



Workshop

Control of Antibiotics Use and Surveillance of Clinical Pathogens in Veterinary in Europe

Spanish Agency of Medicines and Medical Devices, Madrid, Spain

29-30 October 2018

Results dissemination: epidemiological
mapping front clinical cases by farming
regions

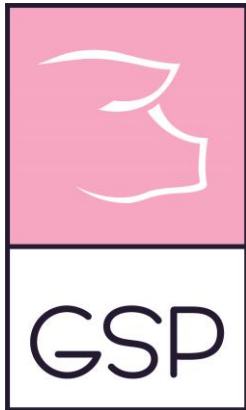
Eduard Allué Pont

IT Manager

Grup de Sanejament Porcí (GSP)

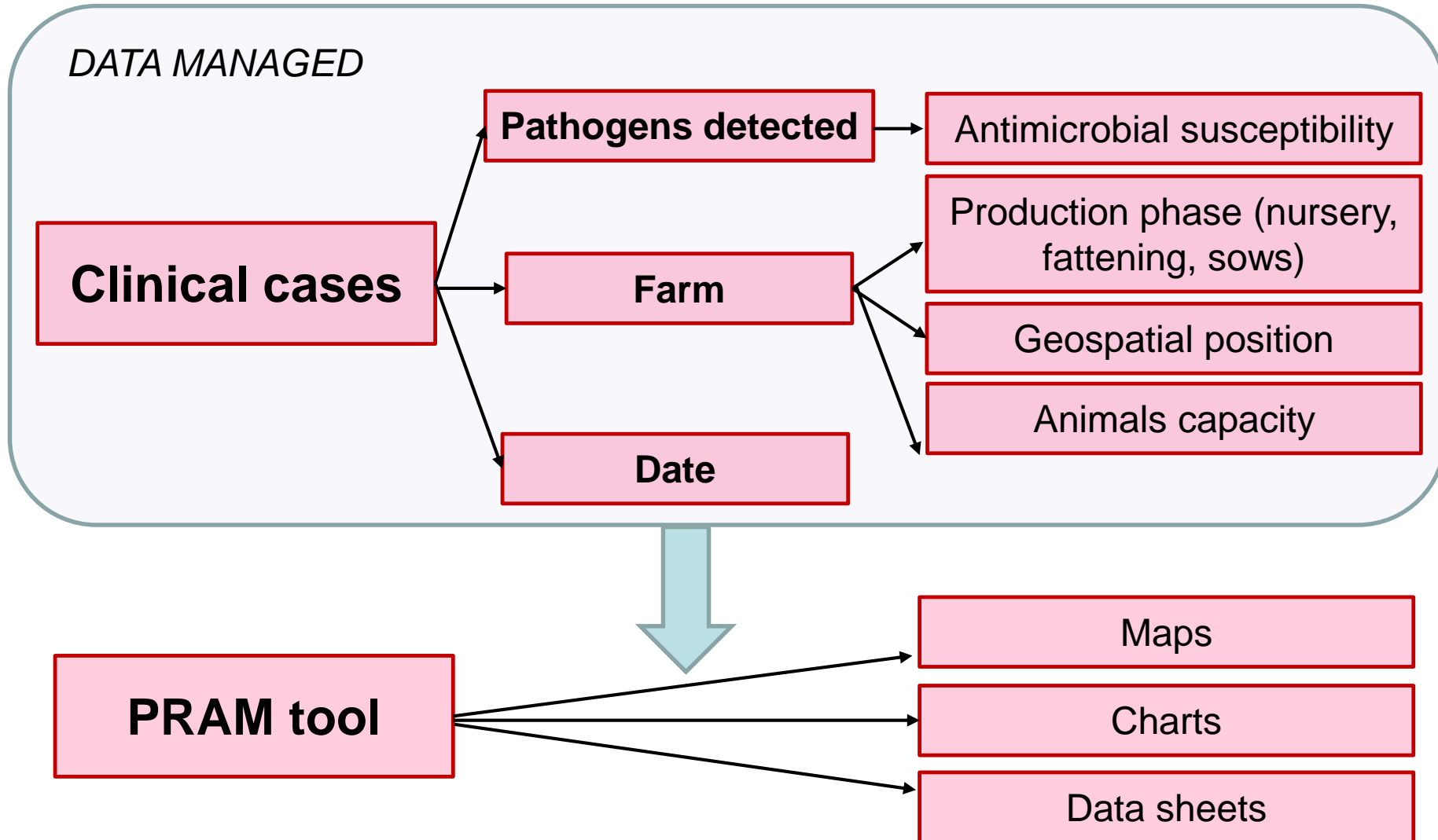
Lleida

About us



Plan Nacional
**Resistencia
Antibióticos**

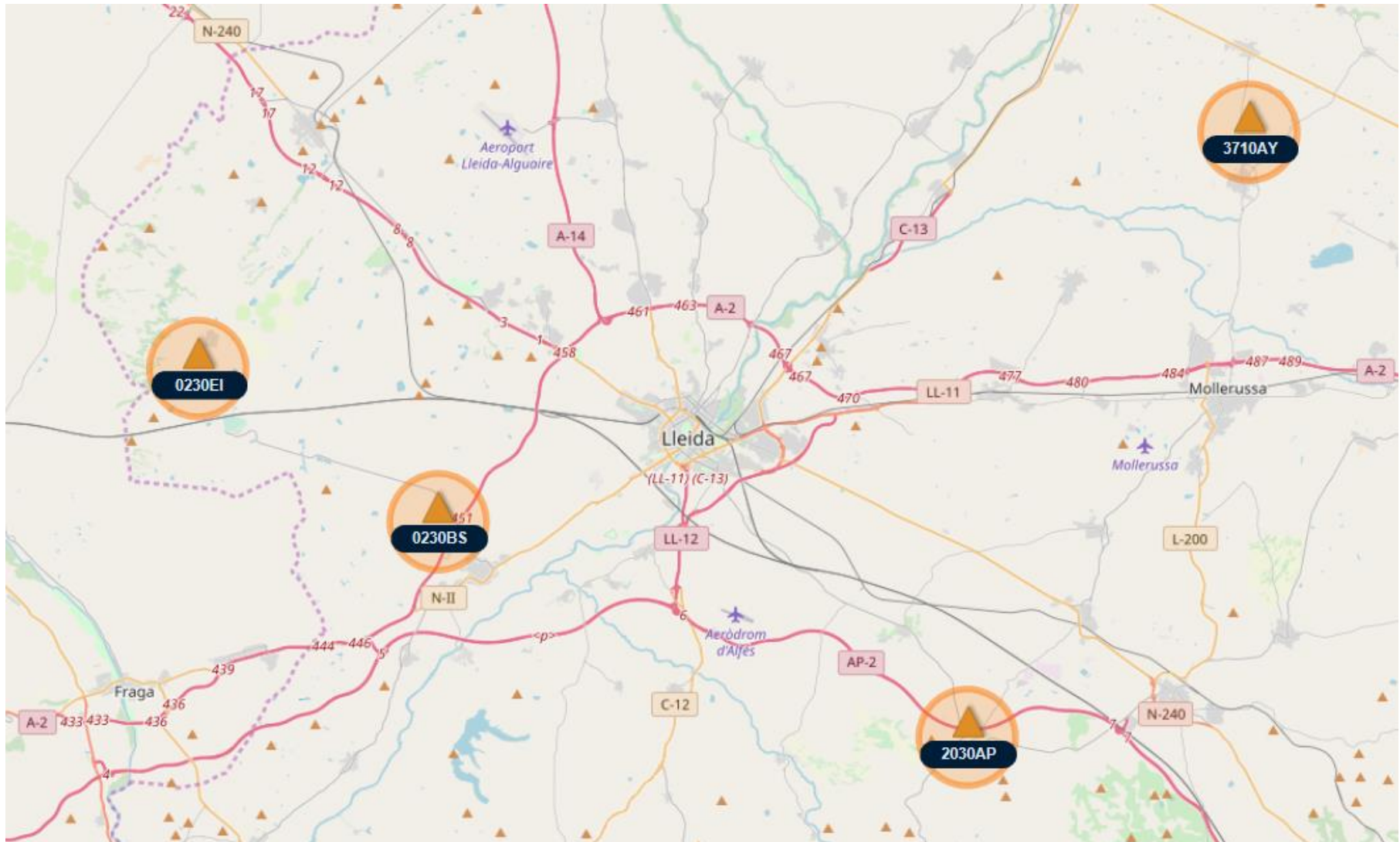
What we are developing



Previous successful cases

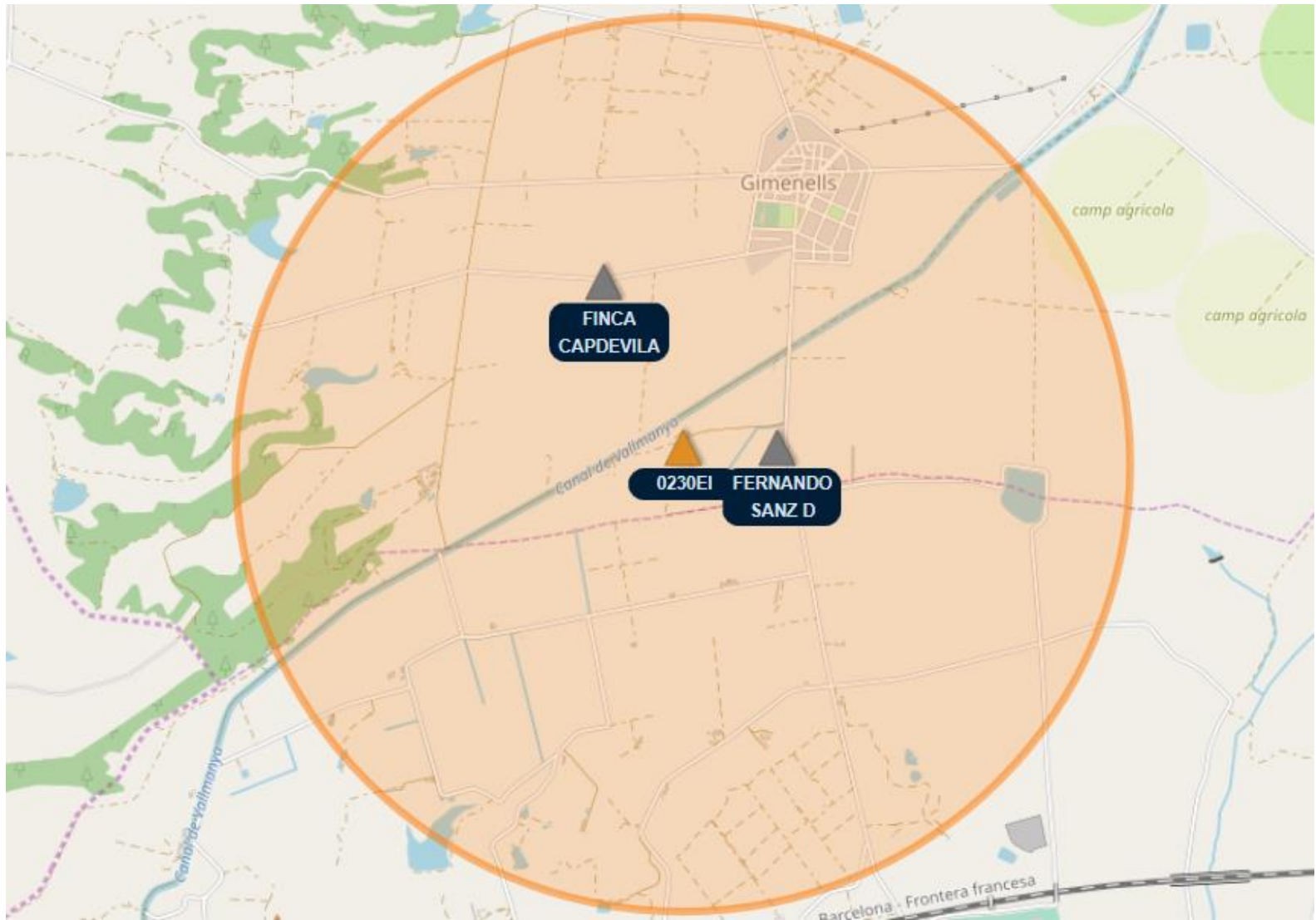
Previous successful cases

Syndromic surveillance of pig diseases. Map of cases:



Previous successful cases

Syndromic surveillance of pig diseases. My near farms:

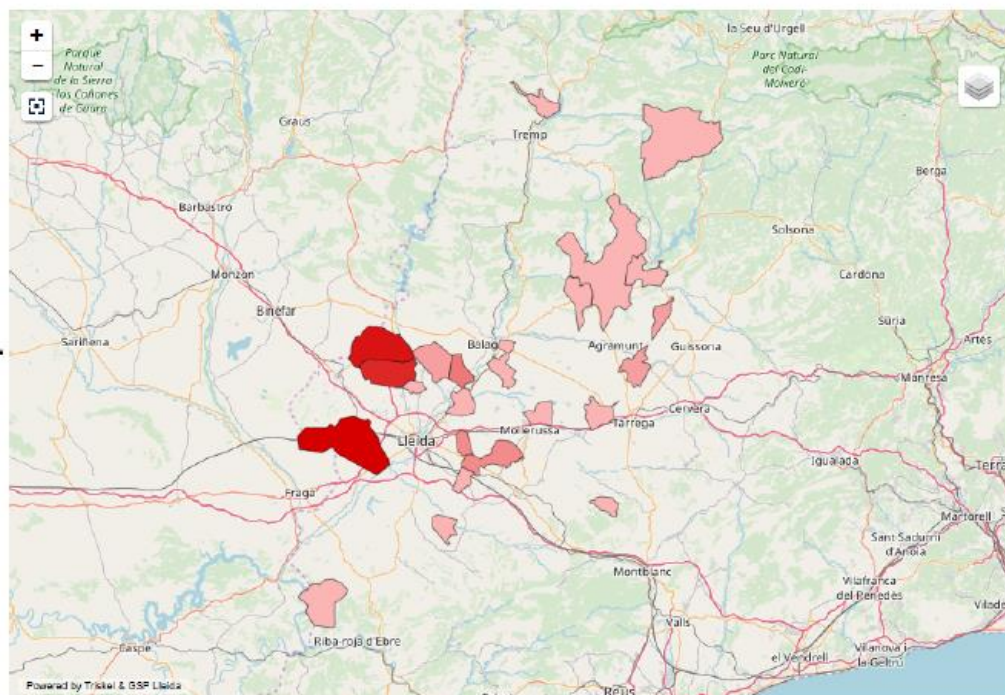


Previous successful cases. Report

Informe situación epidemiológica del trimestre de abril del año 2018

Fecha del documento: miércoles, 23 de mayo de 2018

- Casos clínicos con clínica respiratoria



En el mapa se muestran los nuevos casos clínicos con clínica respiratoria en el último trimestre, totalizados por comarcas

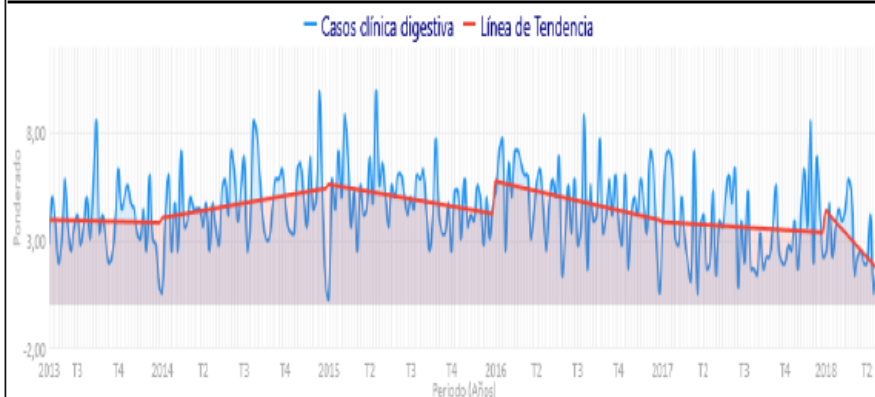
Previous successful cases. Report



Informe situación epidemiológica del trimestre de abril del año 2018

Fecha del documento: miércoles, 23 de mayo de 2018

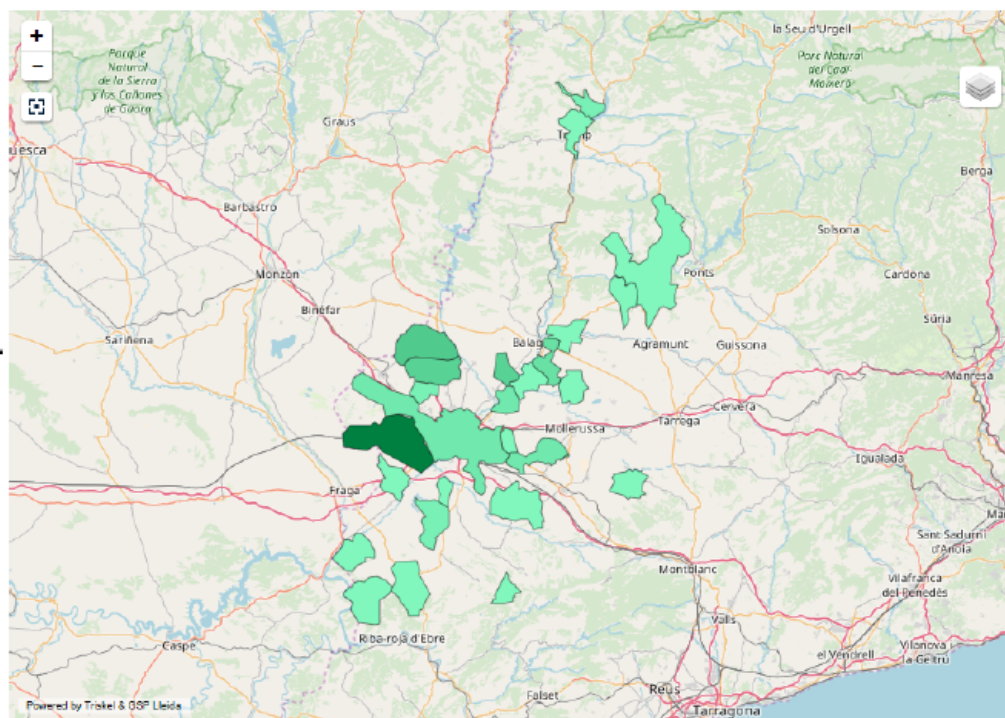
- Casos clínicos con clínica digestiva



En este grafico aparece la suma de los casos clínicos de los últimos 5 años con clínica digestiva, totalizado por semanas.



En este grafico aparece la suma de los casos clínicos del último trimestre con clínica digestiva, totalizado por semanas.



En el mapa se muestran los nuevos casos clínicos con clínica digestiva en el último trimestre, totalizados por comarcas

Previous successful cases. Report



Informe situación epidemiológica del trimestre de abril del año 2018

Fecha del documento: miércoles, 23 de mayo de 2018

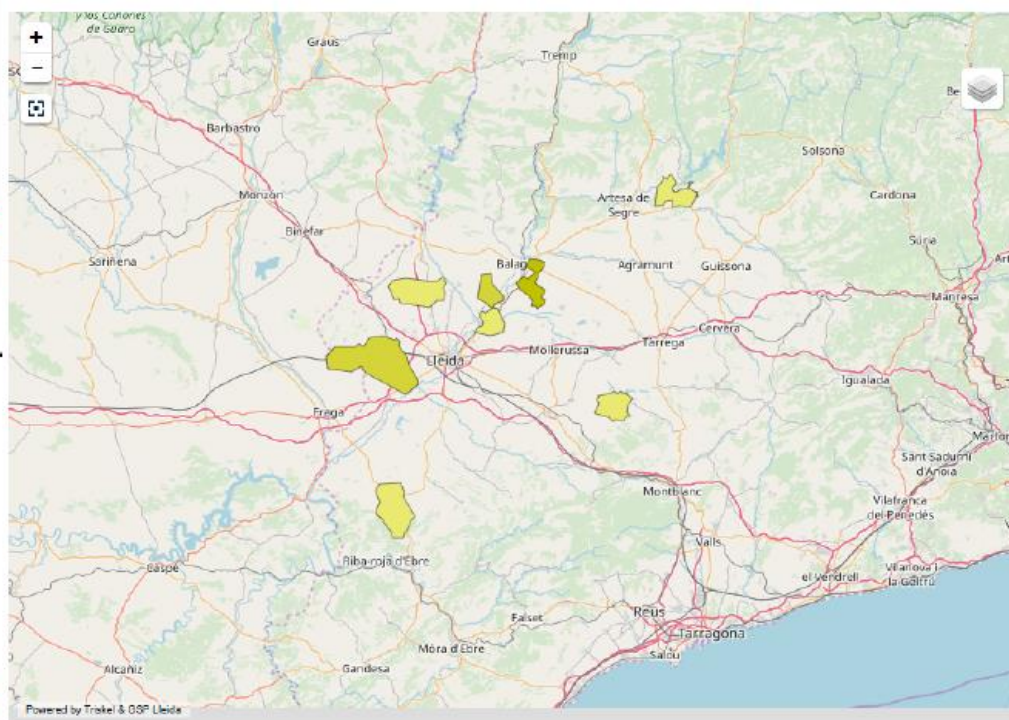
- Casos clínicos con clínica nerviosa



En este grafico aparece la suma de los casos clínicos de los últimos 5 años con clínica nerviosa, totalizado por semanas.



En el mapa se muestran los nuevos casos clínicos con clínica nerviosa en el último trimestre, totalizados por comarcas



En el mapa se muestran los nuevos casos clínicos con clínica nerviosa en el último trimestre, totalizados por comarcas

Previous successful cases. Report



Informe situación epidemiológica del trimestre de abril del año 2018

Fecha del documento: miércoles, 23 de mayo de 2018

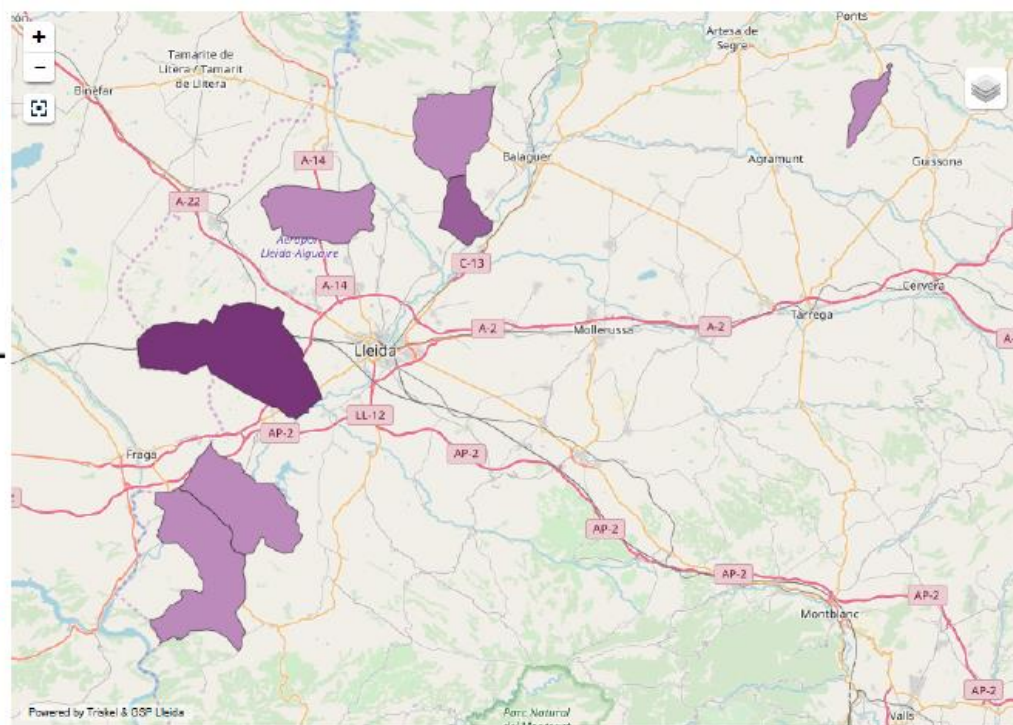
- Casos clínicos con clínica reproductiva



En este grafico aparece la suma de los casos clínicos de los últimos 5 años con clínica reproductiva, totalizado por semanas.



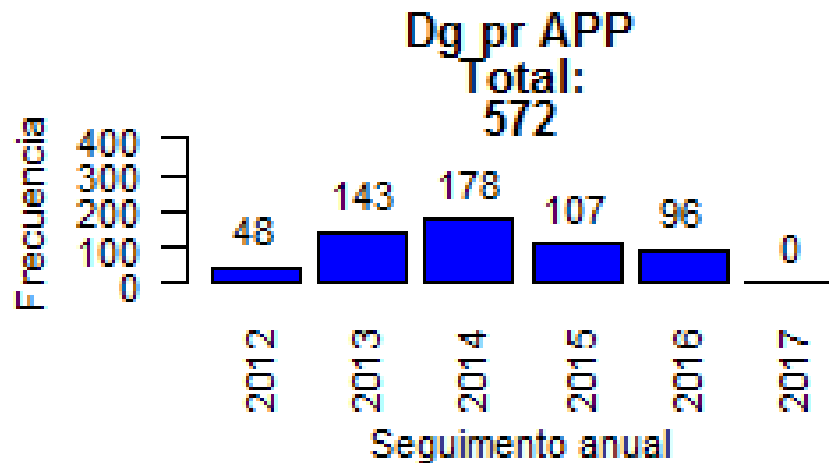
En este grafico aparece la suma de los casos clínicos del último trimestre con clínica reproductiva, totalizado por semanas.



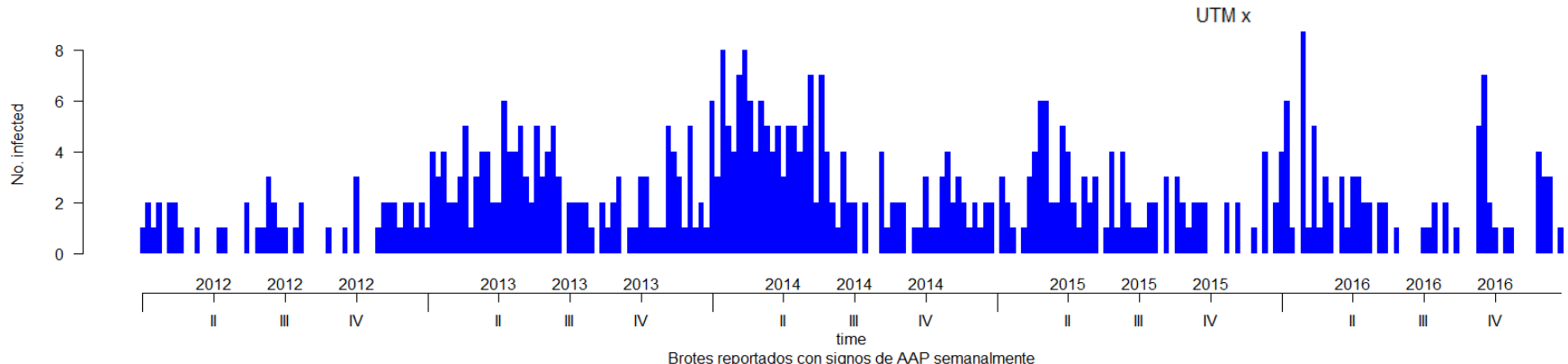
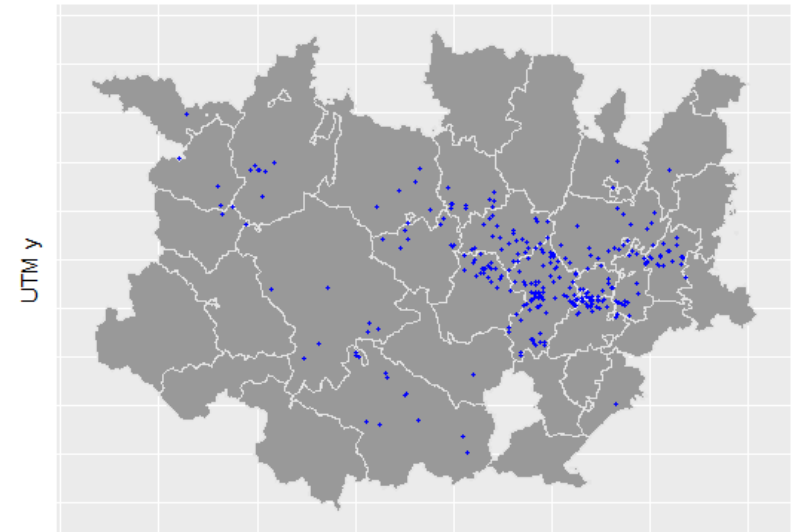
En el mapa se muestran los nuevos casos clínicos con clínica reproductiva en el último trimestre, totalizados por comarcas

Previous successful cases

Syndromic surveillance of pig diseases. Conclusions:



Brotos de APP en granjas porcinas Periodo:2012-2016



PRAM tool

Data. Contributors

Pig's sector



Authorizing
laboratories
to send



Sending their
historic data



Drawbacks:

- Qualitative data (antibiogram)
- Different laboratories with their own non-validated systems

Data. Format

Standardizing

- Concentrations
- Antibiotics
- Results

Our standardization proposal is
for pig samples





Data. Format

PAQUETE MIC RESPIRATORIOS

	1	2	3	4	5	6	7	8	9	10	11	12
A	Enrofloxacina	Marbofloxacina	Tildipirosina	Tulatromicina	Tilmicosina	Tiamulina	Amoxiciclina	Florfenicol	Doxiciclina	Oxitetraciclina	Sulfamethoxazol/trimetoprim	Ceftiofur
B	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2
C	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3
D	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4
E	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5
F	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6
G	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7
H	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	CONTROL	CONTROL	CONTROL

PAQUETE MIC DIGESTIVOS

	1	2	3	4	5	6	7	8	9	10	11	12
A	Enrofloxacina	Marbofloxacina	Neomicina	Apramicina	Gentamicina	Amoxiciclina	Ceftiofur	Cefquinome	Florfenicol	Espectinomomicina	Sulfamethoxazol/trimetoprim	Sulfato de Colistina
B	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2
C	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3
D	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4
E	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5
F	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6
G	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	CONTROL
H	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	CONTROL	CONTROL	CONTROL

PAQUETE MIC SISTÉMICOS

	1	2	3	4	5	6	7	8	9	10	11	12
A	Enrofloxacina	Marbofloxacina	Tilmicosina	Tiamulina	Amoxiciclina	Florfenicol	Doxiciclina	Penicilina G	Ampicilina	Cefquinome	Sulfamethoxazol/trimetoprim	Ceftiofur
B	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2	Dil 2
C	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3	Dil 3
D	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4	Dil 4
E	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5	Dil 5
F	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6	Dil 6
G	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7	Dil 7
H	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	Dil 8	CONTROL	CONTROL	CONTROL

Data. Format

Standardizing

- Concentrations
- Antibiotics
- Results

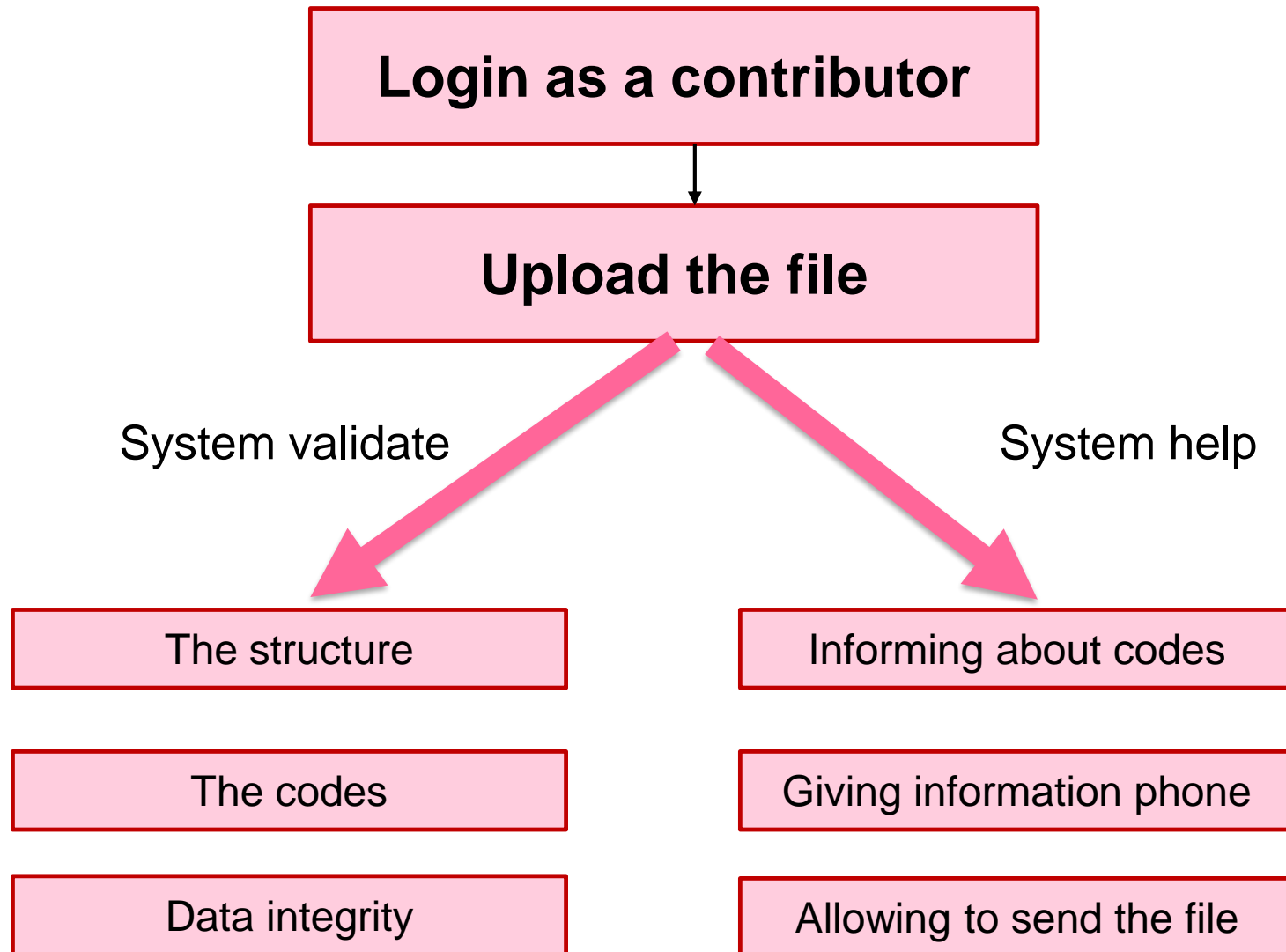
Our standardization proposal is for pig samples

Codifying

- Antibiotics
- Pathogens
- Results



Data. Sending



PRAM tool. Who will use

Summarizing data and general data.

- All people involved on pig's sector, for consulting.

Data involving antibiotics and MIC distribution

- Laboratories contributors (their own data).
- Pig's sector who contribute.
- Specialists designed by AEMPS.

PRAM tool. Sign up

Summarizing data and general data.

- Users of AEMPS website

Data involving antibiotics and MIC distribution

- Specific sign up will be required:
 - By email or phone
 - Accepting requirements
 - Non-contributors will be dismissed

PRAM tool desing

PRAM tool. Options



PRAM tool. Sort of filters

☒ Período temporal

September 2018						
Mo	Tu	We	Th	Fr	Sa	Su
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Inicio:
01/05/2018

Fin:
30/09/2018



☒ Microorganismos

Brachyspira pilosicoli

☒ Antibiótico

☐ Todos

☐ Categoría 1

☒ Concreto

☐ Categoría 2

-- Todos/Todas --

☒ Region

Comunidad: *Catalunya*

Provincia: *Lleida*

Municipio: -- Todos/Todas --

☒ Empresa

-- Todos/Todas --

☒ Especie

-- Todos/Todas --



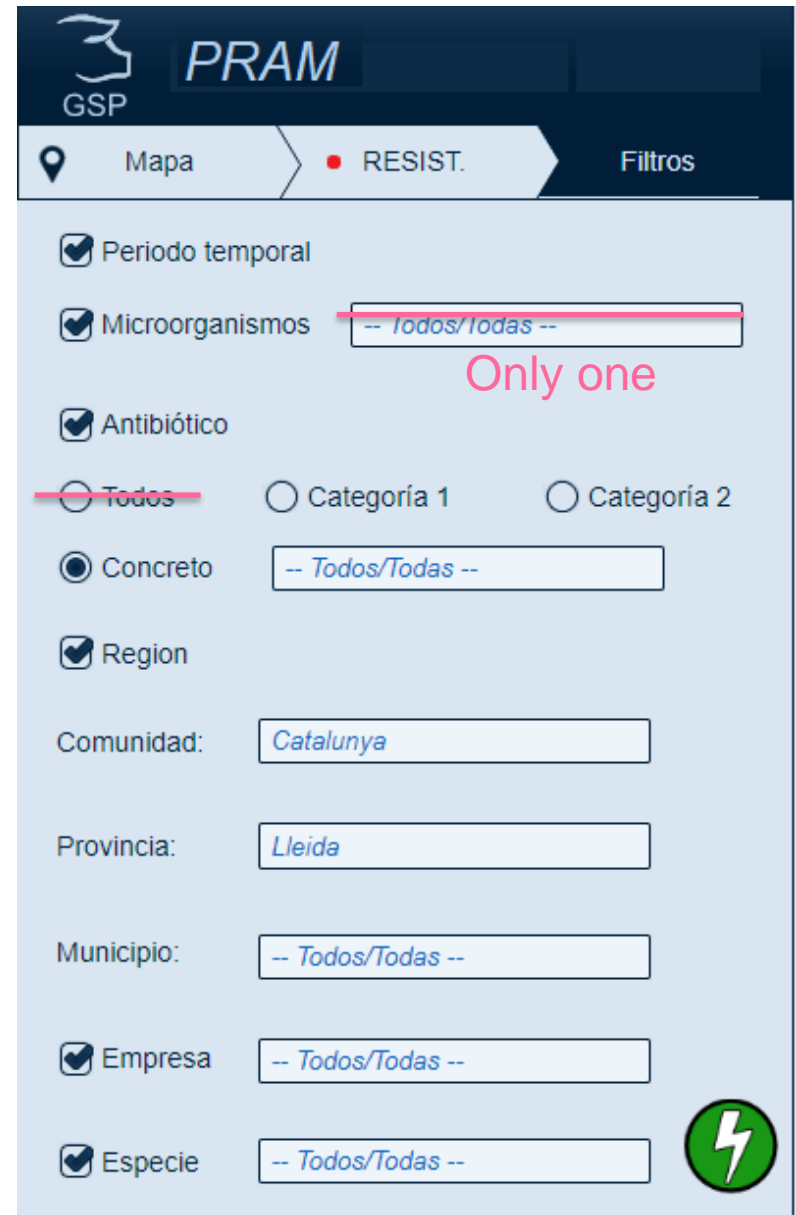
PRAM tool. Map of pathogens



PRAM tool. Map of resistences



The PRAM tool interface shows the 'Consulta' tab. The left sidebar contains three filter categories: MICROORGANISMOS (orange dot), RESISTENCIA (red dot), and MIC-90 (purple dot). The 'RESISTENCIA' category is currently selected, indicated by a red line underneath it.



The PRAM tool interface shows the 'Filtros' tab. The top navigation bar includes 'Mapa', 'RESIST.' (selected), and 'Filtros'. The filter options are as follows:


- ☒ Periodo temporal
- ☒ Microorganismos
- ☒ Antibiótico
- ☐ Todos ☐ Categoría 1 ☐ Categoría 2
- ☒ Concreto
- ☒ Region
- Comunidad:
- Provincia:
- Municipio:
- ☒ Empresa
- ☒ Especie

A green lightning bolt icon is located in the bottom right corner.

PRAM tool. Map of MIC-90 distribution




The image shows the PRAM tool interface with the 'Consulta' tab selected. The header includes the GSP logo and the text 'PRAM'. Below the header, there are three tabs: 'Mapa', 'Consulta', and 'Filtros'. The 'Consulta' tab is active, showing a list of filters: MICROORGANISMOS (orange dot), RESISTENCIA (red dot), and MIC-90 (purple dot). The MIC-90 filter is currently selected, indicated by a purple dot and a horizontal line.



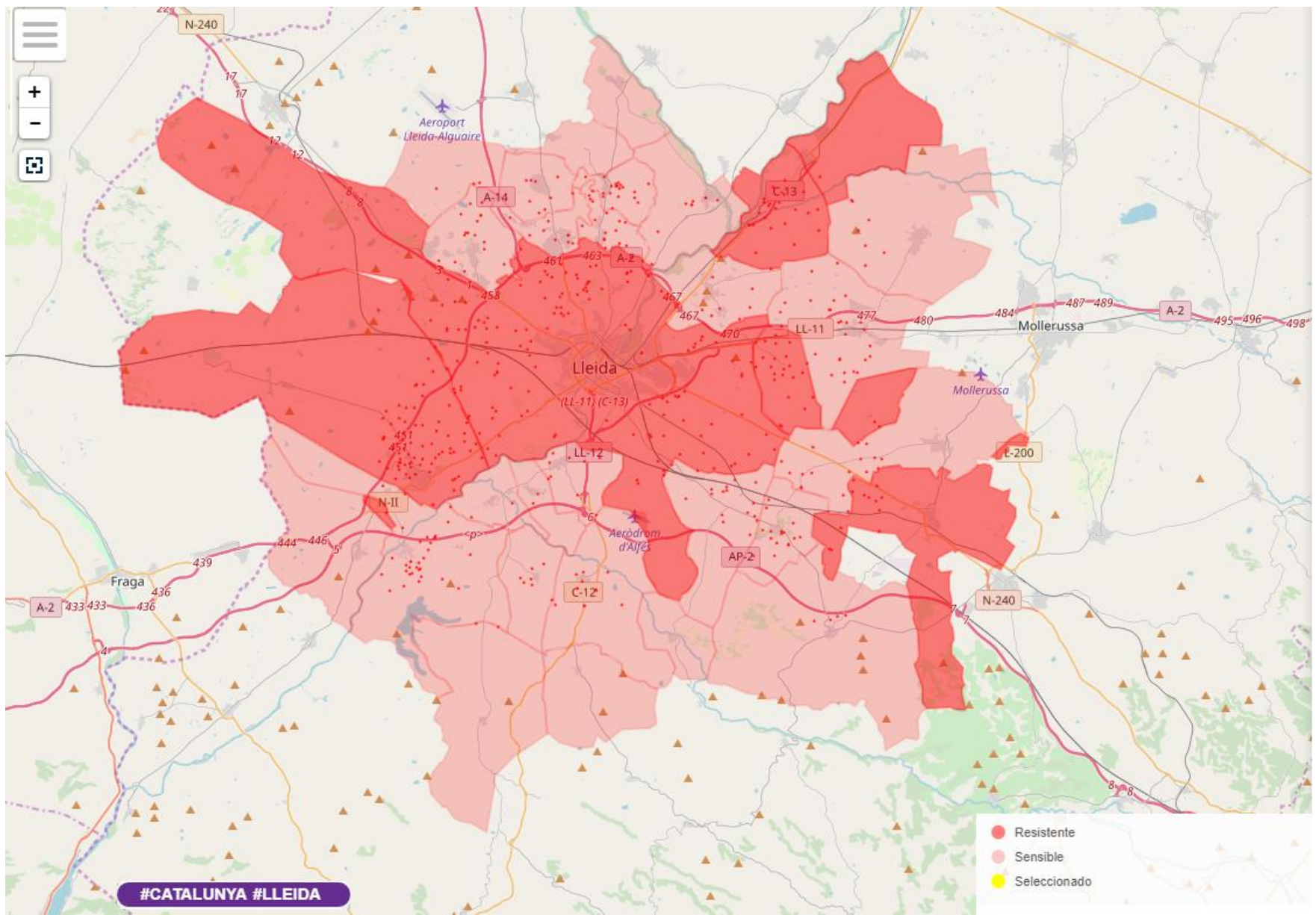
The image shows the PRAM tool interface with the 'Filtros' tab selected. The header includes the GSP logo and the text 'PRAM'. Below the header, there are three tabs: 'Mapa', 'MIC-90', and 'Filtros'. The 'Filtros' tab is active, showing a list of filter options. The 'MIC-90' tab is also active, indicated by a purple dot. The filter options are:

- ☒ Periodo temporal
- ☒ Microorganismos
- ☒ Antibiótico
- ☐ Todos ☐ Categoría 1 ☐ Categoría 2
- ☒ Concreto
- ☒ Region
- Comunidad:
- Provincia:
- Municipio:
- ☒ Empresa
- ☒ Especie

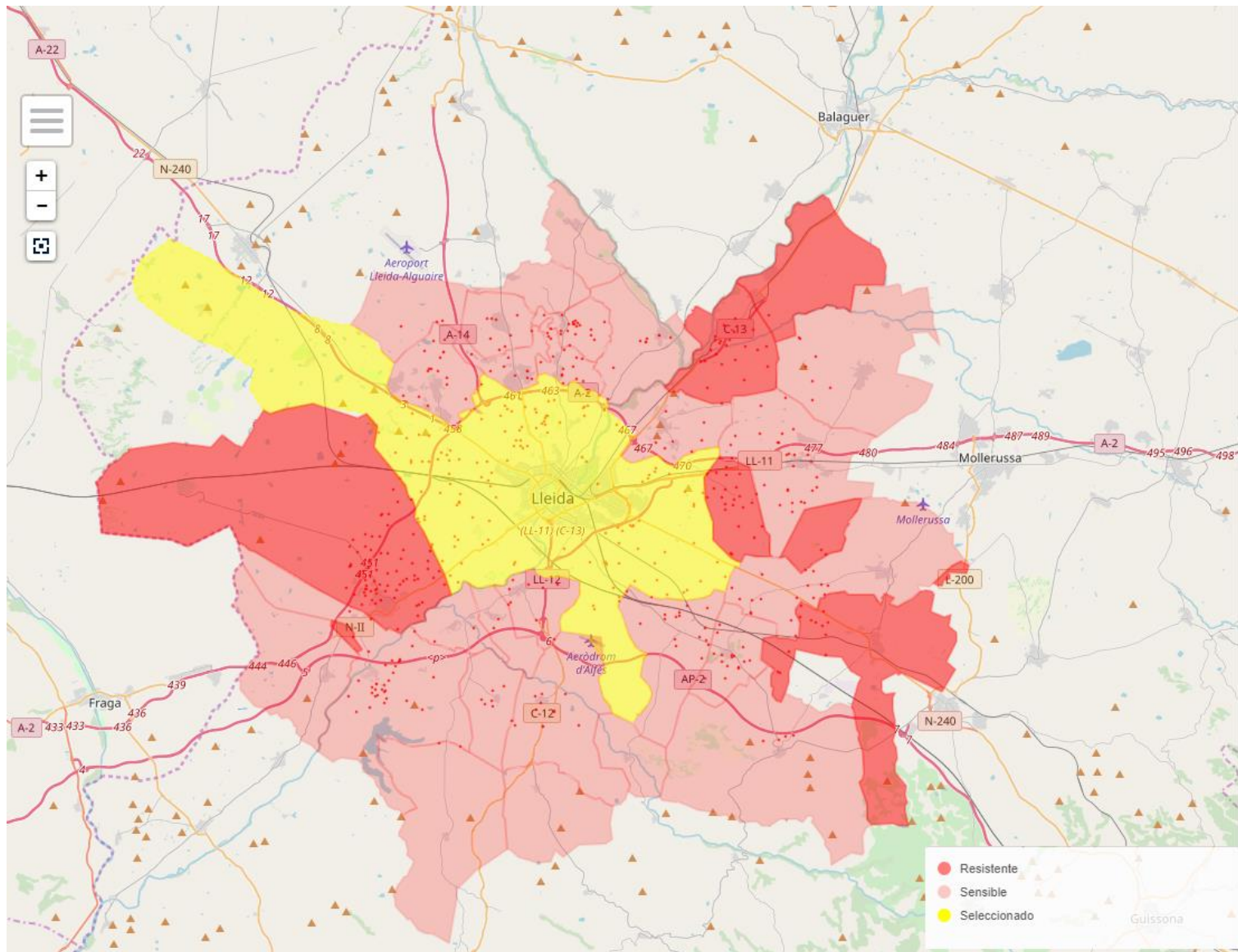
Only one



PRAM tool. Map resistences



PRAM tool. Map resistences



PRAM tool. Chart of pathogen's resistance



PRAM tool. Chart of pathogens



The image shows the main menu of the PRAM tool. At the top, there is a logo with the letters 'GSP' and the word 'PRAM' in a large, stylized font. Below the logo, there are three tabs: 'Gráfico', 'Consulta', and 'Filtros'. The 'Consulta' tab is currently selected. Under the 'Consulta' tab, there are three main categories listed with colored dots: 'MICROORGANISMOS' (orange dot), 'RESISTENCIA' (red dot), and 'MIC-90' (purple dot). The 'RESISTENCIA' category is highlighted with a red line.



The image shows the filter options for the 'RESISTENCIA' category. At the top, there is a logo with the letters 'GSP' and the word 'PRAM' in a large, stylized font. Below the logo, there are three tabs: 'Matriz', 'RESIST.', and 'Filtros'. The 'RESIST.' tab is currently selected. Under the 'Filtros' tab, there are several filter options with checkboxes and dropdown menus:

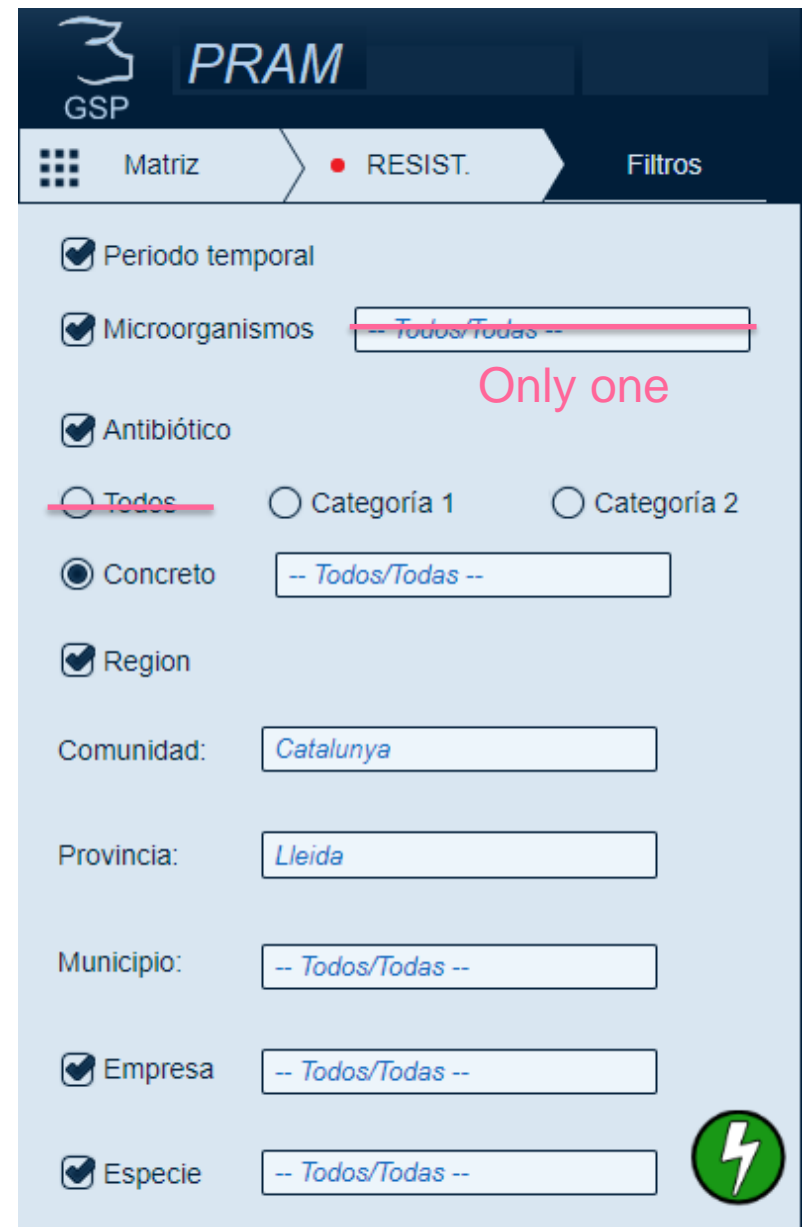
- ☒ Periodo temporal
- ☒ Microorganismos
- ☒ Antibiótico
- ☐ Todos ☐ Categoría 1 ☐ Categoría 2
- ☒ Concreto
- ☒ Region
- Comunidad:
- Provincia:
- Municipio:
- ☒ Empresa
- ☒ Especie

A green lightning bolt icon is located in the bottom right corner.

PRAM tool. Chart resistences



The image shows the PRAM tool interface with the 'Consulta' tab selected. The sidebar menu on the left contains three items: 'MICROORGANISMOS' (orange dot), 'RESISTENCIA' (red dot, which is highlighted with a horizontal line), and 'MIC-90' (purple dot). The top navigation bar includes 'GSP', 'PRAM', and tabs for 'Gráfico', 'Consulta', and 'Filtros'.



The image shows the PRAM tool interface with the 'Filtros' tab selected. The top navigation bar includes 'GSP', 'PRAM', and tabs for 'Matriz', 'RESIST.' (highlighted with a red dot), and 'Filtros'. The filter section contains the following options:

- ☒ Periodo temporal
- ☒ Microorganismos
- ☒ Antibiótico
- ☐ Todos ☐ Categoría 1 ☐ Categoría 2
- ☒ Concreto
- ☒ Region
- Comunidad:
- Provincia:
- Municipio:
- ☒ Empresa
- ☒ Especie

A red line is drawn across the 'Microorganismos' filter, and the text 'Only one' is written in pink next to it. A green lightning bolt icon is located in the bottom right corner.

PRAM tool. Charof MIC-90 distribution



PRAM



Mapa


Consulta

Filtros

MICROORGANISMOS

RESISTENCIA

MIC-90



PRAM

GRUP D'INSTRUMENTS PER AVALUAR RISC

Matriz

RESIST.

Filtros

☒ Período temporal

☒ Microorganismos

-- Todos/Todas --

☒ Antibiótico

☒ Todos

-- Todos/Todas --

☐ Categoría 1

☐ Categoría 2

☒ Concreto

-- Todos/Todas --

☒ Region

Comunidad:

Catalunya

Provincia:

Lleida

Municipio:


-- Todos/Todas --

☒ Empresa

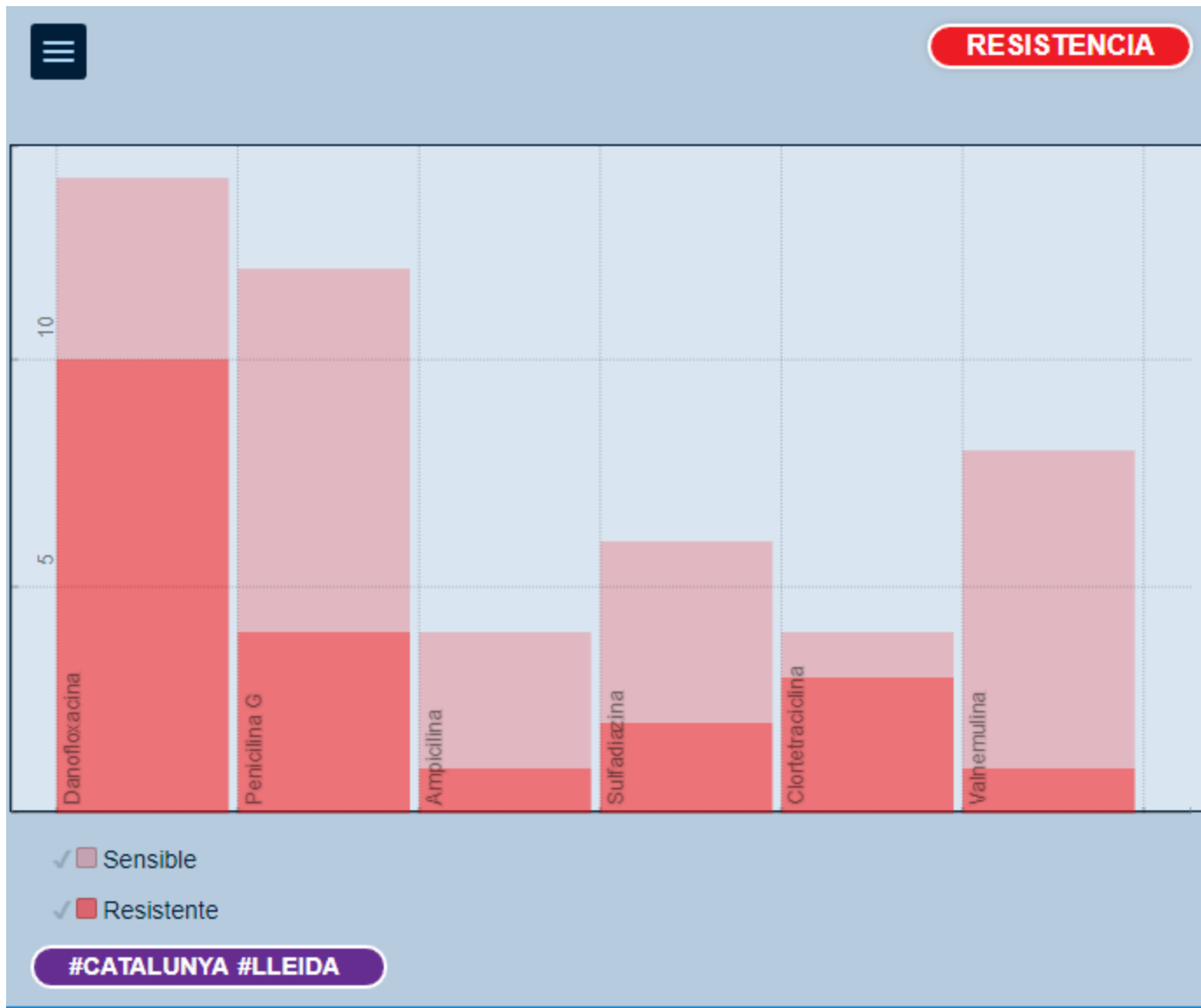
-- Todos/Todas --

☒ Especie

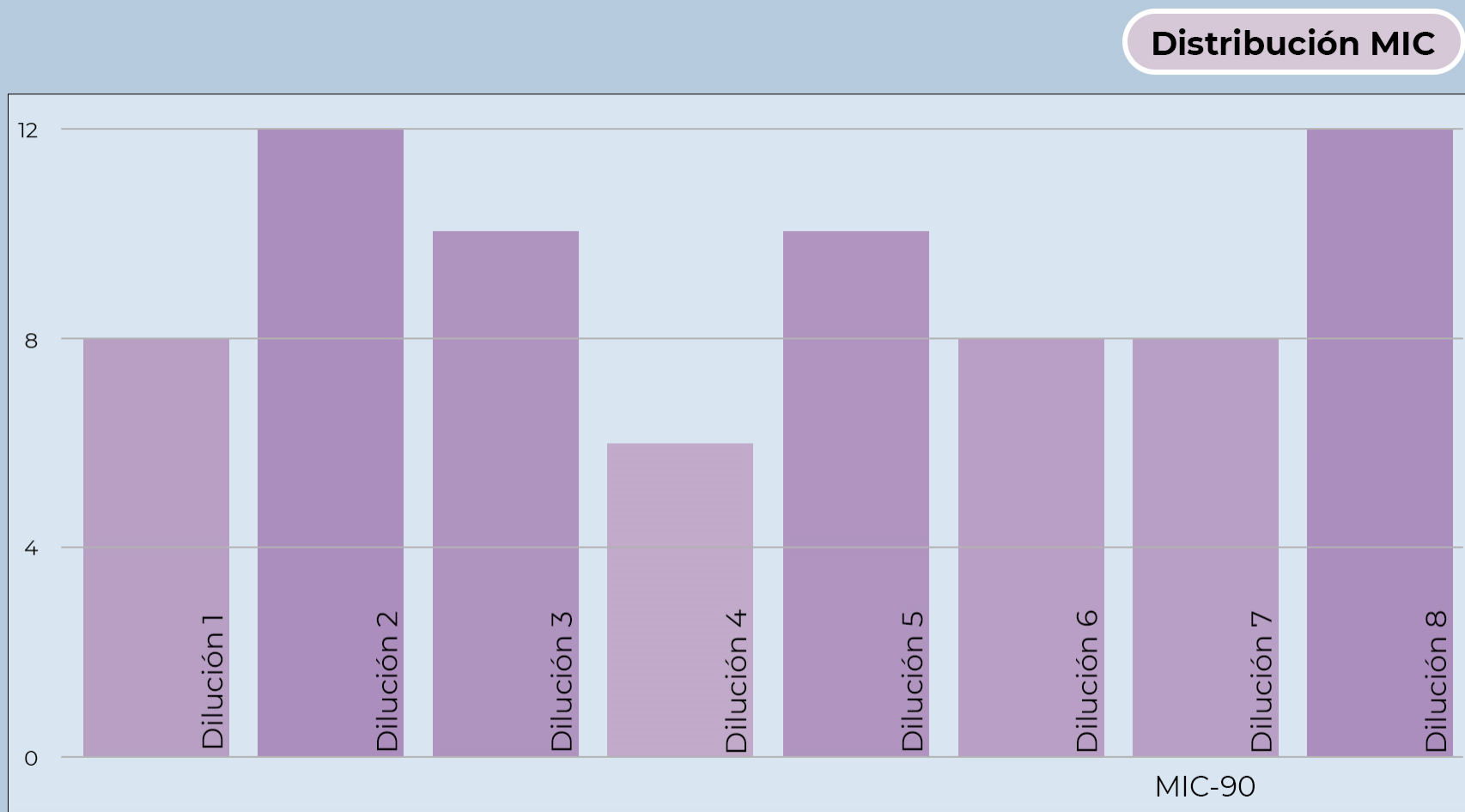
-- Todos/Todas --



PRAM tool. Chart of pathogen's resistance

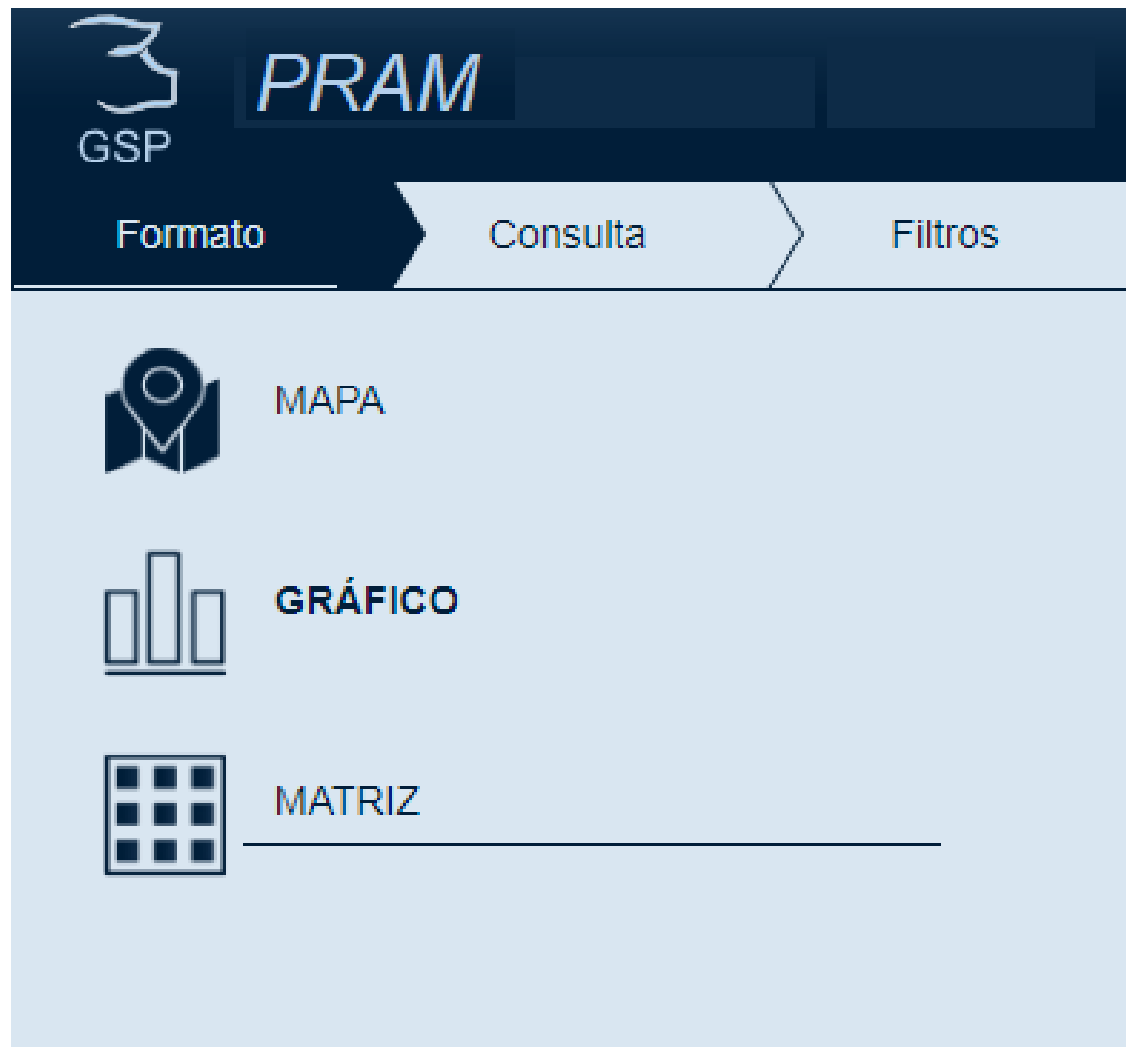


PRAM tool. Chart of MIC distribution



#Catalunya #Lleida

PRAM tool. Chart of pathogen's resistance



PRAM tool. Datasheet resistences




PRAM

GSP

Matriz Consulta Filtros

RESISTENCIA

MIC-90



PRAM

GSP

Matriz **RESIST.** Filtros

☒ Periodo temporal

☒ Microorganismos

☒ Antibiótico

☐ Todos ☐ Categoría 1 ☐ Categoría 2

☒ Concreto

☒ Region


Comunidad:

Provincia:

Municipio:

☒ Empresa

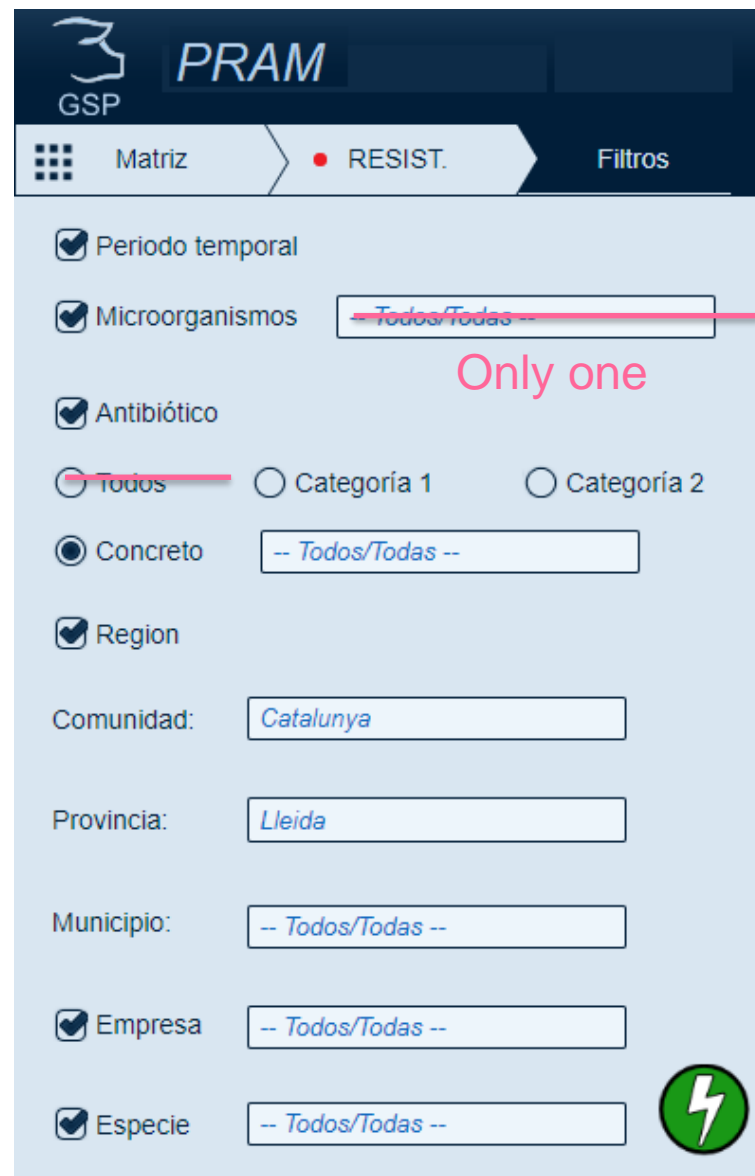
☒ Especie



PRAM tool. Datasheet MIC-90



The image shows the PRAM tool interface. At the top, there is a logo with the number '3' and the text 'GSP' next to 'PRAM'. Below this, there are three tabs: 'Matriz', 'Consulta', and 'Filtros'. The 'Matriz' tab is selected. In the 'Filtros' section, there are two options: 'RESISTENCIA' (marked with a red dot) and 'MIC-90' (marked with a purple dot). The 'MIC-90' option is currently selected.



The image shows the PRAM tool interface with the 'Filtros' section expanded. The 'Matriz' tab is selected. The 'Filtros' section contains the following filters:

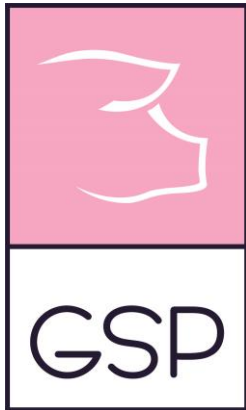
- ☒ Periodo temporal
- ☒ Microorganismos
- ☒ Antibiótico
- ☐ Todos ☐ Categoría 1 ☐ Categoría 2
- ☒ Concreto
- ☒ Region
- Comunidad:
- Provincia:
- Municipio:
- ☒ Empresa
- ☒ Especie

A red line is drawn across the 'Microorganismos' filter, and the text 'Only one' is written in red next to it. A green lightning bolt icon is located at the bottom right of the interface.

PRAM tool. Datasheet resistences

	Amoxiciclina- acido clavulánico	Amoxicilina	Apramicina	Cefquinome	Ceftiofur	Colistina	Colistina	Danofloxacina	Enrofloxacin	Espectinomina	Gentamicina	Marbofloxacina	Neomicina	Azitromicina	Clortetraciclina	Doxiciclina	Fenoximetilpenicilina	Florfenicol	Gamitromicina	Lincomicina	Minociclina	Oxitetraciclina	Penicilina
Actinobacillus pleuropneumoniae	60	70	55	28	73	67	41	23	78	81	61	52	69	25	43	12	29	55	25	33	41	31	8
Actinobacillus suis	66	77	61	31	80	74	45	25	86	89	67	57	76	28	47	13	32	61	28	36	45	34	9
Bordetella bronchiseptica	48	56	44	22	58	54	33	18	62	65	49	42	55	20	34	10	23	44	20	26	33	25	6
Brachyspira hyodysenteriae	49	39	20	51	47	29	16	55	57	43	36	48	18	30	8	20	39	18	23	29	22	6	3
Brachyspira pilosicoli	72	36	95	87	53	30	58	69	79	68	90	33	56	16	38	72	33	43	53	40	10	62	2
Clostridium difficile	91	72	36	95	87	53	30	84	45	79	68	90	33	56	16	38	72	33	43	53	40	10	6
Clostridium perfringens	82	64	33	85	78	48	27	76	41	71	61	81	29	50	14	34	64	29	39	48	36	9	5
E.coli beta-hemolitica	42	49	39	20	51	47	29	16	55	57	43	36	48	18	30	8	20	39	18	23	29	22	6
Erysipelothrix rhusiopathiae	84	66	34	88	80	49	28	94	97	73	62	83	30	52	14	35	66	30	40	49	37	10	5
Escherichia coli	44	51	40	21	54	49	30	17	57	60	45	38	51	18	32	9	21	40	18	24	30	23	6
Haemophilus parasuis	66	34	88	80	49	28	94	97	73	62	83	30	52	14	35	66	30	40	49	37	10	58	1
Mannheimia haemolytica	36	95	87	53	30	80	75	79	68	90	33	56	16	38	72	33	43	53	40	10	62	20	2
Pasteurella multocida	42	49	39	20	51	47	29	16	55	57	43	36	48	18	30	8	20	39	18	23	29	22	6
Salmonella spp	30	35	28	14	37	34	21	12	39	41	31	26	35	13	22	6	15	28	13	17	21	16	4
Staphylococcus aureus	69	81	63	32	84	77	47	26	90	93	70	60	79	29	49	14	33	63	29	38	47	36	9
Staphylococcus chromogenes	62	72	57	29	76	69	42	24	81	84	63	54	71	26	45	12	30	57	26	34	42	32	8
Staphylococcus hyicus	56	65	51	26	68	62	38	21	73	75	57	48	64	23	40	11	27	51	23	31	38	29	7
Staphylococcus spp.	45	53	41	21	55	50	31	17	59	61	46	39	52	19	32	9	22	41	19	25	31	23	6
Streptococcus spp.	90	84	83	42	32	52	62	35	47	122	92	78	51	38	65	18	44	83	38	50	62	47	1
Streptococcus suis	68	35	90	83	51	28	55	66	75	64	85	31	53	15	36	68	31	41	51	38	10	59	1

Thank you



Plan Nacional
**Resistencia
Antibióticos**