

A Hobby Growers Perspective

Growing Orchids is a Partnership

The key focus in this article is on the genus Miltoniopsis all though the principals expressed could be applied to other genera with equal success.

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I started growing orchids from scratch in 1992 had some interesting challenges. The first being that I had never shown any interest in these plants before nor would I have considered myself a gardener, but as a hobby it seemed the right fit for me and my family. The journey began.

Being mentored became an important part of the process as there was not a lot of suitable orchid reference material available in New Zealand. Lessons learned came from mistakes made.

Like all growers in the southern hemisphere I started with cymbidiums and extended into other genera as time went by. It was 2005 that another grower challenged me to grow a Miltoniopsis that started me down this pathway or as I have described as being the Partnership approach to growing orchids.

I was asked to be involved with two trials in February of 2019, one with Fertilizer, the other with Fern Fibre substrate I have been reporting on their respective successes separately in our New Zealand Miltoniopsis Growers newsletter which copies of can be found on the International Odontoglossum Alliance web site.

<http://www.odontalliance.org/> With, both trials are happening at the same time and my project background I felt they needed to happen in partnership with each other.

I find myself asking the question: Would one trial have been successful without the other?

My answer is a yes as I have some plants that are outside the controlled sample in each trial showing positive signs. The difference being in the combined sample or trial group, the positive signs are more noticeable as commented further in this article.

These signs convinced me that growing in a **“Partnership”** environment provides better if not the best results.

Some will simply say this is business speak and brush these thoughts aside saying what they currently do is fine as its working for them. My response would be by way of a challenge. **“Do you not want to see if you can grow better consistent quality plants?” *“Remember doing it the same way tends to always produce the same results”***

The Orchid Partnership as I see it.

We may not realise the moment we start growing orchids we are entering into a partnership.

The Orchid partnership consists of Light, Temperature, Air movement and Water without this basic partnership our plants would not survive in the first instance. We then tend to play around with the potting mix and fertilizer we use. I know we all have our favourites, but challenge yourself to change find something that will provide better results. Hence the trials I have become involved with I find are doing just that.

Having recently completed a number of talks to various orchid societies on **“The rebirth of Miltoniopsis”** I found time during these

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sessions to find out the various thinking in terms of orchid culture in the lower half of the North Island and the top half of the South Island. We do not all grow Orchids the same way hence the varied result, that to most really is no surprise.

I am not suggesting in any way my way is the right way either. Some growers say Bark is the only medium others say Sphagnum Moss is the only way to go others are happy to mix their potting mix. It surprised me that very few had tried Fern Fibre.

A similar set of varied answers were presented when it came to fertilizers. Very few seemed to know the conductivity frequency of their Fert. Or the ph. Level of their water supply they seemed to base their fertilizer strategy around the N.P.K strength of the product being used. Most, said they opted for an above 12 (N) nitrogen level product their thinking being that high nitrogen levels produce greater growth. They tended to liken it to farmers and their grass growth activity.

At this point I became convinced there is a strong requirement to match the fertilizer and the potting mix to get the best value output.

Making the Partnership work for you.

I am of strong opinion that successful partnerships result in producing win, win results. This means in orchid terms your plants look better, their flowers are more vibrant and your overall inner grower pride is lifted.

For some easy to say, for others a dream but, the above can be achieved if you wish to put the energy and commitment into growing your orchids. Time can be managed as suggested in further content.

In most cases your light and temperatures are managed by the growing environment you

have decided on followed by the genera which you intend to grow in that environment.

I know that time is one of our biggest constraints but there are ways around that such as a level of automation of watering and fertilizer addition.

Others will say it all comes with a cost but there are ways of saving. Simply monitor usage of water and fertilizer by measuring the results cuts down on overall usage. Also consider change of potting mix from bark to fern fibre. This change I have found requires only 50% of the watering requirement.

Take extra notice of the fertilizer you intend to use so that it will produce the results that you expect. In the past I was like most I would pick out what was on special off the shelf and apply under the little and often principle. Since adopting an orchid specific fertilizer I have noted accelerated growth, better flower production and cost saving of over 30% of the fertilizer cost from the previous season despite a 15% increase in the number of plants in the collection.

Look at your potting medium be it Bark, or a mix of Bark and pumice or Fern Fibre the right medium for not only your plants but it suits the way you water and fertilize those plants. We are all different and therefore we approach this as I see critical task differently.

I have identified the following as being key elements to the partnership approach:

- **Light and Temperature**
- **Potting Medium**
- **Water and Fertilizing**
- **End Result Flowering and possible Award Winning Plants**

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1. Light and Temperature

Light and temperature are two elements in Orchid culture that go hand in hand. Knowing what light levels and temperature conditions your plants best grow under is often a bit hit and misses. We have all been there. But with the aid of programs such as Orchid Wiz you can identify the optimum conditions for most genera. High light, low light and shade seem to be the levels commonly described yet we often struggle with measuring such levels. Smart phones have a light meter application which can be used if you want to be accurate or if you place your hand some 300mm above the plant when the sun is at its peak in the growing environment and you can see a light shadow across the plant then it's in general considered to be a reasonable light level for most plants.

Temperature with in the growing environment can be controlled by open and close type ventilation or a fan maintaining air movement or a heater which maintains the temperature you require. For example. I have my Miltoniopsis I like to maintain a minimum night temperature of 12°C so I have a small fan heater on a timer which comes on at 11pm and cuts off at 8.00 am during the winter months. Having a concrete floor in your growing environment can also act as a heat sink for energy release during the night.

2. Potting Medium:

It is this section that the fun starts and before I go any further, I operate under the principle of what works for me, may

not necessary work for you. Yes I have tried straight sphagnum, I have tried that old hand me down recipe, I have tried straight bark and a bark pumice mix and now I am trialling fern fibre. Results with fern fibre are far ahead of any other potting mix that I have used to date.



Fern fibre has some unique qualities for example its ability to hold moisture therefore requires less along with any fertilizer mixed in that water supply.

3. Water and Fertilizing:



Like most I started my approach to watering and fertilizing with lifting pots testing their weight and applying the water and fertilizer as I saw fit. My results were in hind sight

fair to say the least.

I have now adopted a timeline approach for all and the results to date are very positive. By saying all I do have the various genera within my collection separated



so that I can manage and observe the various water frequency requirements but most importantly this process is undertaken in conjunction with conductivity frequency readings testing the volume of nutrient the plants are receiving.

As I have commented earlier I am using as a preference a low Nitrogen fertilizer as per the label on the Dyna –Grow product.

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Being retired, I have the time to plot this activity on a graph. So I have a pretty good indication as to when I should expect to see signs of spiking and when to switch from a growth fertilizer to a bloom fertilizer.

Simple automation can be via a timer on the water supply meaning your plants are watered for a set time over a set time period.

Another method might be to install an in pot water feed system this can be expensive if automated injector pumps are used or relatively cheap if a gravity system is installed.

Using this approach allows you to measure the amount of water and fertilizer each plant is actually getting and saves you time and in the end money as you use less fertilizer.

From personal experience I have found that for me a, low pressure gravity feed systems provides the results I expect and is cost effective meaning that I use less fertilizer. Samples are taken at random locations each time I water / Fert to ensure all plants are receiving the same amount of water and fertilizer.

4. End Result Flowering and possible Award Winning Plants.

This element has two sections and it is my intention to cover this topic in greater detail further in this paper.

1. Having a plant which flowers is but one challenge. Having a plant with many flowers is a great result.
2. You will also note in the title above I have said possible award winning plants to explain. We will have all heard the phrase "Beauty is in the eye of the beholder" and yes we are guilty of thinking that when it comes to our flowering plants.

However we need to accept judgement by our peers when it comes to the allocation of an award.

Lining these Four Key Elements up:

This action is not always as easy as it sounds, as it may in some cases take more than one growing season to establish your baseline and even note differences in your plants unless you have been maintaining records of your observations and I suspect not many of us do this.

We tend to look at a plant if it is not doing any good and say to ourselves; this plant needs to be shifted into perhaps more light or high up in the green house, or into a shaded area. It is not until we have tried these three moves that we start to consider the potting mix and the fertilizers being used.

The other approach often taken is that we ask another grower or see the plant in another grower's collection and we try to copy the location in our own environment not asking about the water and fertilizer program that this grower applies.

Since being involved with two trials and establishing measures of success I have found that simple records provide a good historic recourse to plot the progress of your plants. I believe in not over complicating the issue but gathering sufficient information to verify any comment I might make regarding the collection.

Also have access to a resource such as Orchid Wiz saves time and energy in terms of plant



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location within your green house environment.

Suggested Steps towards alignment:

- **Step 1:** locate your plants by genera in your growing environment. The warmer growing onto higher shelves the cooler on lower shelves. This makes it easier to see which is growing better than the other.
- **Step 2:** Establish a program for watering and fertilizer. Some will say that this should be adhoc in other words lifting pots and if they feel light then water and feed. I suggest a better way is to establish a timeline. For example in the summer months every 2 days and once daylight saving finishes extend the timeline out by double till the end of winter. (4 days, 8days 16days) then start the reverse process into the summer.
- **Step 3:** Measure the strength of the fertilizer being applied (Conductivity Frequency) and if possible plot against a graph to see performance gained. This way you can forecast flowering to some extent.
- **Step 4:** Be prepared to change to a "Bloom" fertilizer once spiking has occurred.
- **Step 5:** While steps 2 to 4 have covered the water and fertilizer requirements you also need to observe what is happening with the potting mix. If you are not getting growth then consider a change. I certainly did and was to say the least blown away by the results. I moved from Bark to a Bark / Pumice mix to Fern Fibre substrate within a 6 month growing cycle.



- (1) Photo shows two **Miltoniopsis Robert Jackson 'Wild Thing'** both re-potted on the same day one in Bark/Pumice mix the other in Fern Fibre
Photo shows after 4 months. Clearly the one in the Fern Fibre is ahead of the one in the Bark /Pumice mix.
- (2) The photo on the right shows the root development of the same Miltoniopsis after 6 months with the plant presenting the clump of roots from the Fern Fibre sample. Both plants were side by side in the green house and received the same water and fertilizer. By my observation the plant with the Fern Fibre and Fertilizer mix partnership provides the best result.

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End Result Flowering and possible Award Winning Plants.



To get a successful end result, time and experience has proven to me that a “Partnership” approach is required. You the grower are the catalyst that brings it all together.

Getting the right fertilizer, marrying that to the right potting mix and partnering that with the way you grow things provides you with and end result you can be proud of.

- Start off with purchase of quality plants or seedlings
- Be prepared to monitor plant development and change where poor performance is noted. ***You must be prepared to change.***
 - This may require shift plant position within the green house
 - This may require re-pot with a different medium
 - This may require change in Fertilizer mix and or strength
- Record and Share your experiences and display your end results

“Remember doing it the same way tends to always produce the same results”

Being a great believer of the effort you put in provides you with the best result reflective when your plants flower. Having been lucky enough to have retired and have the ability to time manage I have reaped the rewards.

The photo is of **Mps Taranaki Pride** awarded an AM by the Orchid Council of New Zealand Judging Group in 2018. The Plant below is **Mps Breathless ‘With Love’** awarded an HCC by the Orchid Council of New Zealand in 2019.



So now I find myself awaiting the results of the “Partnership” trials I am undertaking.

I am looking to see more flowers and more spikes. In general to date my plants have averaged 4 flowers per spike and 2 spikes per plant.

15 pair of Miltoniopsis plants formed the basis of the initial trial. As a result of the information presented to date a further 50 plus Miltoniopsis have been transferred into the fern fibre substrate mix along with around 50 odontoglossium’s and other genera including some 100 promenea.

Already I am seeing results in terms of plant development and spiking, just awaiting the flowering stage.

I have also a number of different genera attached to Fern Fibre slabs or rafts to see how they progress. Showing positive results to date with plants showing signs of attachment to the slab after 1month.

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Having been involved with several corporates over my working life I have tended to visualize via various models to support the anticipated outcome expectation. Hence my view of “**The Partnership Cycle**”



While the initial trial program was with the Miltoniopsis in the collection it soon became apparent that there was value added to other genera.

To follow is just a sample of these results:

This is: **Oncidopsis Nelly Isler** (*Oncidopsis Stefan Isler x Miltoniopsis Kensington*) I have had this plant for about three years.

For the first two years I grew it in a bark pumice mix I used to get a single spike with 4 to 5 flowers. Last year changing to a fern fibre substrate and applied a regulated



fertilizer program the plant has produced a single spike with 8 flowers. Each flower circular in shape and 25% larger than in previous growing seasons. The plant itself has also grown twice its size from the previous season.



Learnings: The change to the fern fibre substrate with a regulated fertilizer program provided positive results in both growth and flower quality.

This is: **Miltoniopsis Breathless ‘With Love’** (Miltoniopsis Pink Lady x Miltoniopsis Pearl Ono) I

have had this plant for two years and while this photo was taken of the plant while in a bark pumice mix the plant has now been transferred to a fern fibre substrate and is showing positive signs of increased growth performance which should transfer to increased flower production.



While I have only shown two examples at this stage there is more to come in the 2019-20 growing season. Maintaining record of results from fertilizer input to growth activity with the fern fibre substrate provides added value going forward. The partnership process provides opportunity to establish formal plant hybridisation programs.

Setting your breeding stock up is as important as growing your plants. I am lucky enough to have the numbers to allow for three plus plants in each of the various colour groups I wish to hybridize with. One will be the holder of the pods associated with the main cross both way and the others available for additional crosses.



This requires a balance between having or, not having plants available for Orchid Society shows.

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Comments, Conclusions, Recommendations:

- Everyone has their own way of doing things my comment reflects mine. It has to be accepted that there are almost as many ways as there are growers each way providing both success and failure. I simply share my way my results and invite you to try change and the challenges that arise. I am also progressively changing all my Odontoglossum alliance plants into Fern Fibre substrate.
- There is a definite value in the establishment of a partnership approach. Getting the right plants for the growing environment. Getting the right substrate or potting medium. Getting the right Fertilizer and maintaining reasonable record of plant and product performance.
- For some recommendations are an individual thing due to that not all factors are available when the decision is made. Stop; take time to look at your collection, your prize plants. Ask yourself will they grow any better if I continue to treat them the same way as the last growing season or is there any particular part of your orchid culture that warrants improvement. If yes make the change. An alternative approach is to take a sample of a particular genus and apply changes monitoring the results.
- Most importantly you need to enjoy growing share experiences be prepared to learn as I believe we are all learners when it comes to orchids. I know I for one am as such I am happy to share.
- Thanks must go to Greg Barnes of Bio leaf for asking me to participate in the trial of the Fertilizer he promotes.
<https://www.bioleaf.co.nz/> As well as to Alan Ford who had faith that I would provide a fair assessment to the Fern Fibre Substrate trial over a two year period.
<https://www.fernwoodnz.com>



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