



Servei Meteorològic  
de Catalunya

# THE PHENOLOGICAL NETWORK OF CATALONIA

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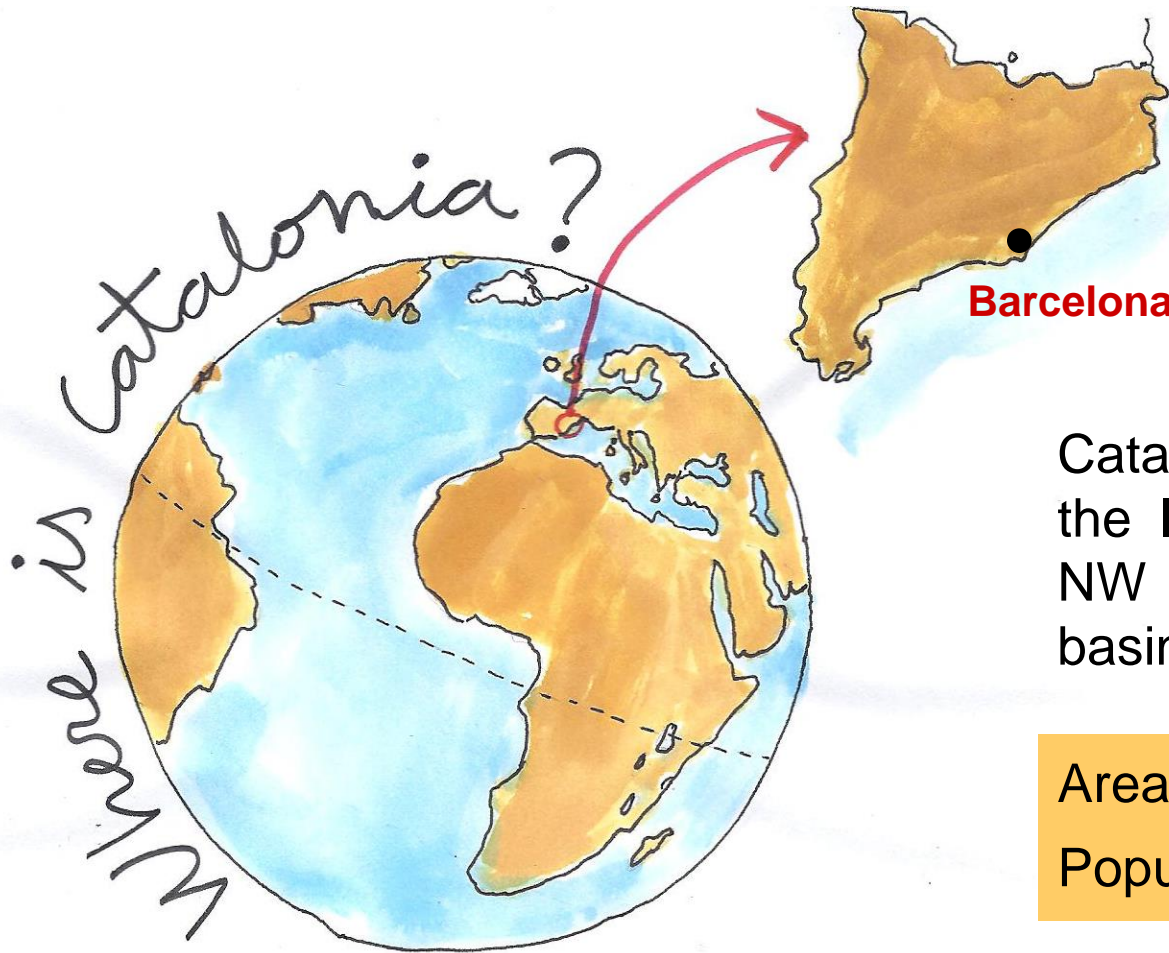
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*Meteorological Service of Catalonia*



Generalitat de Catalunya  
**Departament de Territori  
i Sostenibilitat**

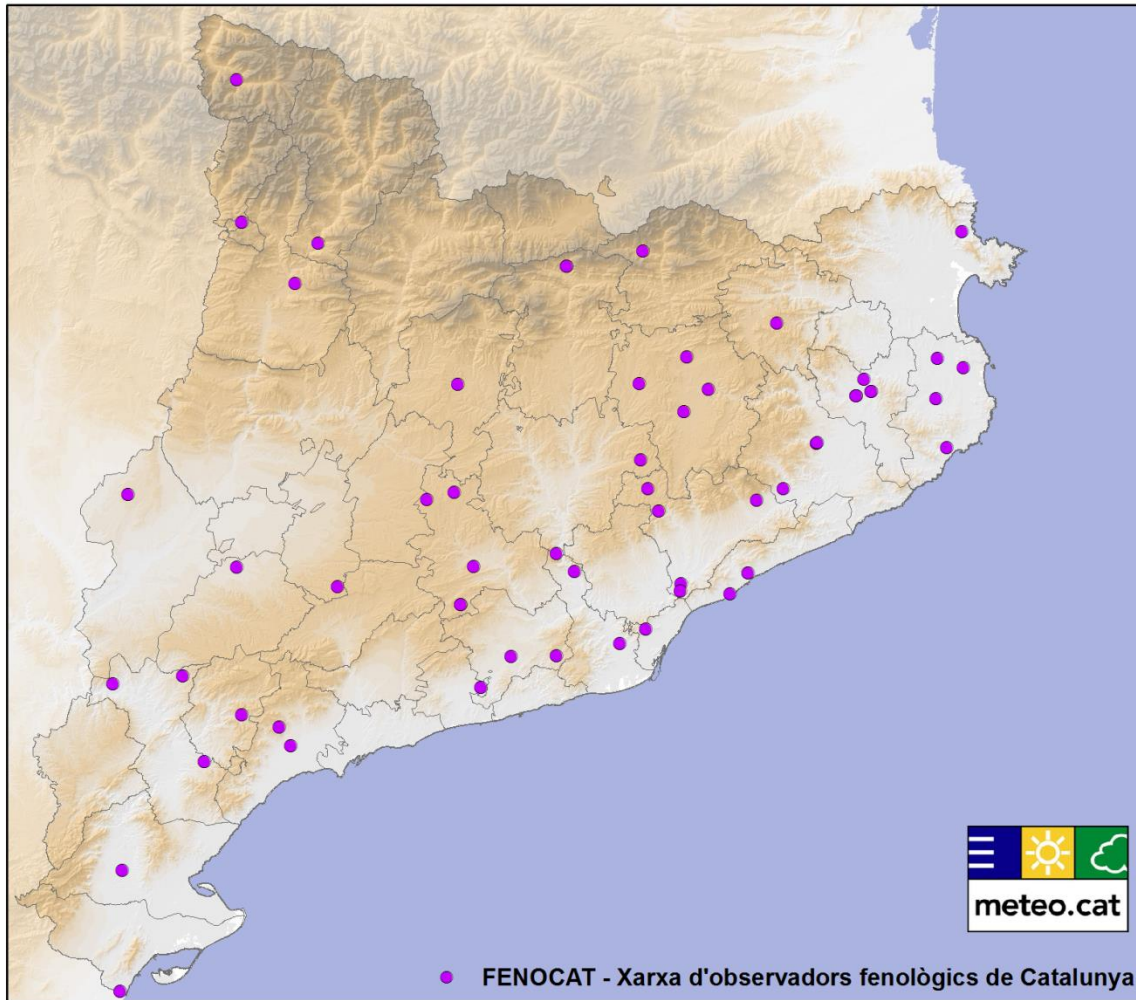
- 1. Phenological network of Catalonia**
- 2. Operational scheme**
- 3. Quality Control**
- 4. First results (to PEP725 project)**



Catalonia is located NE of the Iberian peninsula and NW of the Mediterranean basin.

Area = 32.000 km<sup>2</sup>

Population = 7.5 million

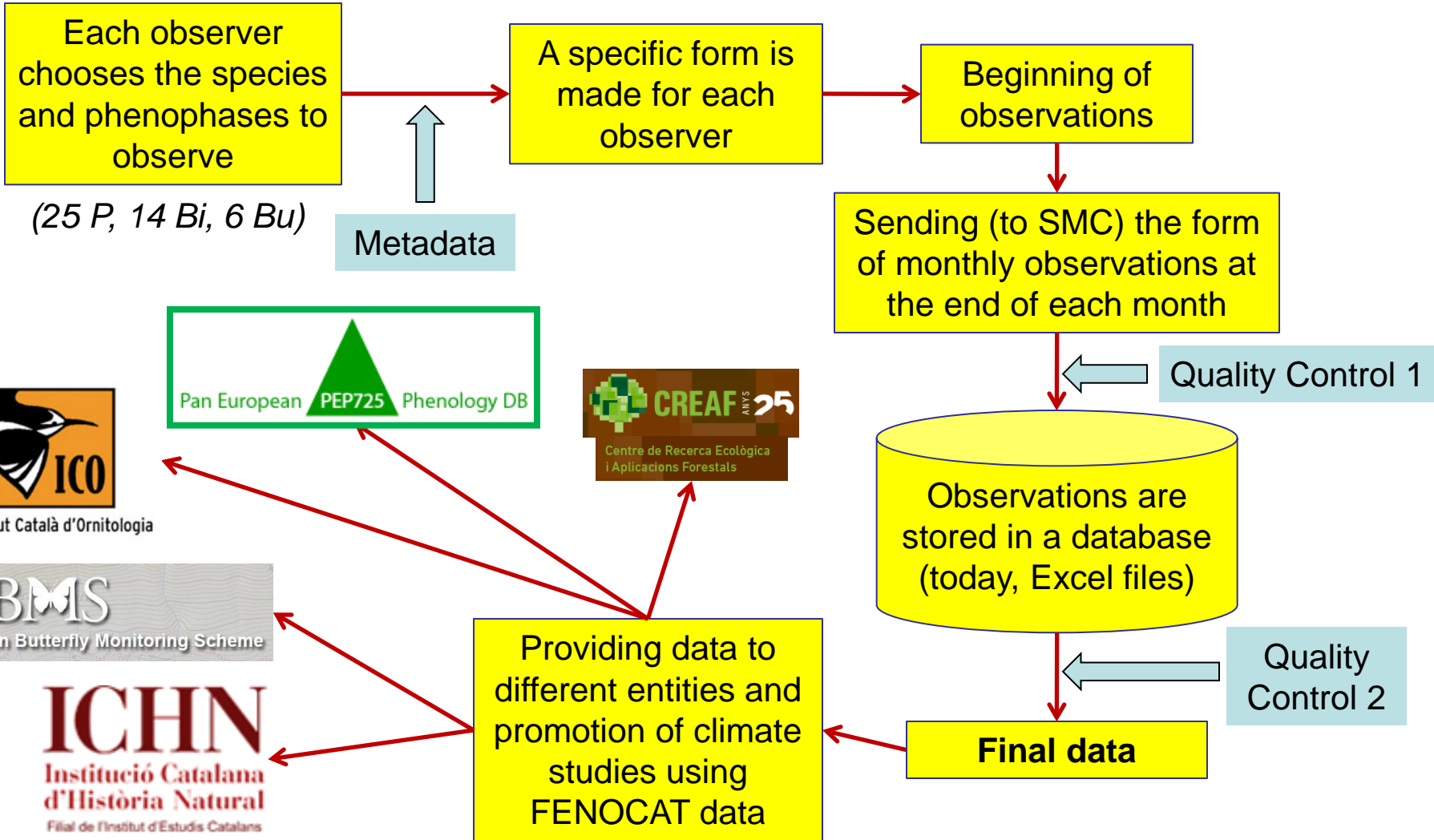


Initially (April 2013), 79 people expressed their interest in collaborating on the FENOCAT.

Actually there are around 50 observers which send us every month phenology observations.

- 25 plants (and different phenophases of each one)
- 14 birds
- 6 butterflies

# Operational scheme



# Operational scheme

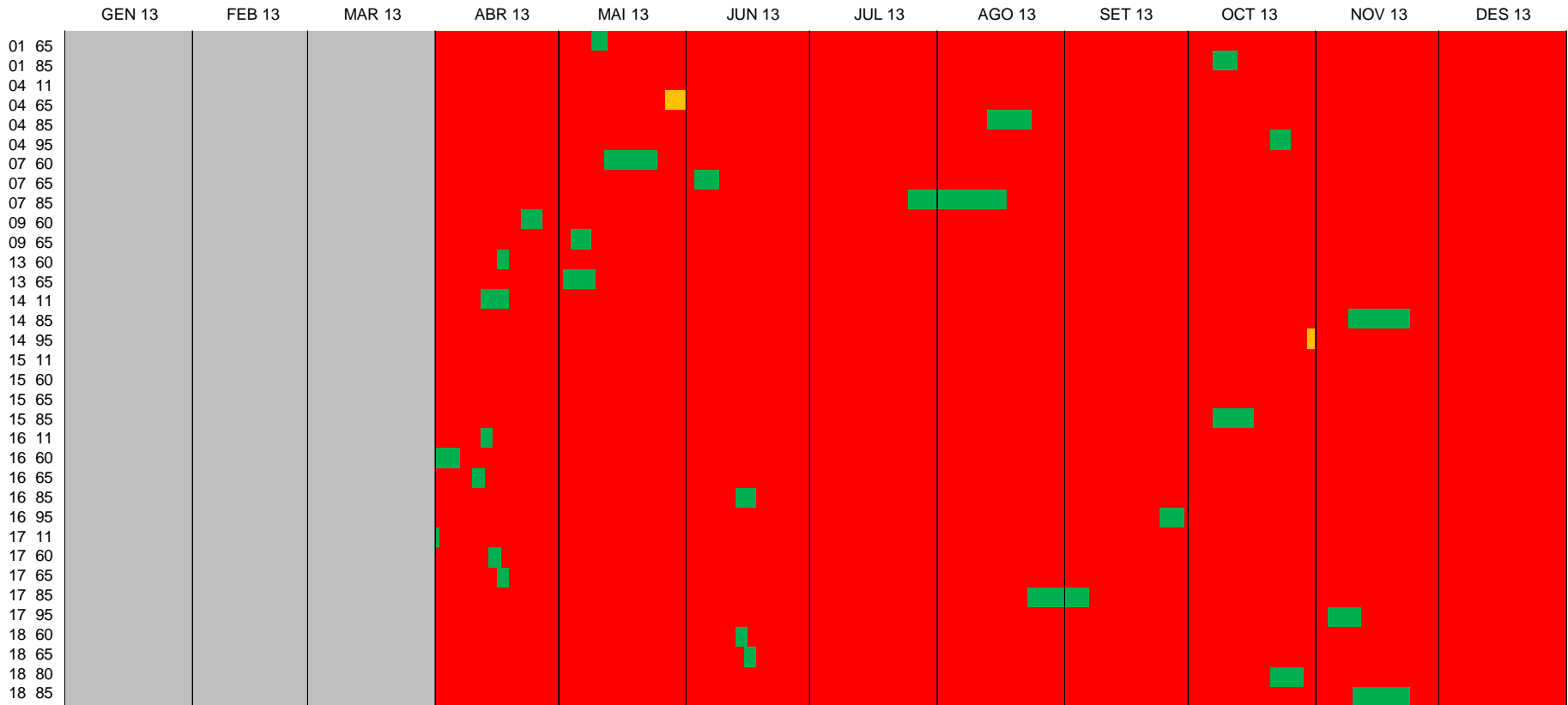
## Monthly observation form (real example)

Codi de l'observador:	VO037	Codi del punt d'observació:	FEPJ001
Observador:	Cristina Rossi / Pere Casulleras	Municipi:	Sant Martí de Canals - Conca de Dalt
		Mes / Any (mm / aaaa):	05 / 2013

Espècie	Estadi fenològic																																
	Codi BBCH	Fase	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	31
1 Alzina (Quercus ilex)	65	Aprox. el 50% de flors mostren els estams		N		N			N		?		S		N		N		N		N		N		N		N		N		N		N
	85	Glans mig madures (de color brunenc més o menys pujat), i alguna ja ha caigut		N		N			N		N		N		N		N		N		N		N		N		N		N		N		N
4 Sàuquer (Sambucus nigra)	11	Brot de les primeres fulles (algunes ja estan ben obertes)		N		N			N		N		N		N		N		N		N		N		N		N		N		N		N
	65	Aprox. el 50% de les flors ja s'han obert, i han començat a caure alguns pètals		N		N			N		N		N		N		N		N		N		N		N		N		?		N		?
	85	Aprox. el 50% dels fruits són negres o negregen		N		N			N		N		N		N		N		N		N		N		N		N		N		N		N
7 Ginesta (Spartium junceum)	60	S'han obert les primeres flors		N		N			N		N		N		S		S		S		S		S		S		N		N		N		N
	65	Aprox. el 50% de les flors ja estan obertes, i d'alguna ja han caigut els pètals		N		N			N		N		N		N		N		N		N		N		N		N		N		N		N
	85	Llegums a mig madurar, de color entre verd i bru, i algun ja està obert		N		N			N		N		N		N		N		N		N		N		N		N		N		N		N

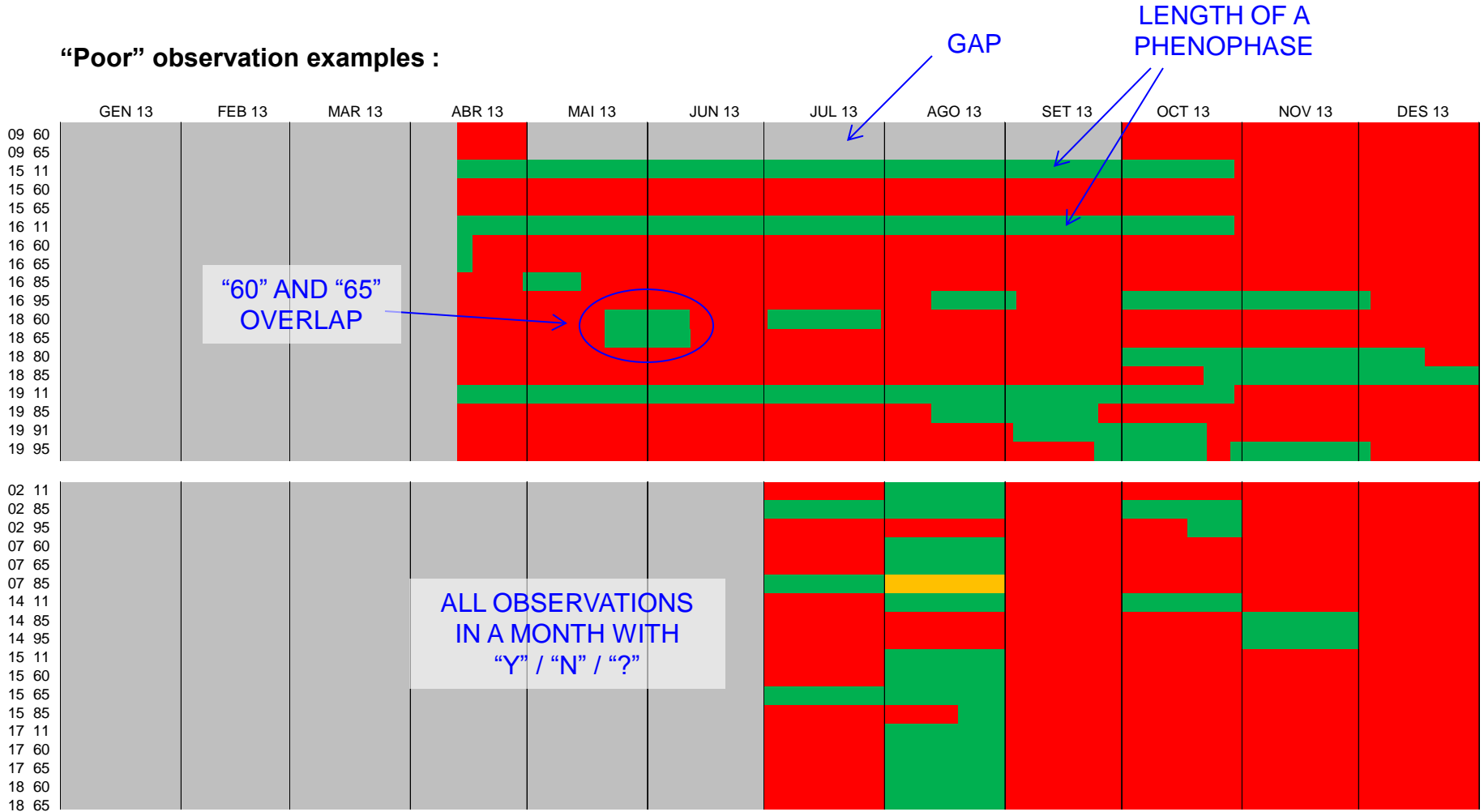
QC1: “Calendar” with all observations of the same observer (completeness check and inner consistency check)

Observer: FEPJ001 – Sant Martí de Canals



## QC1: completeness check and inner consistency check

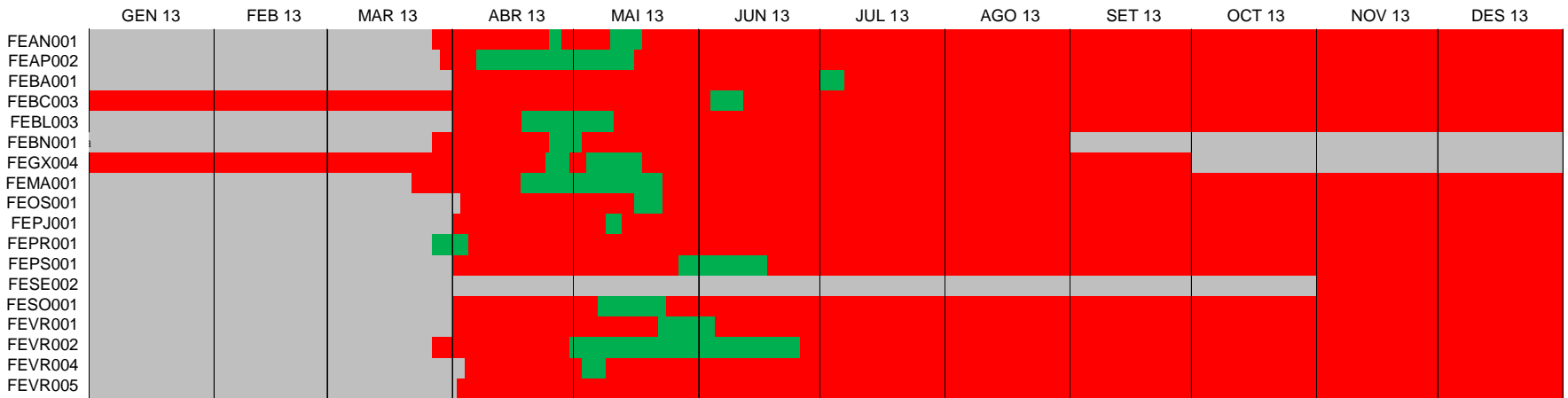
“Poor” observation examples :



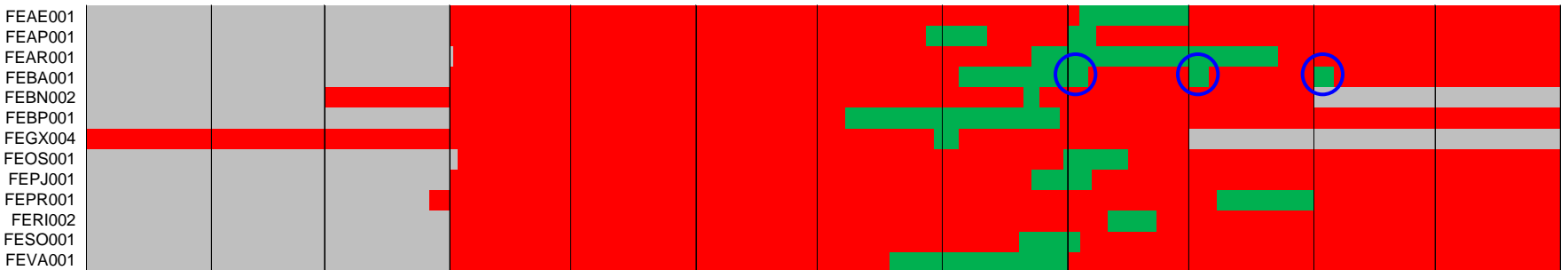


QC2: “Calendar” with all observations of the same phenophase (plausibility check and time - spatial consistency checks)

**Phenophase: Holm oak (*Quercus ilex*) - Full flowering (plant\_id: 111, cult\_id: 577, BBCH code: 65)**



**Phenophase: Apple tree (*Malus communis*) - Soft-dough (plant\_id: 220, cult\_id: 0, BBCH code: 85)**

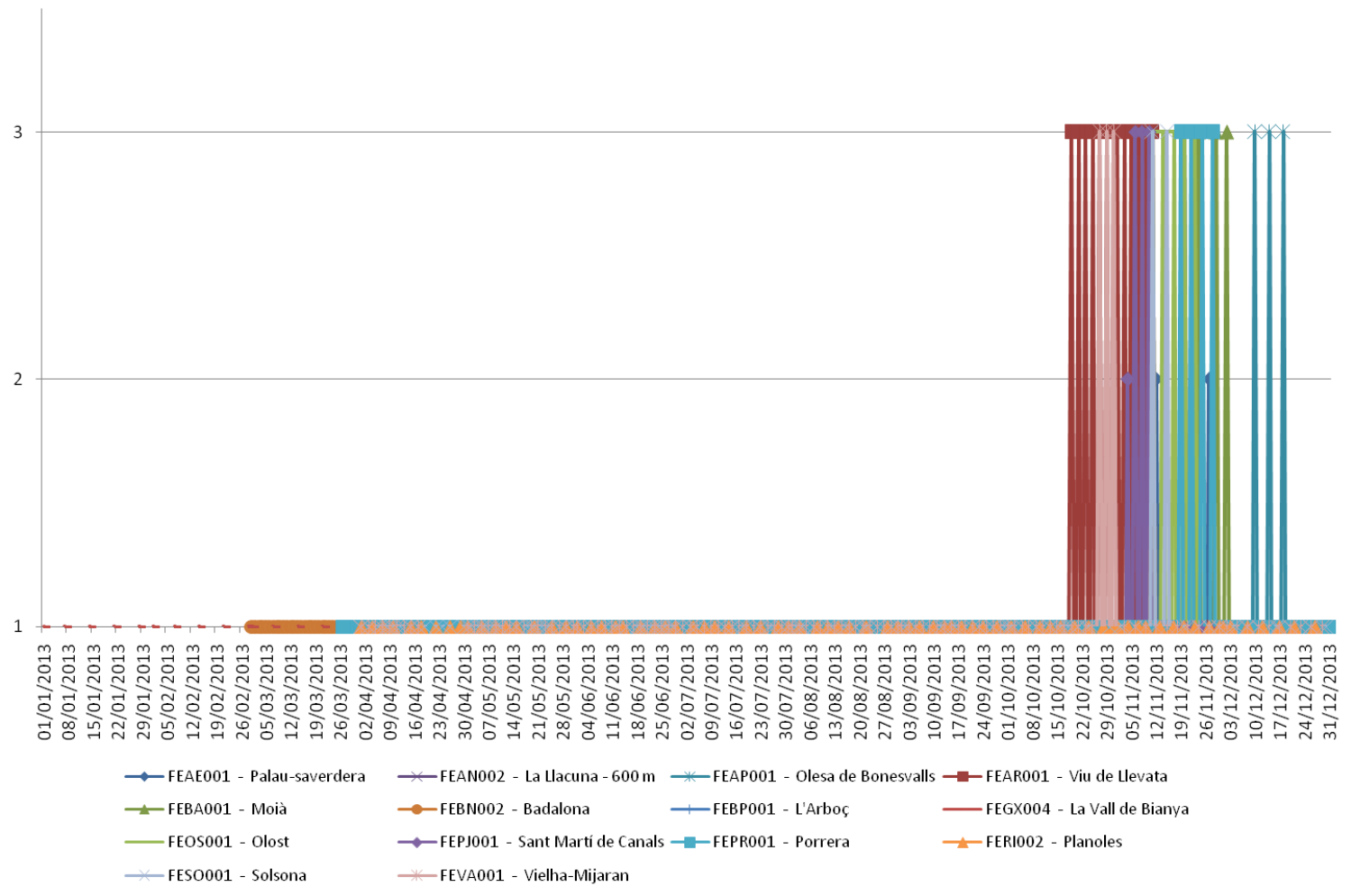




- ➔ Verification (first analysis) of FENOCAT data from 2013.
- ➔ Contact with PEP725 management team to submit FENOCAT data in the desired file format.
- ➔ Implementation of FENOCAT station list in pep\_station table, enlargement of “PEP” tables with new plants observed in FENOCAT, and explanation of little discrepancies in BBCH codes.  
*(Thank you: Anita Jurkovic, Markus Ungersböck and Elisabeth Koch)*
- ➔ Submitting (in a few days) FENOCAT data to PEP Database.
- ➔ More information about the cultivar (early, middle or late) of some species, photographs of phenophases to observe, meetings with observers to solve doubts and to show main problems with observations (beginning and end of a phenophase).

# First results

Pomera - Aprox. el 50% de les fulles grogues o ataronjades, i una part ja caigudes (BBCH = 95)



s_id	plant_id	cult_id	Bbch	Year	day
20386	782	0	85	2013	241
20386	222	0	65	2013	99
20386	222	0	85	2013	131
20386	222	0	95	2013	316
20386	220	0	60	2013	101
20386	220	0	65	2013	107
20386	220	0	85	2013	247
20386	220	0	95	2013	316
20386	781	0	60	2013	135
20386	781	0	65	2013	144
20386	781	0	81	2013	285
20386	781	0	85	2013	303
20386	224	0	11	2013	99
20386	224	0	85	2013	241
20386	224	0	92	2013	266
20386	224	0	95	2013	331
20386	221	0	60	2013	99
20386	221	0	65	2013	110
20386	221	0	85	2013	316
20387	111	577	65	2013	114
20387	111	577	85	2013	273
20387	197	0	65	2013	135
20387	197	0	85	2013	195
20387	786	0	60	2013	104
20387	786	0	65	2013	112

flag

Is it possible to include several flags?

Is there any standardized checking sequence?

- completeness
- inner consistency
- plausibility
- time consistency
- spatial consistency
- climatological



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***Thank you for your attention !!***  
***Moltes gràcies per la vostra atenció !!***

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