

## **MAJOR UPDATE MAY 2020**

### **Organic MycroNutrient (water on casing) manual**

The is an easy to use product which is watered onto the casing during the case run or pinning and between the flushes. This complement is called Organic MycroNutrient and comes in 20L drums or 1000L IBC. Suitable for White and Brown Mushrooms.

#### **1. Storage**

The drums should be stored in clean disinfected environment, out of the sun in a dust and frost free area. If stored incorrectly, you may experience some gassing (CO<sub>2</sub>) in the container (more likely in the IBC) and in which case this should be released periodically if not being used.

Each drum has a batch number that can be used for traceability and we recommend recording this on your growing charts.

There is no expiration date with this product, but we recommend that it is used 6-8 months after day of production, because of settling.

#### **2. Preparation**

All concentrated product must be agitated before use as it separates during storage over a relatively short period. For 20L drums shake hard. For IBC's use a paddle mixer and/or circulation pump to ensure all contents are thoroughly mixed. The following link shows a simple way to do this <https://youtu.be/oVHFuksh2VU>. Please do this for a few minutes. We suggest first time using a mixing paddle to break up any settlement and then simply the circulation pump every time thereafter.



Mixing Paddle

Ensure dispensing tank and pipe work etc is clean and disinfected. Rate of use is between 130 and 260ml/m<sup>2</sup> MycroNutrient on each application.

For starting dose (150ml/m<sup>2</sup>) dilute to produce a 1 L/m<sup>2</sup> watering. For normal dose (250ml/m<sup>2</sup>) dilute to produce a 1.25 - 2L watering.

For example, if you are applying on say 300m<sup>2</sup> area:

This means for starting dose you need 300 x 150ml (0.15L) = 45 litres of MycroNutrient and adding 255L water to this in a tank would give 300 L total i.e 1L/ m<sup>2</sup> watering. In case of normal dose 250ml rate it would be adding 75 litres MycroNutrient to between 300L and 525L water depending on 1.25 or 2L watering.

The diluted mix should be continuously agitated during application onto the casing, use as quickly as possible. Do not store in an undiluted state.



Diluted Tanks for Spraying

Remove fine filters in lines and use a watering tree, overhead or drip irrigation system for application to the casing surface. <https://youtu.be/sH-PMkt2u6M>

Be careful to avoid loss of product through leaching out of the casing or on the floor.



Application by watering tree, overhead or drip irrigation

### **3. When do I apply?**

Normally speaking you would apply water gradually increasing on days 1, 2 and 3. The complement (MycroNutrient) would be applied on the last water (probably day 4) and environment would be gentle to encourage correct temperature in the casing already mentioned to facilitate feeding.

If you do a second ruffle during case run, you can apply just prior to that which is also effective. Only apply in a MAXIMUM OF 1L/m<sup>2</sup> application if last water of case run.

Any watering's around late case run, post ruffle are very sensitive to mycelium. We want mycelium to be strong so it consumes maximum amount of nutrition during this short feeding period.

Also a really good time is at pinning when have pins have formed; 3-3.5 days (pin size range 8-12mm) before picking 1<sup>st</sup> flush.

From a practical point of view it is important that the casing surface structure can absorb the dose within 20 to 30 minutes which allows the pins to dry off properly and prevent the casing remaining at saturation. The casing surface should change from glistening with free water to a dull colour without being able to squeeze water from the surface after about 2 to 3 hours as the application is absorbed into the upper casing zone and normal gaseous exchange is not impeded before the second flush. If puddling does occur then the casing may

be holding too much unabsorbed water already. Under such circumstances then the dose may need to be added before this state occurs. It may also be that the structure needs to be improved at casing or after ruffling to help maintain better granulation and prevent the surface becoming too smooth.

#### **IMPORTANT NOTE**

The key is that we want the MycroNutrient concentrated in the pinning zone, not washed out of the casing into compost!

#### **4. Post application hygiene**

Flush out tank, pipe work and nozzles etc with clean water after use, disinfect with hypochlorite or Sporekill (2%). Leave to dry.

#### **5. Case Run**

Record the temperatures in the casing as well as air and bed temperatures on crop cards. You need to monitor this carefully to ensure feeding temperature is reached and for how long. Casing temperature is not the same as compost and is influenced by cold air temperatures and watering.

The optimum temperature for feeding is 23C on the interface for a minimum of 2-3 days. This normally happens in last few days of case run and first day of airing. THE LONGER FEEDING TIME THE BETTER.

Avoid pushing compost temperatures too high (27C +) in order to bring up the interface or casing temperature.

During late stages of pinning is also great feeding time as conditions are warm and a lot of metabolic activity is occurring in the mushroom.

#### **6. Chemicals / Nematodes**

We advise keeping these away from last watering of case run. Nematodes should go in earlier in case run the day before last watering's. Fungicides eg Sporgon, Vivando etc will knock back mycelium which is counter active against feeding mycelium if applied close together so bring this back a bit earlier in case run. Ideally MycroNutrient complement should go in last water or better still at pinning at standard rate and should only in 1L/m<sup>2</sup> maximum.

#### **7. Post 1<sup>st</sup> flush**

Because the yield may be higher on 1<sup>st</sup> flush and how much moisture you lose from the casing, you may need to adjust water in between 1<sup>st</sup> and 2<sup>nd</sup> flush to take account of this. This is where 2<sup>nd</sup> application is made of 250ml/ m<sup>2</sup> in a 1L watering in same way as previous application.

When making this second dose it is important to be well advanced with watering up the casing between the flushes. We normally aim to have around 70/80% of the water we plan to add in the casing before the dose. This dose can be the final or penultimate watering. It is advantageous to add a light wash off watering after the application to rinse the growing pin set/stragglers and ensure all the MycroNutrient complement is in the upper zone of the casing layer for feeding/ uptake.

The size of pins should be around 7-10mm for the second dose should be a little smaller than the sizing of the first dose, make sure absorption is immediate and growing pins do not sit in water. This is an important feature for you to watch and adjust as you develop best practice for the farm and your picking profile but the principle remains to apply later to avoid diluting the dose and pushing it towards the bottom of the casing layer.



2<sup>nd</sup> flush quality from Mycronutrient

## 8. Extra applications

Some growers are reporting successes with repeated applications of 150-250ml/m<sup>2</sup> after 2<sup>nd</sup> flush and even 3<sup>rd</sup> flushes and this has been verified by recent independent trials from Ralph Nobel (available on request).

### **IMPORTANT NOTE**

We have the impression from the field that when there are shortages/delays of nutrition coming from the compost, MycroNutrient is very good at making up the differences. It appears that higher dosing's with later flushes when compost is running out of nutrition and in low fill weight situations (less than 85 kg/m<sup>2</sup>).

## 9. Dosing rate

It is important to note that 150ml + 250ml/m<sup>2</sup> during crop is the minimum rate. Results depend on feeding uptake and therefore relate to growing conditions and techniques. If you see the improvement in 1<sup>st</sup> flush, but less obvious in 2<sup>nd</sup> flush and 3<sup>rd</sup>, it will most likely be due to feeding uptake not enough dose or washing away from the surface.

## 10. Cleaning off mushrooms

For growers with brown mushrooms and for situations where watering is made on large mushrooms, it would prudent to give a small watering (1/2 L) to wash off the calcium suspension off the caps.

## 11. What should I be looking for?

The first thing you are most likely to observe is mushrooms staying harder on last days of pick to the end of the flushes. Less light veiled mushrooms in 2<sup>nd</sup> and 3<sup>rd</sup> flushes. These mean extended picking in flushes which will help picking management. You may not always see an increase on 1<sup>st</sup> flush and that is normal ie there is enough nutrition already there for that flush in most situations. It is the 2<sup>nd</sup> and 3<sup>rd</sup> flushes which are the challenge, hence the skewing of applications post 1<sup>st</sup> flush. The boost in production will be coming from heavier better quality mushrooms.

*09 May 2020 Updated*