

# Data and Charts



GBalds in bloom, posed. February 2020. The flower at lower left is a bit pink because it's the sixth day the flower was open. Three GBalds have one small open flower each because it's the first day these flowers were open.

*The following piece is part of a collection of writings published on the [Practical Small Cacti Malaysia site](https://practicalsmallcacti.com/).*

## Introduction

Data and charts of cactus flowers in my collection are mostly based on checking my digital picture archive for new flowers.

Picture coverage from 2016 or earlier is too sparse to be useful. From 2017 to 2018, data coverage gets progressively better, and should be fairly complete by late 2018. For 2019, data is more or less complete. From 2020, I use a spreadsheet to track flowers in more detail – this data can be useful for studying stuff like the longevity of cactus flowers.

## Nicknames for Scientific Names

PMag = *Parodia magnifica*

GBald = *Gymnocalycium baldianum*

PClav = *Parodia claviceps*

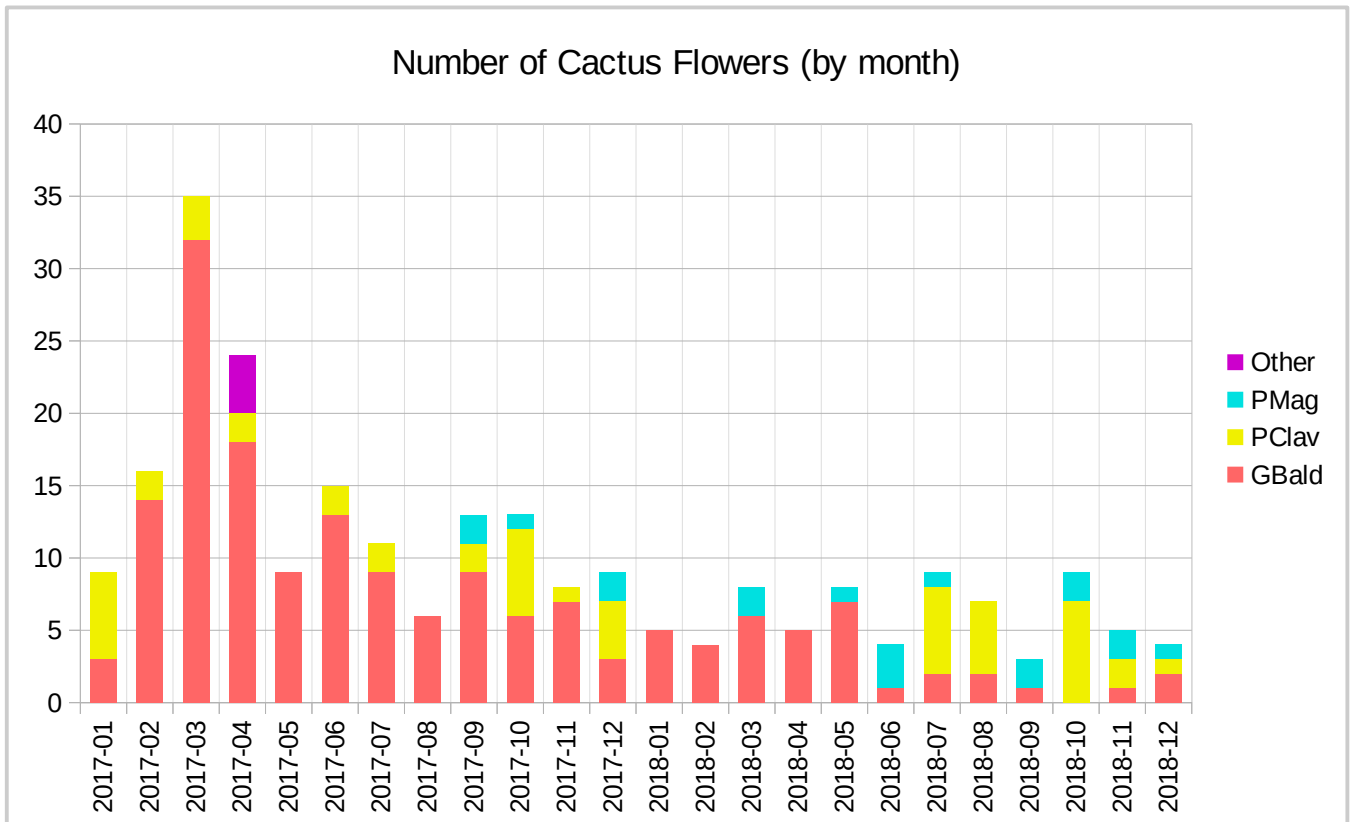
MGeo = *Myrtillocactus geometrizans*

GStella = *Gymnocalycium stellatum*

GSteno = *Gymnocalycium stenopleurum*

This naming scheme is purely for convenience. Just think of them as webchat nicknames.

## Cactus Flowers by Month

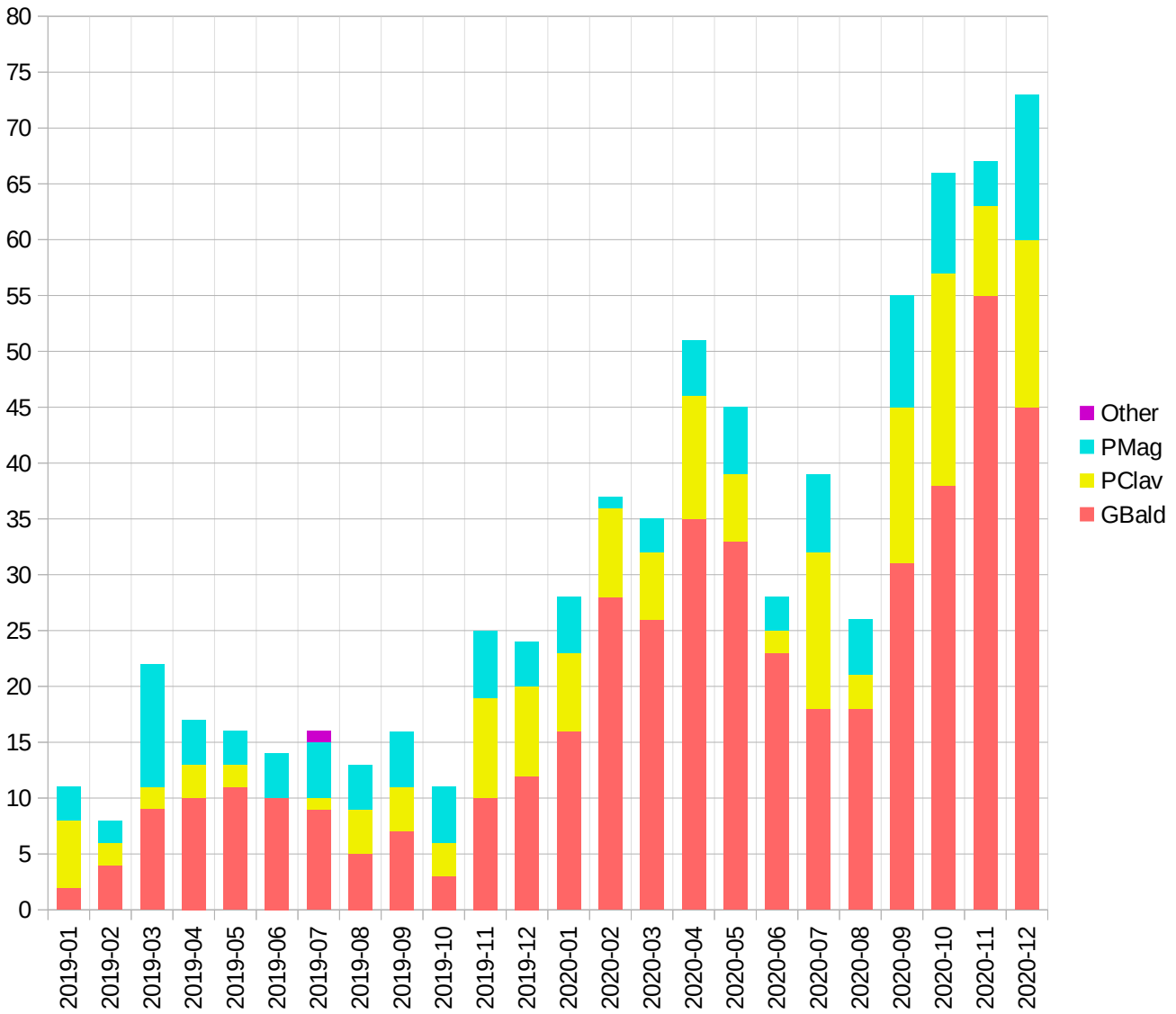


For ease of use, these charts uses flower colour for GBald and PClav while light blue is used for *blue-stemmed* PMags. The two species in the category of Other are GSteno (2017, 2019 and 2021) and GStella (2021 only). *Haworthia* and *Echeveria* flowers are not tracked.

During this period, dormancy-like behaviour among GBald and GSteno specimens ranged from March 2017 (initial detection) to October 2017 (moved out of pots) to April 2018 (potting up of some specimens.) As you can see from the chart, some GBald flowers were still being produced almost every month. The lack of PMag flowers before September 2017 is due to PMag specimens being pot-bound. A similar issue affected PClav specimens from January 2018 to June 2018.

Per-species charts of flower totals by month are also available in a later section.

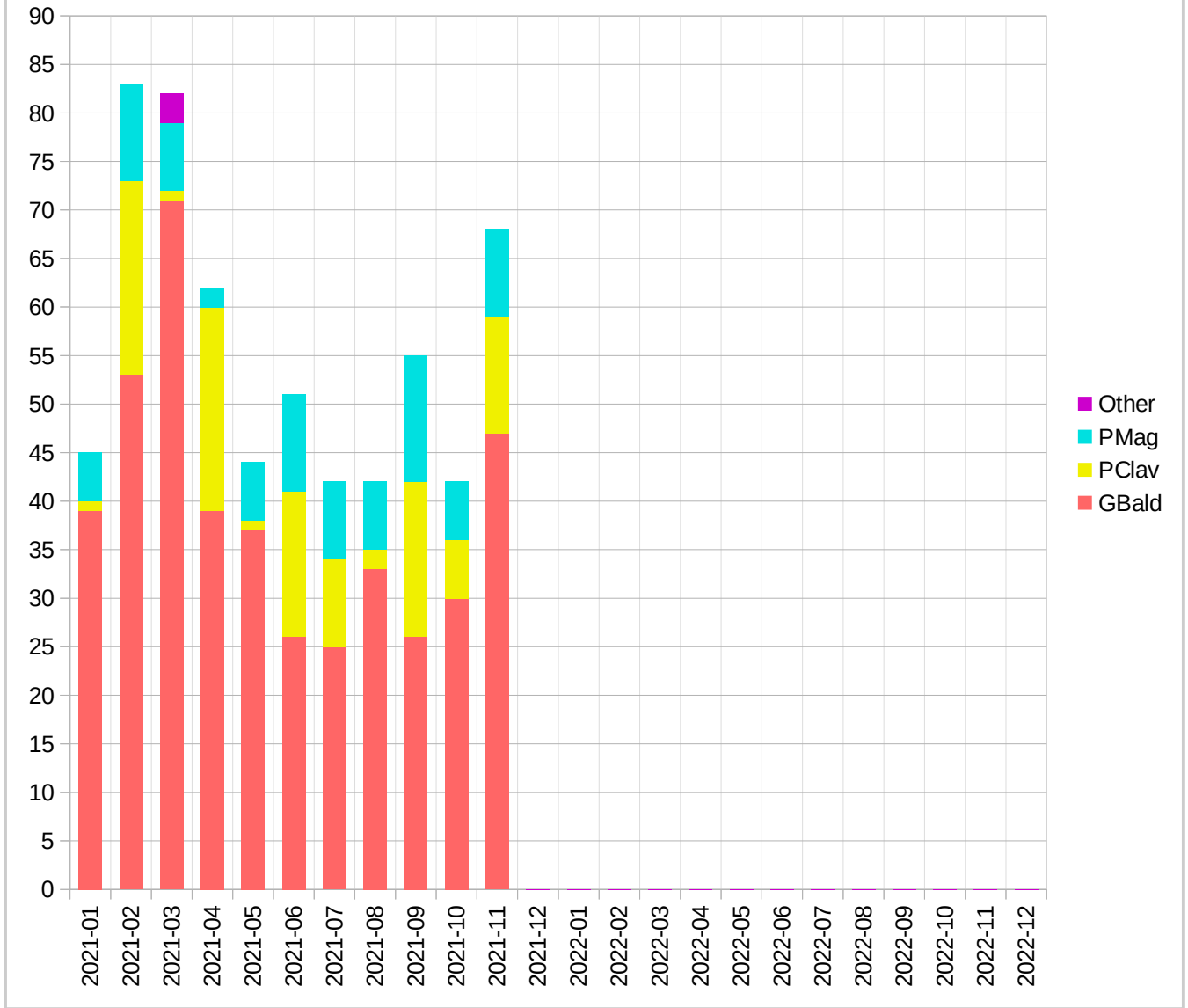
Number of Cactus Flowers (by month)



From 2019, continued recovery of GBald specimens led to more flowers. In 2020, as many as nine GBald specimens flowered for the first time. Out of these GBalds, six were grafted specimens. Two started contributing many flowers by April 2020, and all six were in bloom by September 2020, leading to a massive increase in GBald flowers towards the end of the year.

Subjectively, improved fortified water spraying consistency and better nutrition helped to produce more flowers among PMags, PClavs and GBalds.

Number of Cactus Flowers (by month)

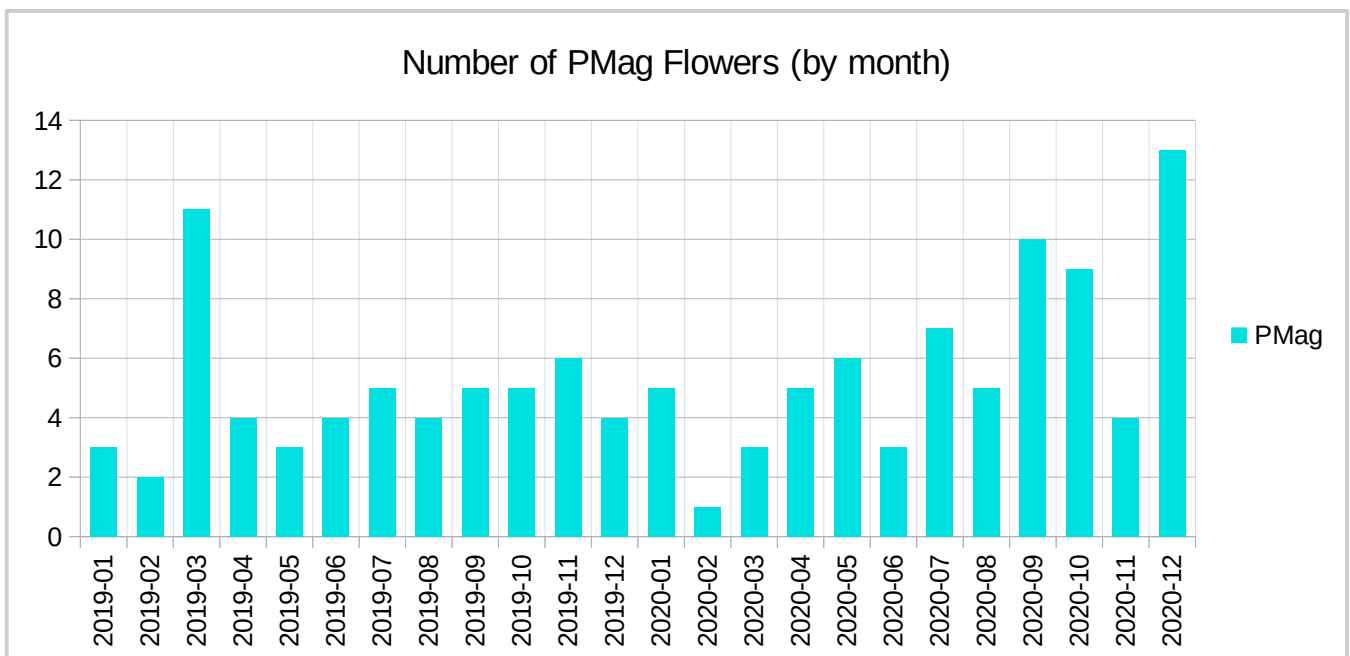
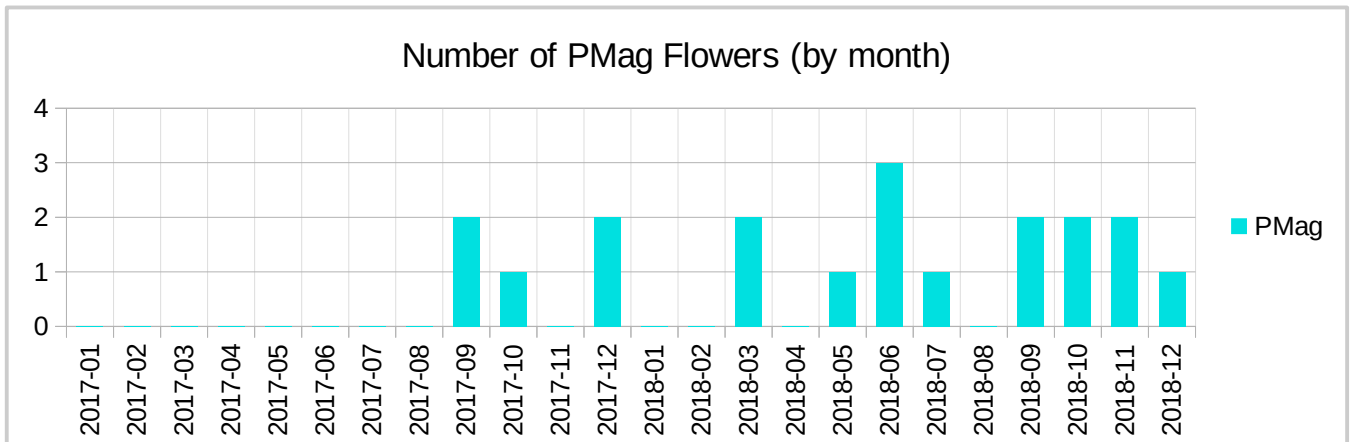


Thanks to the six GBald-on-MGeo grafts, there has been many months where at least one flower was open for each day of the month. In a ‘lean’ month, for example July 2021, the minimum open flowers was 1, the maximum was 14, and the per-day average for the month is 7.7 flowers.

A silicon nanopowder fertilizer was used in fortified water sprays starting from October 2021. While some specimens apparently reacted positively to the stuff, for now it’s unclear whether the peak of 68 flowers in November 2021 is due to silicon fertilization.

# Per-Species Cactus Flowers by Month

Here are the PMag-only flower numbers.



In 2020, five PMag specimens produced one or more flowers. Out of the five, only two were consistent in producing flowers.

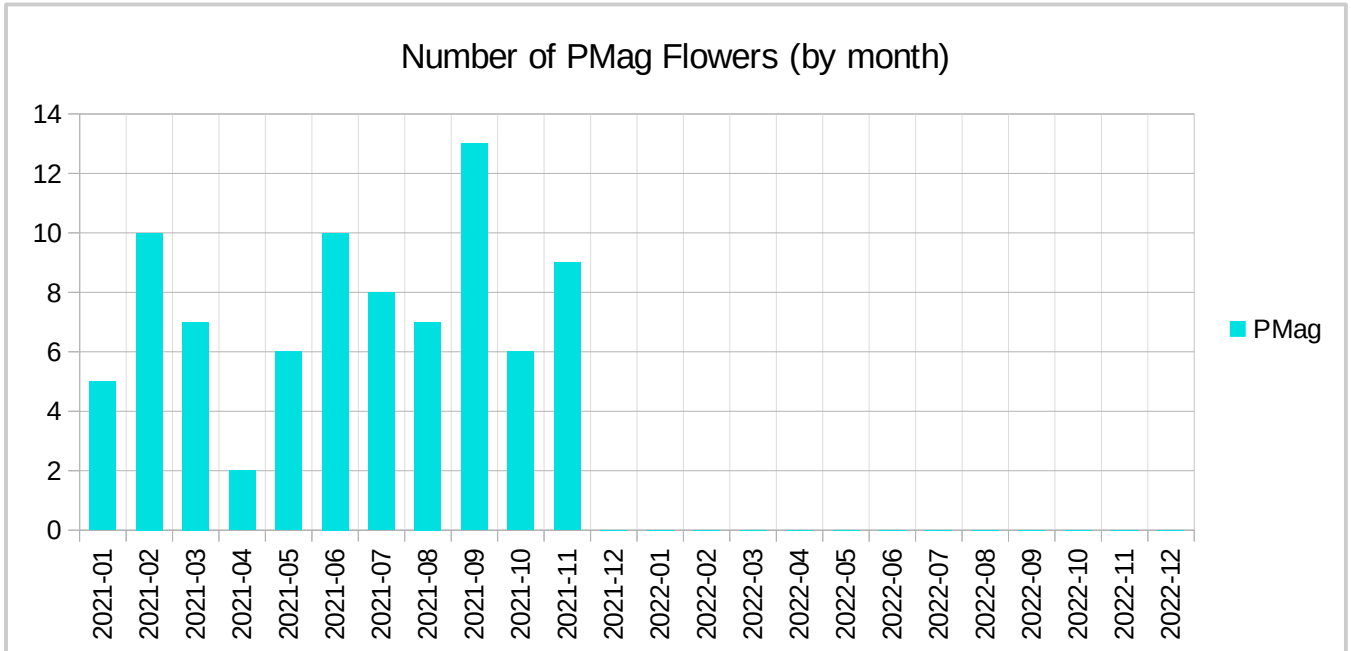
I suspect the flowering potential of my PMag specimens is seriously hampered by being pot-bound to various degrees due to the strong root system of this species. PMags fill up their pots really fast; one may have to repot every year to get a growth rate closer to optimal. PMags are less spectacular as flowering specimens, as one stem can only produce at most two simultaneous flowers. Usually a stem produces only one flower at a time. Also, if there are many seed pods, there will be fewer flowers. We should remember that cactus plants have limited resources to expend.



Two out of four PMags in bloom, each with two flowers open on one stem. This isn't a common occurrence. (November 2019)

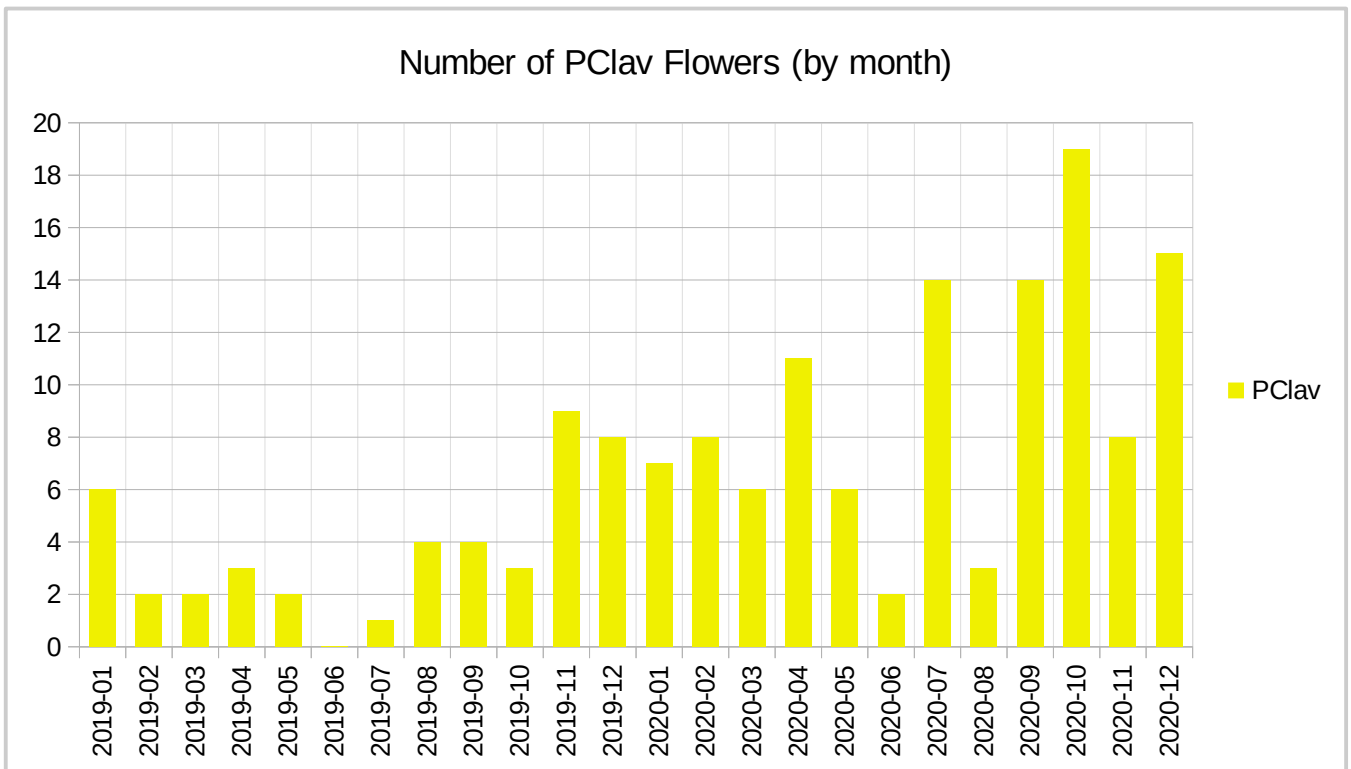
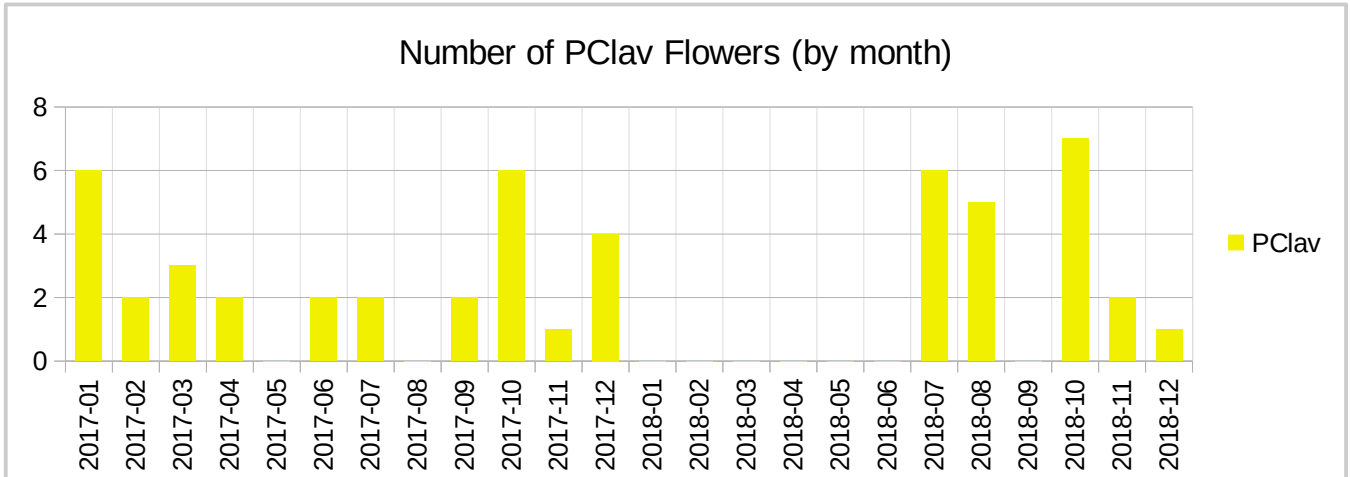


The big PMag about 2 weeks later. The resulting seed pods (arrow) will stall the growth of new flower buds for a while. (November 2019)



In 2021 so far, the two largest PMags are reliably plodding along, providing some flowers each month. The specimens most likely can produce many more flowers if given new, larger pots to live in. I'm thinking of repotting a couple of PMag specimens every 6 months as a test, but the prospect of repotting every 6 months is not very appealing, so I haven't taken any action yet.

Here are the PClav-only flower numbers.



In 2020, four PClav specimens produced one or more flowers. Out of the four, only one – the largest specimen – was consistent in producing flowers.

The second largest specimen is still grappling with having to maintain a number of offsets, so there are less resources to put into flower production. Two others are on the small side; flower forcing was attempted and a total of 9 flowers were produced in October and November 2020 from the two specimens. Seed pods on PClav will also slow down the growth of flower buds.

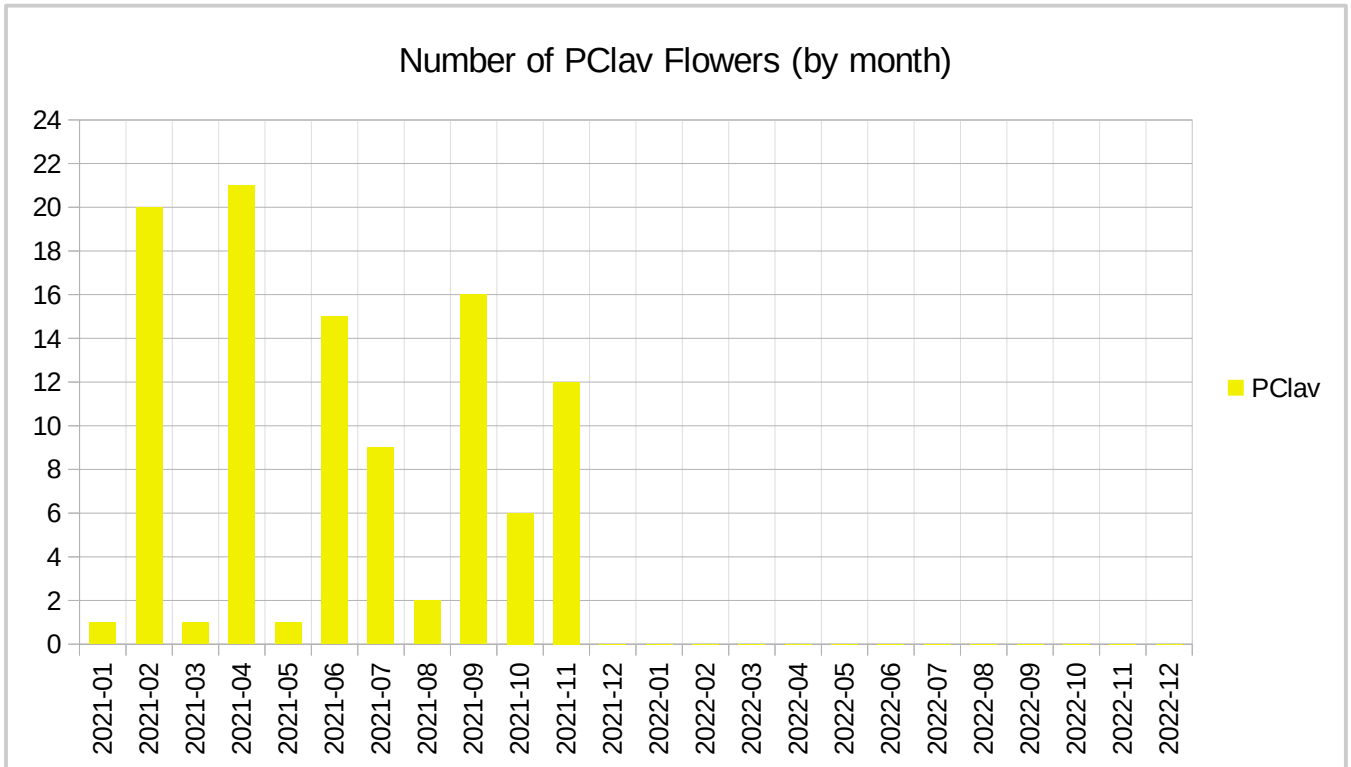




This is the third day these 7 PClav flowers are open – just barely. (October 2020)

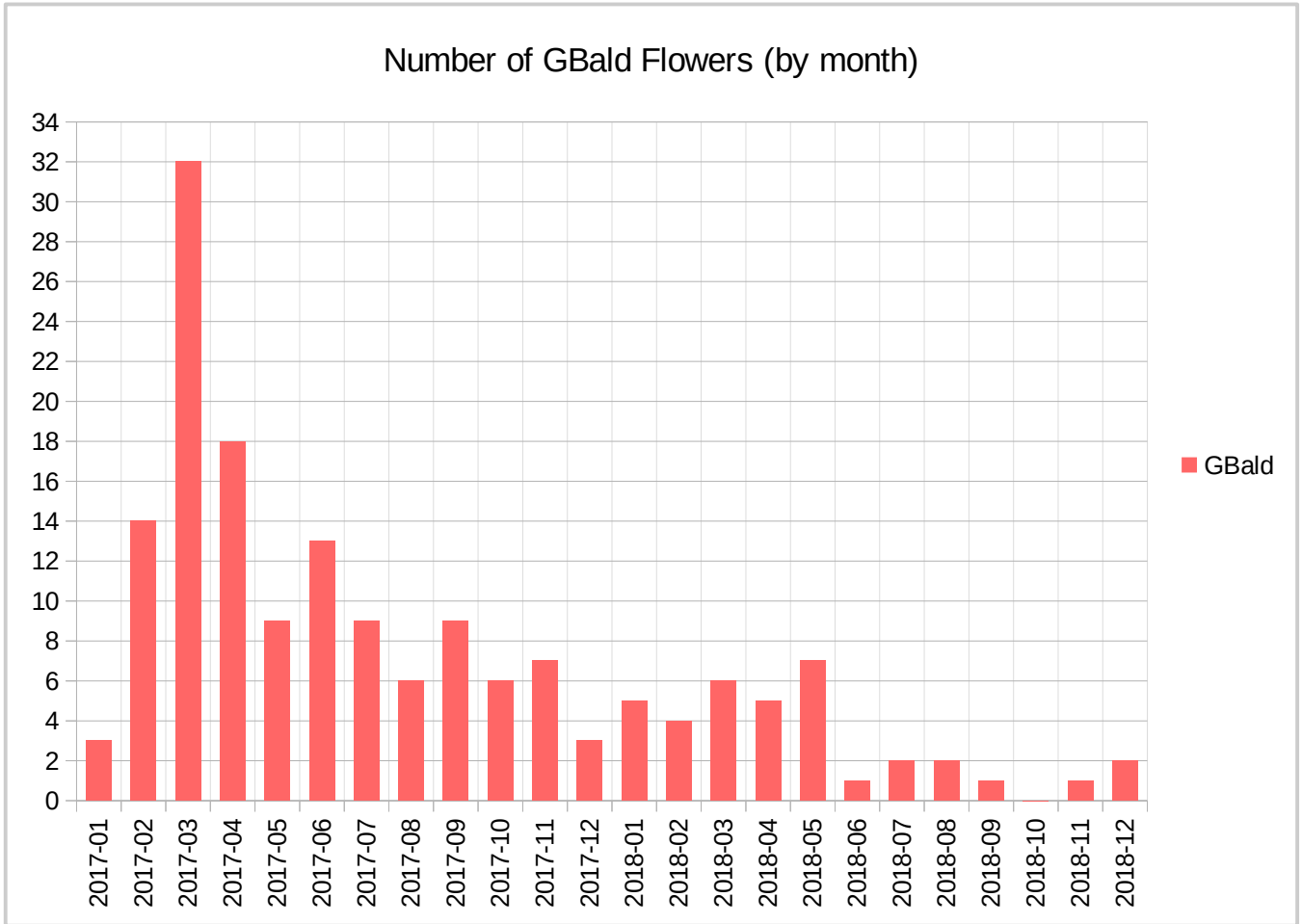


About 10 days later, in November 2020. Three largest seed pods (centre and left) are viable; manual pollination was done on those flowers. In the centre, new flower buds can barely be seen – their growth has stalled due to the seed pods.



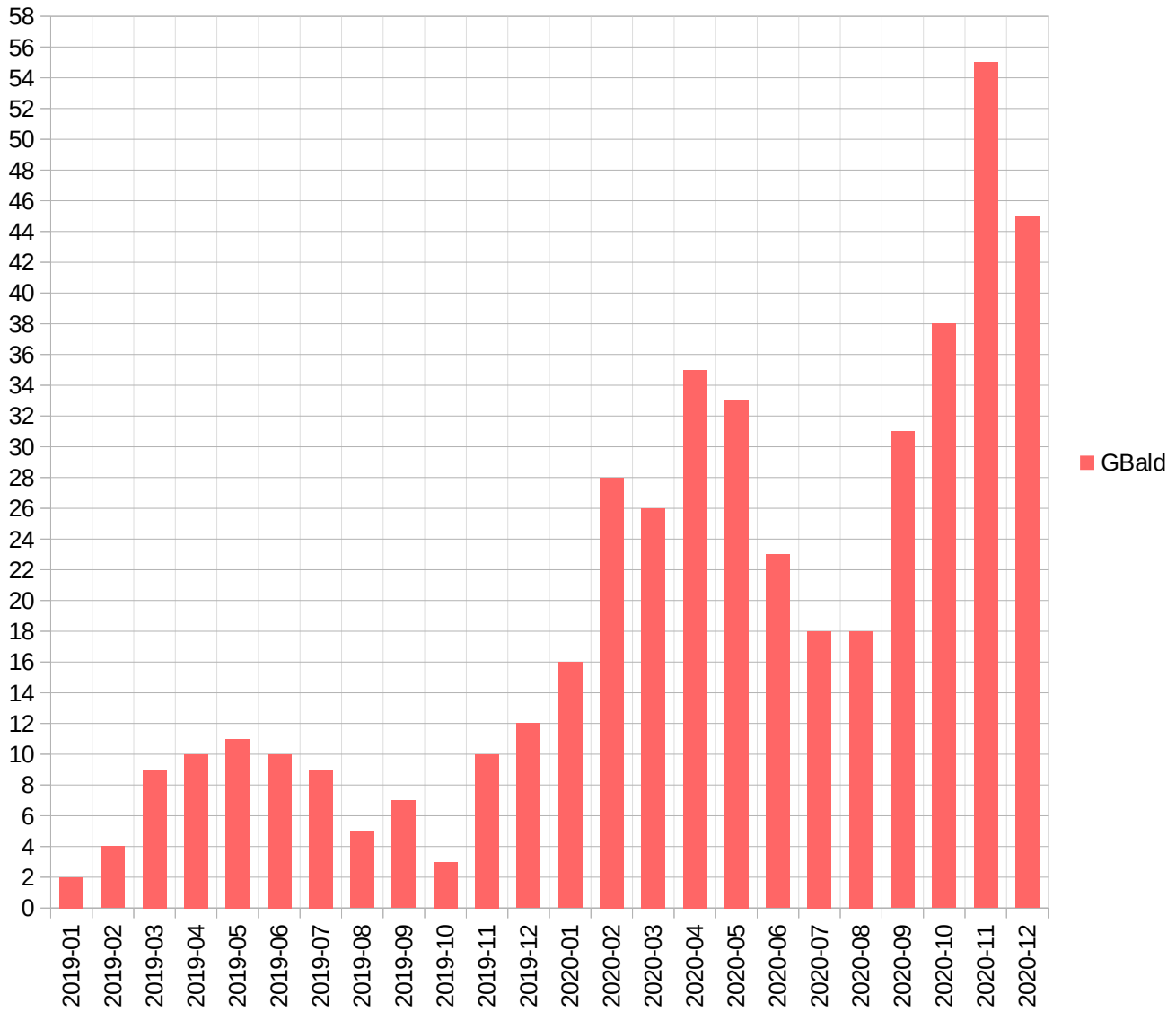
In 2021, all but three PClav flowers were contributed by the big PClav specimen. The big specimen now appears to be operating on a two-month cadence. In the second half of 2021, the cadence of flower flushes is less extreme but the pace of flower production is still very good.

Here are the GBald-only flower numbers.



10 flowers on 6 GBald specimens in late March 2017. There was also a burst of flowers early in the month. Add flowers from the grafted GBald, and the total just surpasses 30 flowers – an early demonstration of what’s possible with GBalds.

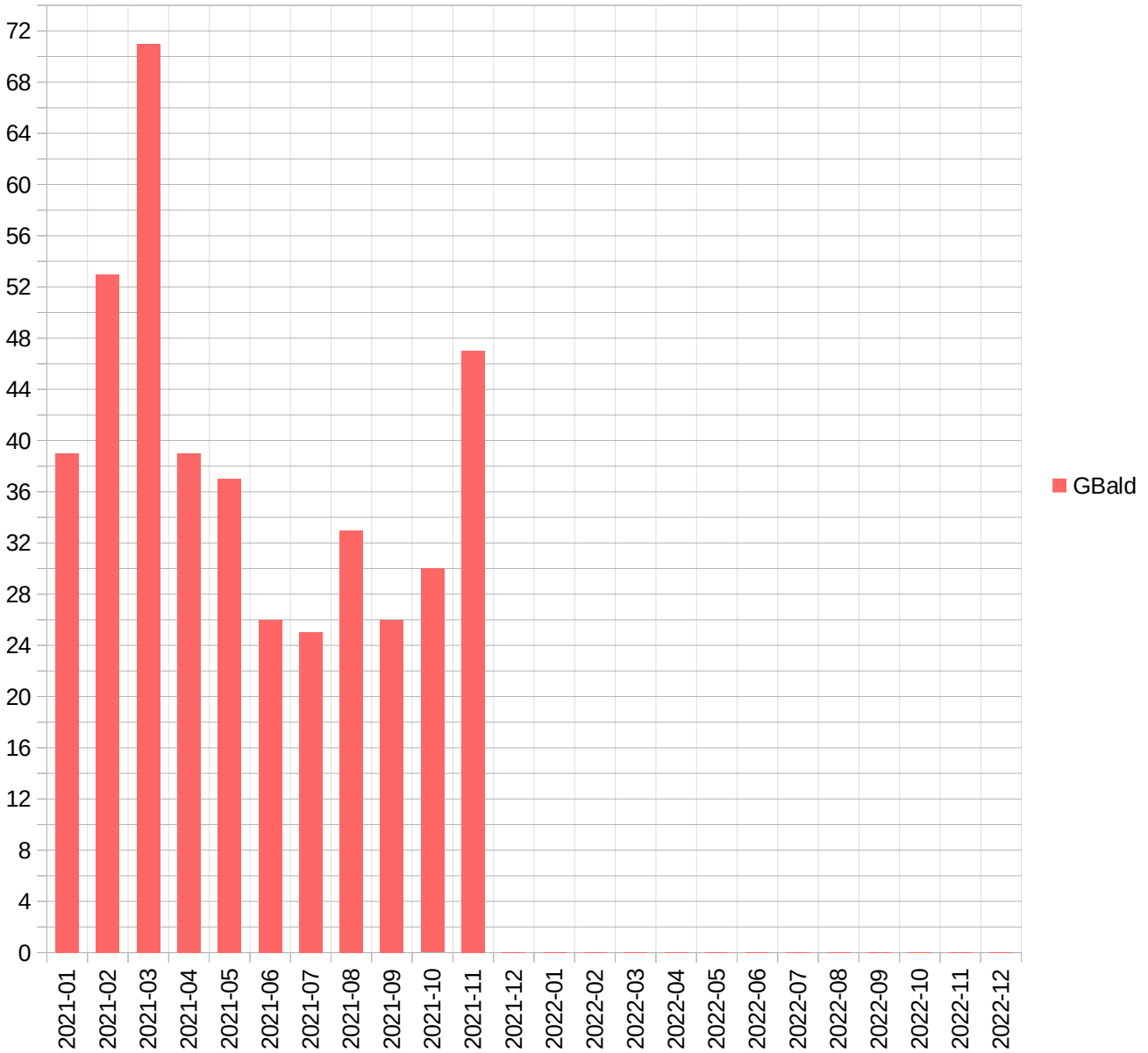
Number of GBald Flowers (by month)



The massive increase in GBald flowers from April 2020 onwards was mainly powered by six GBald-on-MGeo grafts. They were grafted in April 2019. For example, in October 2020, the six grafted specimens (identified as 2019A–2019F in my spreadsheet) contributed 4, 2, 5, 6, 3 and 6 flowers, respectively, for a total of 26 flowers in that month. The other 12 flowers were produced by 7 normal GBalds.

October 2020 was a very productive month: 13 GBalds flowered, in addition to 6 *Parodias*.

Number of GBald Flowers (by month)

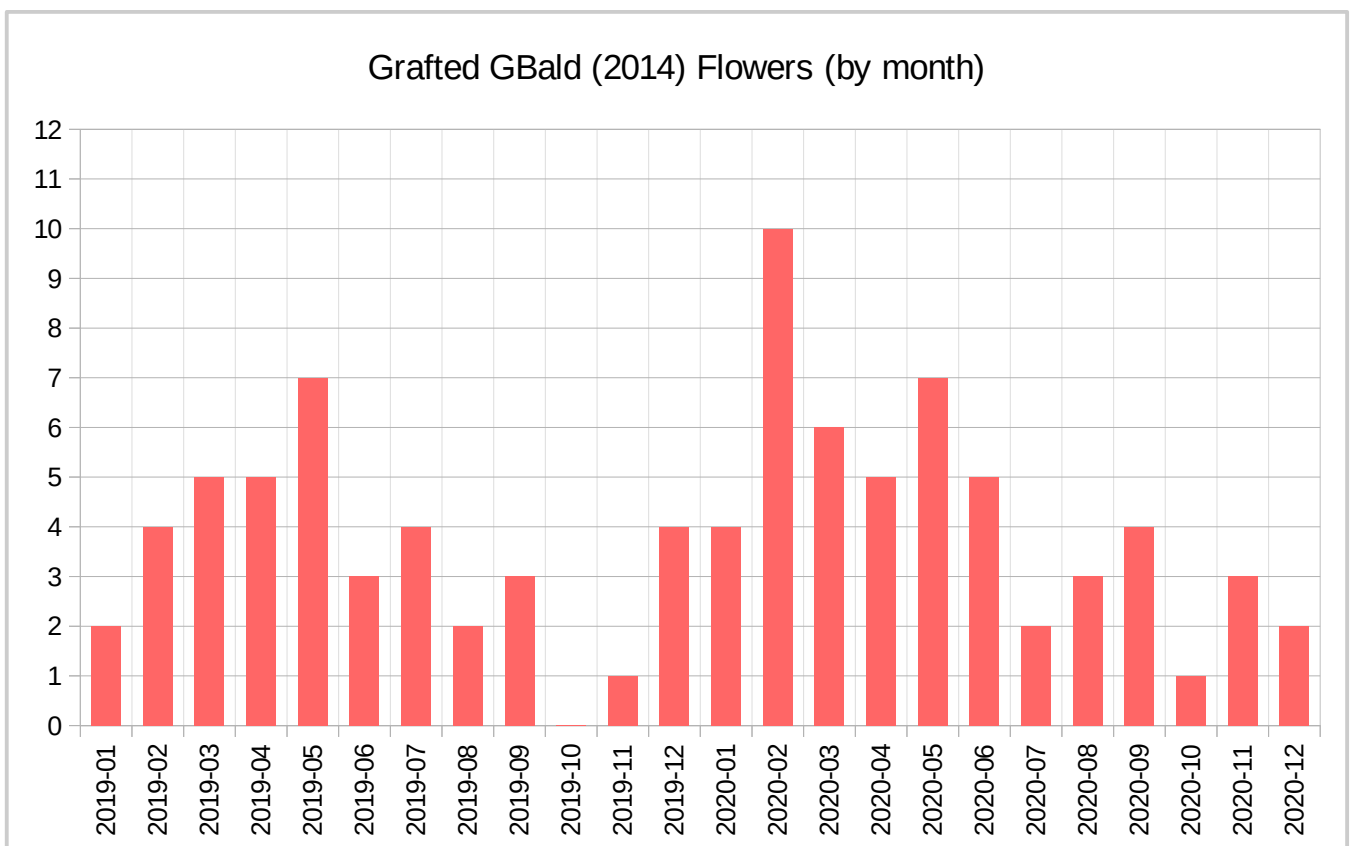
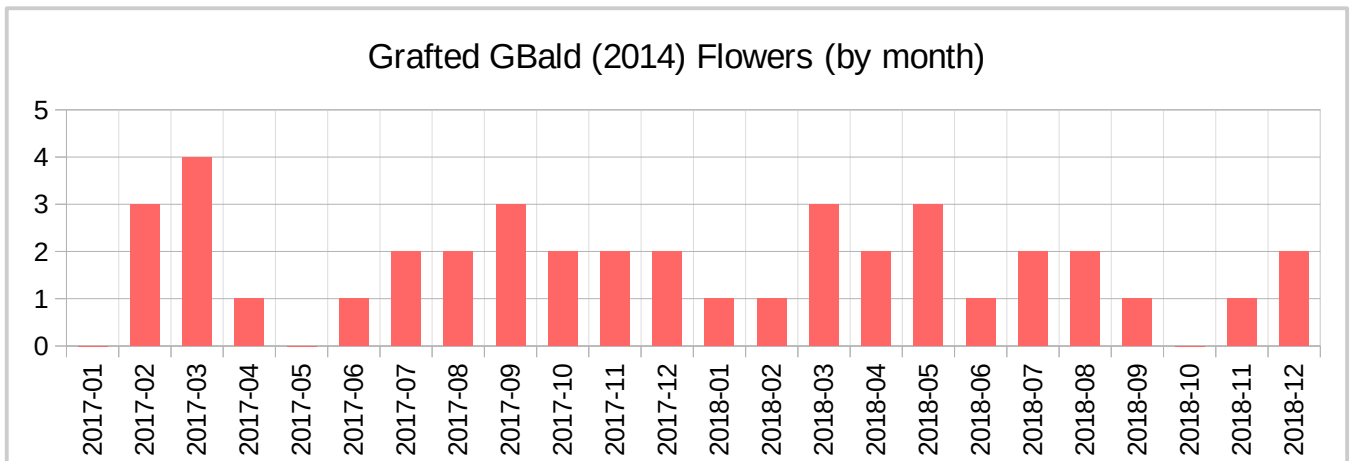


There was an impressive peak of 71 GBald flowers in March 2021. But extended stretches of wet weather in April and May has the disrupted spraying of fortified water, so I believe that I am not getting the maximum out of these GBalds after March 2021.

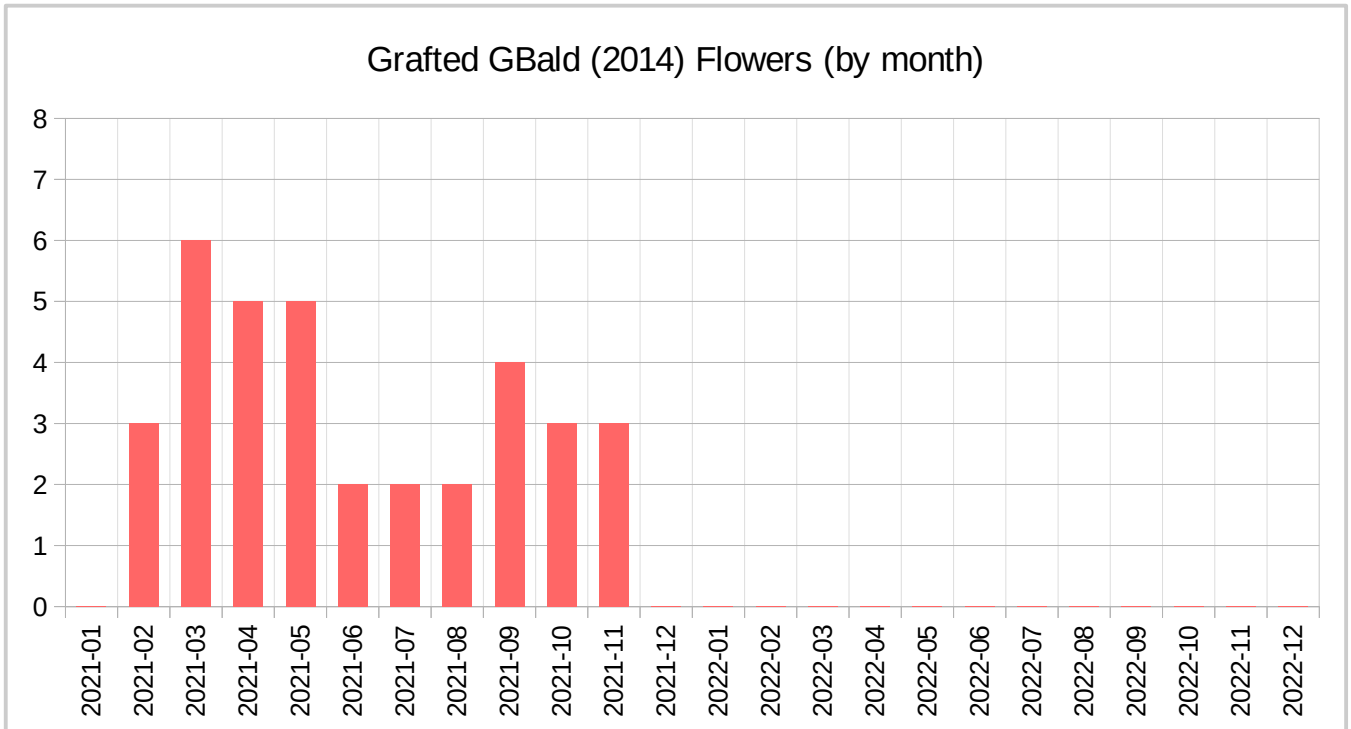
One of the 2019 grafted specimen is dead (2019A) but it wasn't a super performer in terms of flower production. The cause of death may have been bacterial. But six new GBald-on-MGeo grafts were completed in October 2021, and so there may be an uptick in GBald flower production in the next 12 to 18 months or so.

## Grafted GBald (2014) Flowers by Month

These charts track flowers produced by the GBald-on-MGeo graft from 2017 onwards. The specimen was grafted in March 2014. It is described in detail in the chapter on Grafting Part 1.



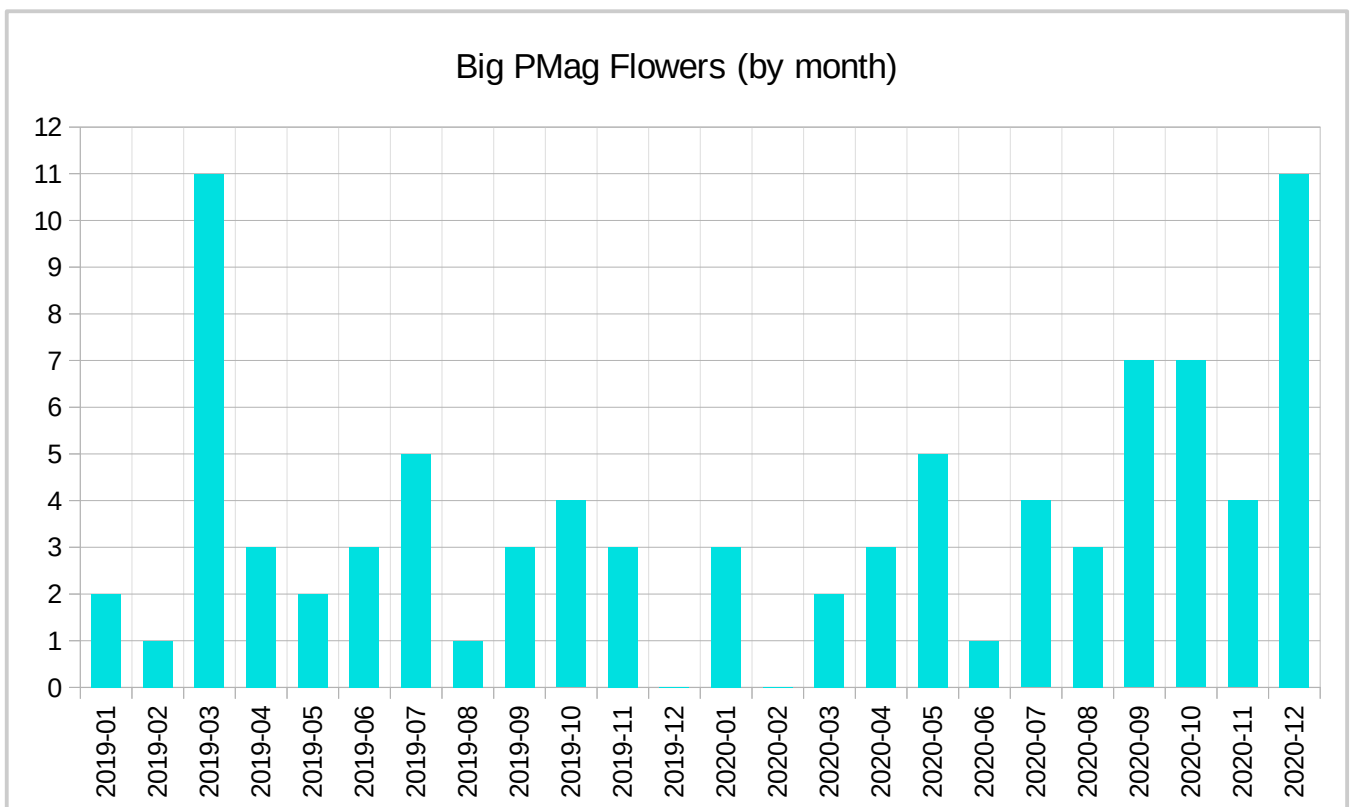
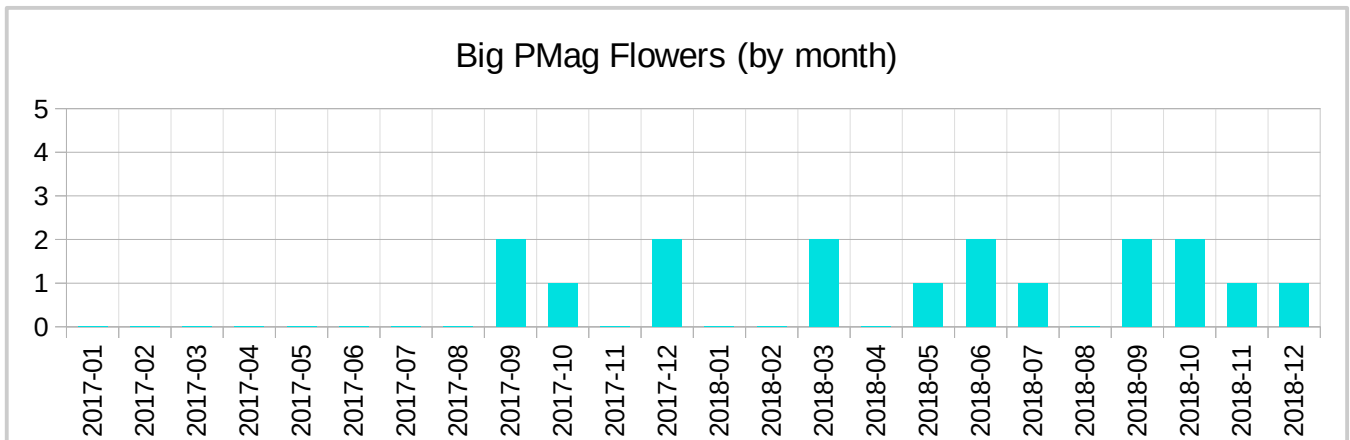
The GBald scion fell off from its MGeo stock in late January 2020. One of the four flowers in that month opened just after it detached. At first there was strong growth, but it seemed to run out of steam after about half a year. I thought it was weakening around October 2020, when one bud aborted, but it picked up again and seem to be plodding along.



However, the specimen picked up again in February 2021 and is plodding along at a leisurely pace throughout most of 2021. You can read all about the progress of this specimen in the Grafting Part 2 chapter.

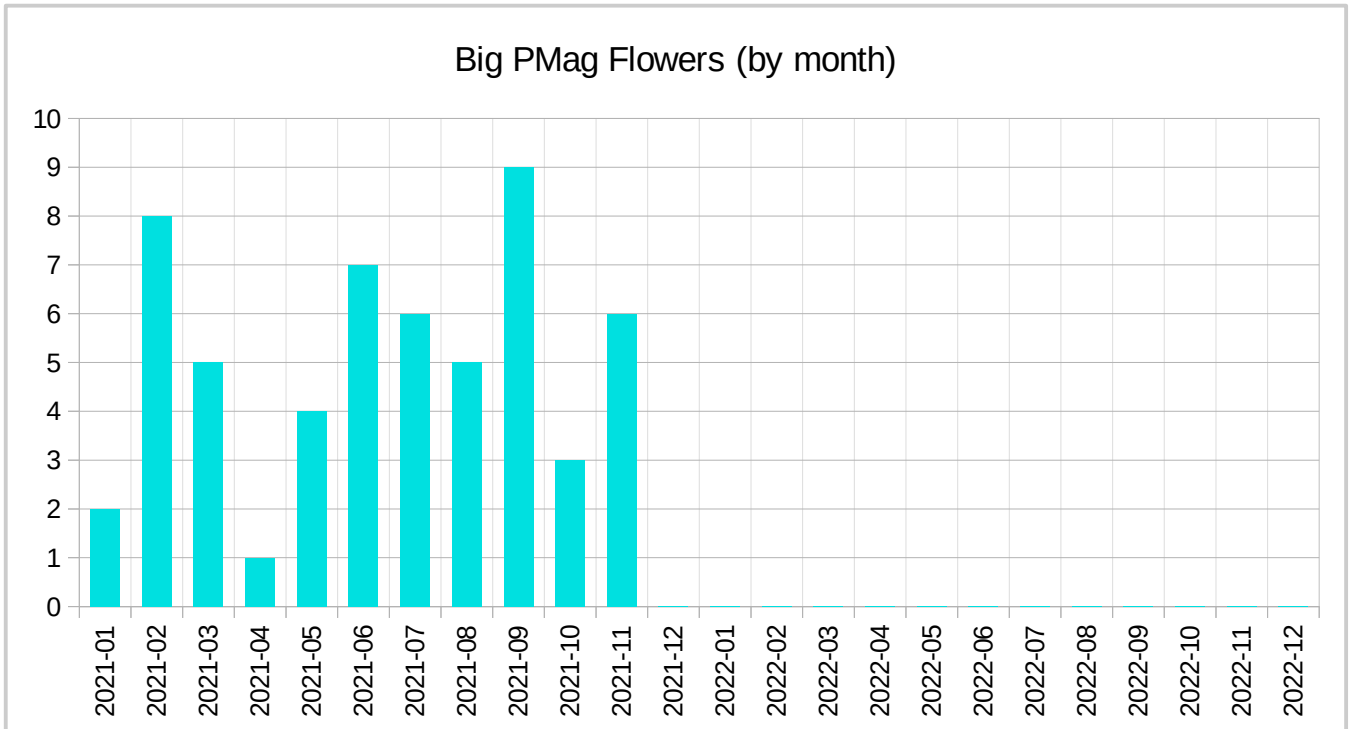
## Big PMag Flowers by Month

These charts track flowers produced by my biggest PMag specimen from 2017 onwards. The specimen was repotted in April 2017 and December 2018. Note the long stretch without flowers from January 2017 to August 2017 – the primary cause was the root system being pot-bound. It was repotted a second time (in December 2018) because I felt it was performing poorly, with few flowers.



The peak in March 2019 may be the result of the root system having a lot of space to grow. Increased number of flowers in the second half of 2020 is probably due to more frequent spraying and better nutrition.

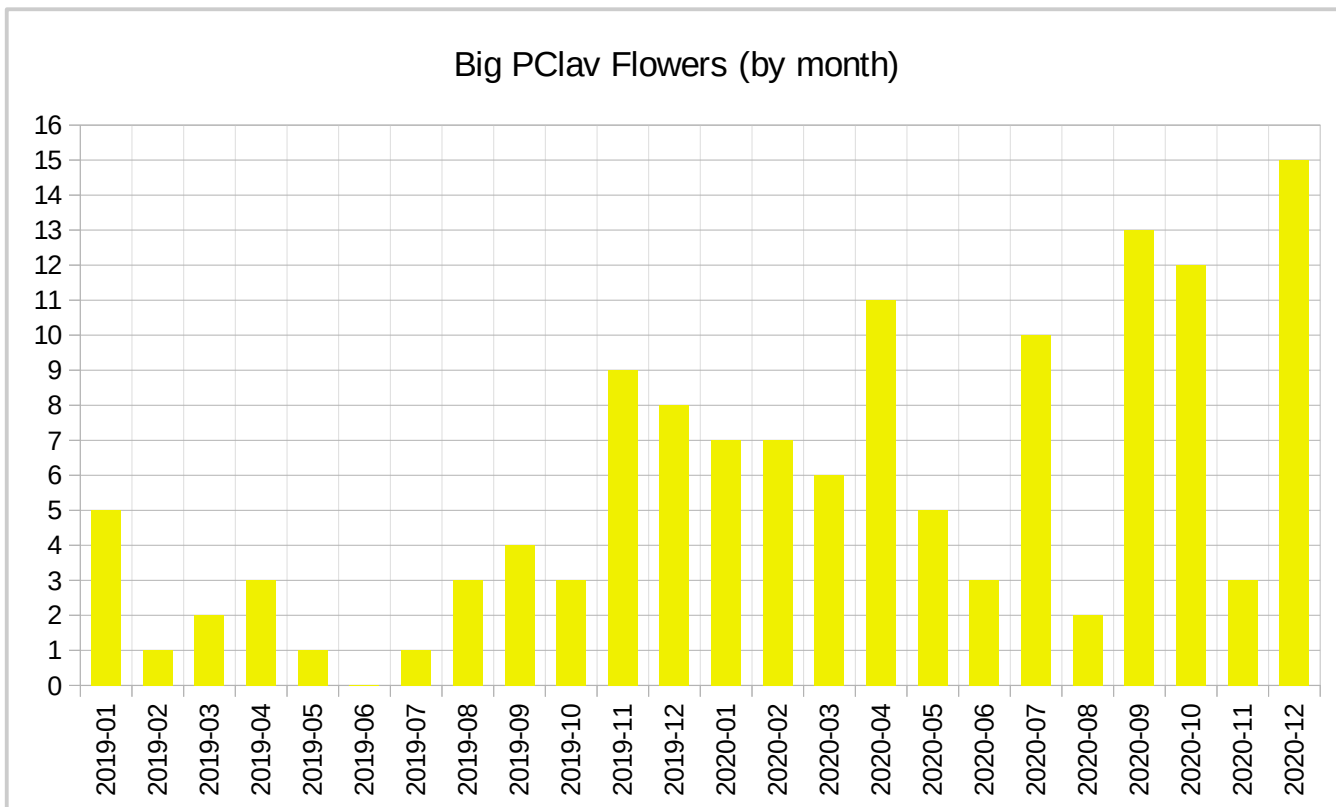
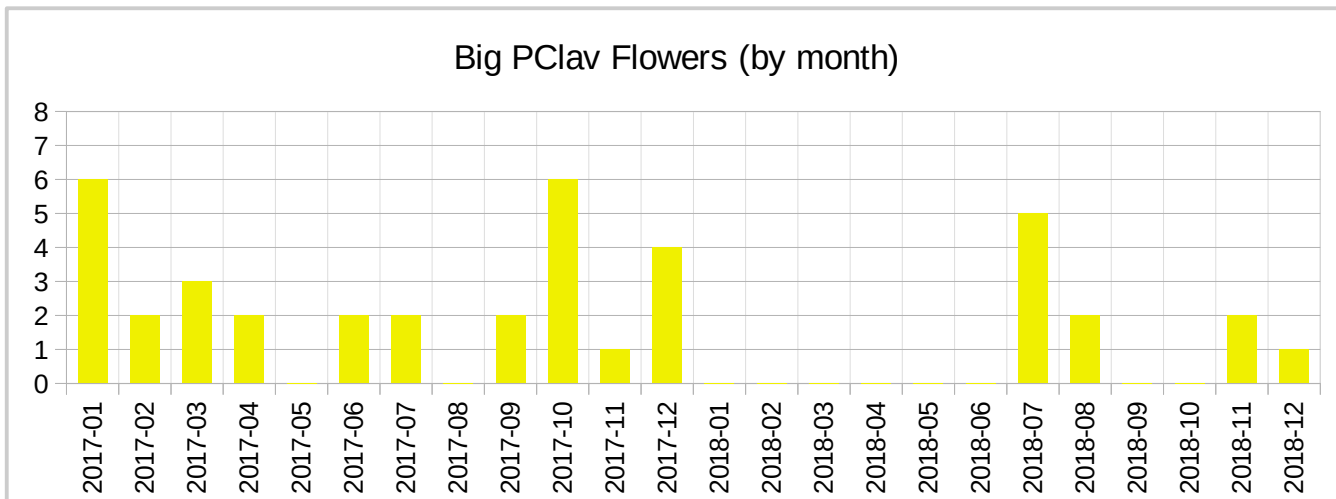




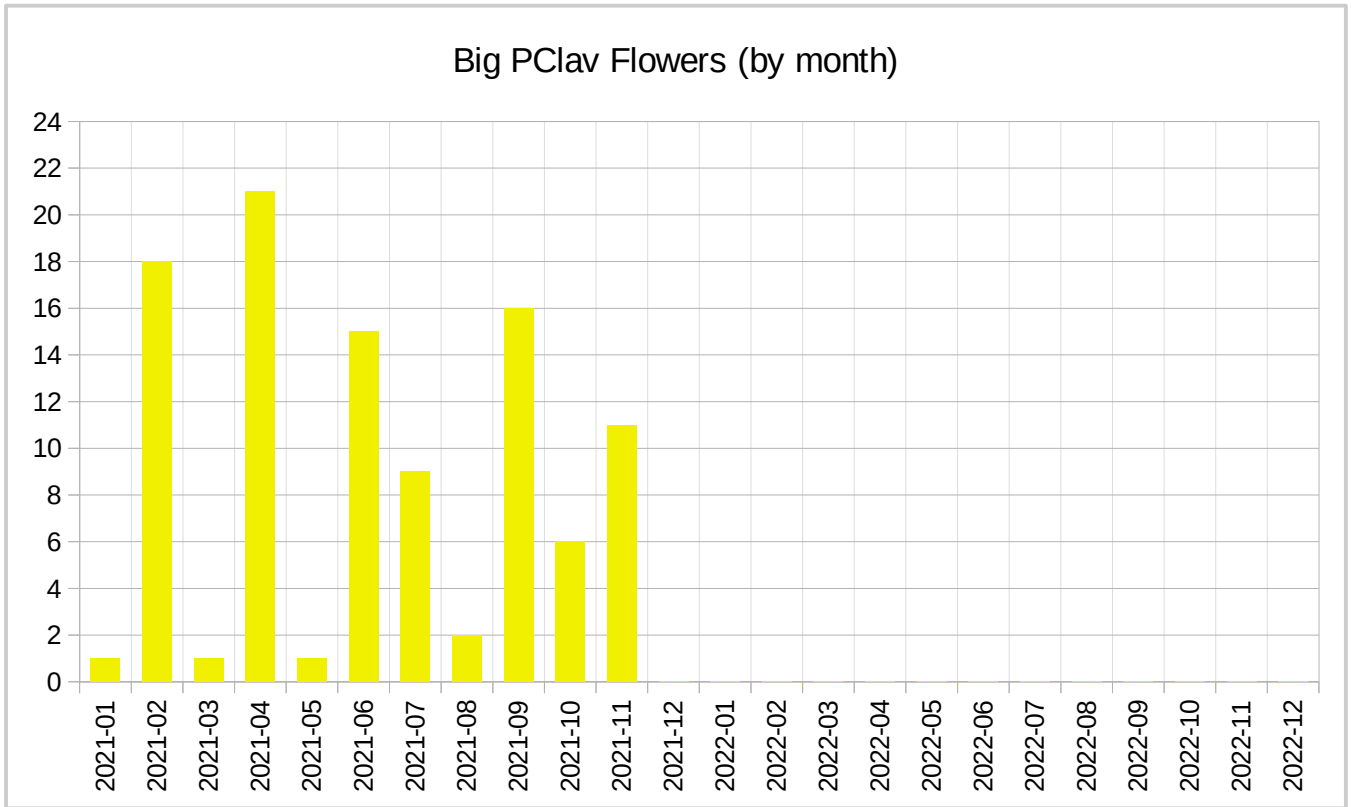
This PMag specimen sets many more seed pods than the large PClav specimen, and these seed pods will slow down flower production. Still, 38 flowers from a single cactus plant in 2019 is pretty good. In 2020, the total was 50 flowers and for 2021 (Jan–November) it has produced 56 flowers. A solid performer, but I think it could be better if its root system has space to roam.

## Big PClav Flowers by Month

These charts track flowers produced by my biggest PClav specimen from 2017 onwards. The specimen was repotted in April 2018 after a stretch of 4 months without any flowers.



This big PClav likes to produce many flowers at a time, so the flower numbers look ‘bursty’, especially in 2020. It does not set many seed pods on its own, so it is more focused on flower production than the big PMag. 40 flowers were produced in 2019. Thanks to better care, this specimen produced 94 flowers in 2020.



The big PClav specimen has produced 101 flowers from January–November 2021. In the first half of 2021, it was putting out bursts of flowers on a two month cadence. The number of simultaneous flowers is higher, but the flowers have become smaller – it doesn't have unlimited resources to expend. However, in the second half of 2021, flower production is more spread out. Perhaps this behaviour is due to a combination of growth and weather.

## Future Updates



A few specimens in bloom in late October 2020, posed. I focus on only 3 species that are willing to flower in the tropics, so I am stuck with red and yellow flowers. The small GBald at lower right is in a 2 inch pot – GBalds may not need a very large root system to flourish. Instead, healthy root systems may be more important for GBalds.

How much did I pay for these plants? RM0.00 – nothing. All are rooted offsets.

I have not sorted out the 2020 data set yet, so this chapter is a work in progress.

550 flowers was produced by my cactus plants in 2020. For the 4 year period of 2017–2020, the total number of flowers is 982. For 2021 (Jan–Nov), the total is 616. ♦

## Version Information

This is the December 2021 Edition of this document.

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## Colophon

Written on LibreOffice. Most images were produced using GIMP and IrfanView. PDF tested using SumatraPDF. Fonts used include Liberation Serif, Arimo and Liberation Mono. The document is sized for A4 or Letter printing with enough whitespace for comfortable reading.

All pictures used to produce the images in the document were taken by the author unless otherwise stated. Images are not meant to be of art print quality. The pictures were taken by unsteady hands without a tripod, then they are cut or resized and finally resampled to about 150 DPI and a JPEG quality of 80 for screen reading and also to keep file sizes manageable.