveillance this week and the 42 normally considered), with positive alerting indicators (black) compared to the total number of areas considered every week in the wastewater surveillance (white). Latest results (last bar) are from March 23th 2022. The white bars represent the total number of areas considered every week in the wastewater surveillance. The blue bars indicate dates at which an underestimation of the number of areas in which indicators are fulfilled due to dilution in the wastewaters.

4.4. VARIANTS

The Omicron variant represents a high proportion of all the reported cases in Belgium³. The impact of the Omicron variant was assessed to be negligible for the following reason: mutations present in the Omicron variant on the N1 and E genes could have potentially led to a drop out of those two genes leading to an underestimation of the viral loads in wastewaters. Preliminary experimental lab results indicate that no drop out of the genes should be expected. Hence, the sensitivity of the analytical lab methods used was not impacted. Therefore, the circulation of the Omicron variant is not underestimated in wastewaters.

However, the Omicron variant might have an impact on the faecal shedding load if infected people would excrete less in their faeces than for Delta. That stays hypothetical as we do not have strong evidence on it yet.

A regular investigation of the possible impact of variants of concern is done in order to screen their evolution in time.

³ Source :[Molecular surveillance of SARS-CoV-2](#)

5. Appendix – Areas classified by alerting indicator

A 1: Covered areas (6 out of 41 on March 23th 2022) characterized as High circulation sorted in the descending order of importance.

Province	WWTP	High	Fast	Incr.	Norm. viral load (%) ¹	Mean viral load ²	Norm evol. (%/week) ³	Incr. days ⁴	Date Max cc ⁵
Luxembourg	Marche-en-Famenne	1	1	1	556	160	115	21	23/03/2022
Vlaams-Brabant	Leuven	1	1	1	102	180	208	9	23/03/2022
Vlaams-Brabant	Liedekerke	1	0	1	99	88	24	16	f5th wave
Oost-Vlaanderen	Aalst	1	0	0	63	39	-36	2	5th wave
Brabant Wallon	Vallée du Hain (L'Orchis)	1	0	1	62	9.3	-45	14	5th wave
Limburg	Genk	1	0	0	56	23	-4	0	09/03/2022

¹ : the viral load normalized with the maximum viral load measured in the corresponding catchment area during the fifth wave (i.e. from first of January 2022 till the first of March 2022).

² : the viral load computed on the mean of the replicate of the three targeted gene fragments as explained in section “3.2 Wastewater results”. The mean viral load is expressed in 10¹² copies/day/100k inhabitants.

³ : the slope (%/week) of the past 7 days moving average of the viral load if being above the estimated limit of quantification.

⁴ : the cumulative number of days of increase of the past 14 days moving average of the viral load.

⁵ : date at which the measured viral load was the highest since the beginning of the measurements. If the date was between the first of January 2022 and the first of March 2022, the date is considered to be during the fifth wave and mentioned as such.

A 2: Covered areas (5 out of 41 on the March 23th 2022) characterized as Fast increase sorted in the descending order of importance.

Province	WWTP	High	Fast	Incr.	Norm. viral load (%) ¹	Mean viral load ²	Norm evol. (%/week) ³	Incr. days ⁴	Date Max cc ⁵
Limburg	Houthalen-Centrum	0	1	1	39	4.6	3626	7	5th wave
Vlaams-Brabant	Leuven	1	1	1	102	180	208	9	23/03/2022
Luxembourg	Marche-en-Famenne	1	1	1	556	160	115	21	23/03/2022
Oost-Vlaanderen	Sint-Niklaas	0	1	1	28	17	103	9	5th wave
Antwerpen	Antwerpen-North	0	1	0	10	2.3	77	0	5th wave

¹ : the viral load normalized with the maximum viral load measured in the corresponding catchment area during the fifth wave (i.e. from first of January 2022 till the first of March 2022).

² : the viral load computed on the mean of the replicate of the three targeted gene fragments as explained in section “3.2 Wastewater results”. The mean viral load is expressed in 10¹² copies/day/100k inhabitants.

³ : the slope (%/week) of the past 7 days moving average of the viral load if being above the estimated limit of quantification.

⁴ : the cumulative number of days of increase of the past 14 days moving average of the viral load.

⁵ : date at which the measured viral load was the highest since the beginning of the measurements. If the date was between the first of January 2022 and the first of March 2022, the date is considered to be during the fifth wave and mentioned as such.

A 3: Covered areas (24 out of 41 on the March 23th 2022) characterized as Increasing trend sorted in the descending order of importance.

Province	WWTP	High	Fast	Incr.	Norm. viral load (%) ¹	Mean viral load ²	Norm evol. (%/week) ³	Incr. days ⁴	Date Max cc ⁵
Antwerpen	Turnhout	0	0	1	20	9.3	21	23	5th wave
Hainaut	Wasmuel	0	0	1	39	4.7	-57	23	16/03/2022
Antwerpen	Antwerpen-South	0	0	1	13	5.9	45	21	5th wave
Luxembourg	Marche-en-Famenne	1	1	1	556	160	115	21	23/03/2022
Luxembourg	Arlon	0	0	1	21	15	-59	16	5th wave
Brussels	Brussel-South	0	0	1	11	54	-62	16	5th wave
Vlaams-Brabant	Liedekerke	1	0	1	99	88	24	16	5th wave
Hainaut	Montignies-sur-Sambre	0	0	1	17	4.4	-79	16	5th wave
West-Vlaanderen	Oostende	0	0	1	47	49	-8	16	5th wave
Liège	Amay	0	0	1	10	3.6	-24	14	5th wave
Brabant Wallon	Basse Wavre (Dyle)	0	0	1	NaN	NaN	-79	14	16/03/2022
Hainaut	Froyennes	0	0	1	35	4.8	-68	14	16/03/2022
Vlaams-Brabant	Grimbergen	0	0	1	12	30	-59	14	5th wave
Liège	Liège Oupeye	0	0	1	18	3.4	-42	14	5th wave
Liège	Liège Sclessin	0	0	1	22	15	-73	14	16/03/2022
Hainaut	Marchienne-au-Pont	0	0	1	18	6	-32	14	5th wave
Namur	Namur-Brumagne	0	0	1	36	5.7	-40	14	5th wave
West-Vlaanderen	Roeselare	0	0	1	39	35	-37	14	5th wave
Liège	Soumagne	0	0	1	23	18	-64	14	5th wave
Brabant Wallon	Vallée du Hain (L'Orchis)	1	0	1	62	9.3	-45	14	5th wave
West-Vlaanderen	Brugge	0	0	1	35	22	6	9	5th wave
Vlaams-Brabant	Leuven	1	1	1	102	180	208	9	23/03/2022
Oost-Vlaanderen	Sint-Niklaas	0	1	1	28	17	103	9	5th wave
Limburg	Houthalen-Centrum	0	1	1	39	4.6	3626	7	5th wave

¹ : the viral load normalized with the maximum viral load measured in the corresponding catchment area during the fifth wave (i.e. from first of January 2022 till the first of march 2022).

² : the viral load computed on the mean of the replicate of the three targeted gene fragments as explained in section "3.2 Wastewater results". The mean viral load is expressed in 10¹² copies/day/100k inhabitants.

³ : the slope (%/week) of the past 7 days moving average of the viral load if being above the estimated limit of quantification.

⁴ : the cumulative number of days of increase of the past 14 days moving average of the viral load.

⁵ : date at which the measured viral load was the highest since the beginning of the measurements. If the date was between the first of January 2022 and the first of March 2022, the date is considered to be during the fifth wave and mentioned as such.

A 4: Covered areas (14 out of 41 on the March 23th 2022) in which no alerting indicator are fulfilled.

Province	WWTP	High	Fast	Incr.	Norm . viral load (%) ¹	Mean viral load ²	Norm evol. (%/week) ³	Incr. days ⁴	Date Max cc ⁵
Antwerpen	Aartselaar	0	0	0	25	5.1	-11	2	5th wave
Vlaams-Brabant	Beersel	0	0	0	19	53	-11	0	5th wave
Brussels	Brussels-North	0	0	0	11	68	-2	0	5th wave
Oost-Vlaanderen	Dendermonde	0	0	0	8	1.8	-9	0	5th wave
Oost-Vlaanderen	Destelbergen	0	0	0	30	43	-52	0	5th wave
Antwerpen	Deurne	0	0	0	10	7.9	-64	0	5th wave
Oost-Vlaanderen	Gent	0	0	0	24	25	-42	0	5th wave
West-Vlaanderen	Harelbeke	0	0	0	7	10	-49	0	5th wave
Limburg	Hasselt	0	0	0	40	19	48	2	5th wave
Antwerpen	Mechelen-Noord	0	0	0	15	4.6	-29	0	5th wave
West-Vlaanderen	Menen	0	0	0	35	54	-38	0	5th wave
Namur	Mornimont	0	0	0	5	1.3	-81	0	5th wave
Hainaut	Mouscron versant Espierres	0	0	0	12	5.8	-69	0	14/03/2022
Limburg	Tessenderlo	0	0	0	10	3.7	-14	0	5th wave

¹ : the viral load normalized with the maximum viral load measured in the corresponding catchment area during the fifth wave (i.e. from first of January 2022 till the first of march 2022).

² : the viral load computed on the mean of the replicate of the three targeted gene fragments as explained in section "3.2 Wastewater results". The mean viral load is expressed in 10¹² copies/day/100k inhabitants.

³ : the slope (%/week) of the past 7 days moving average of the viral load if being above the estimated limit of quantification.

⁴ : the cumulative number of days of increase of the past 14 days moving average of the viral load.

⁵ : date at which the measured viral load was the highest since the beginning of the measurements. If the date was between the first of January 2022 and the first of March 2022, the date is considered to be during the fifth wave and mentioned as such.