

May 2023

INSTRUCTIONS FOR ORGANIC MYCRONUTRIENT

This is an easy to use product which is watered onto the casing during the case run or pinning and between the flushes. It 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.

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

There is an expiration date of 9-10 months 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.

We suggest the first time with a new IBC using a mixing paddle to break up any settlement and then simply the circulation pump or wooden lath every time thereafter.

The following link shows a simple way to do this <https://youtu.be/oVHFuksh2VU>. Please do this for 10-15 minutes each time you use.



Mixing Paddle

Ensure dispensing tank and pipe work etc is clean and disinfected.

Rate of use are given on Application Rates & Timing Document and depends on whether you are doing 2 or 3 flushes and doing 2 or 3 applications.

For example, if you are applying 120ml/m² on say 300m² area:

This means for starting dose you need 300 x 120ml (0.12L) = 36 litres of MycroNutrient and adding +/- 250L water to this in a tank for a 1 L/ m² watering or +/- 400L for a 1.5 L/ m² watering. Then apply 0.5 -1 L/ m² wash off 30-60 minutes after application.

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 in case run you would apply water gradually increasing on days 1, 2 and 3. The supplement (MycroNutrient) would be applied on the last or penultimate water (probably day 4) with wash off, prior to recovery.

If you do a second ruffle during case run, you can apply just prior or after ruffle which is also very effective.

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.

Application rates and Timing information are given in separate document and is dependent of number of flushes you take and the number of applications made and when they are made. One of the most important times is at early pinning (day 10/11 typically) when pins have just formed between 'starring' and 5-8mm maximum. This is better than applying in case run. Wash off is not so critical with pinning watering because it is at a lower dosage rate.

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 and top part of the casing, just below the pins and not washed out into the 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 is useful. You should 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 in casing or on the interface for a minimum of 2-3 days. This normally happens from start of 'recovery' through first days 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 early 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 have tested MycroNutrient in presence of nematodes and they do not affect the efficacy of them. Full report available on request. Fungicides eg Sporgon, Vivando etc will knock back mycelium which is counter active against feeding mycelium if applied close together. In this case better to apply MycroNutrient on penultimate water (with wash off) first (can be previous day) and do chemical water last (hours later or on following day) to give a gap and not change any variables.

7. Post 1st flush

Because the yield may be higher on 1st flush and how much moisture you lose from the casing, you may need to adjust water in between 1st and 2nd flush to take account of this. Application rates and Timing information are given in separate document and is dependent of number of flushes you take and the number of applications made and when they are made.

When making this application at the end of the watering period, 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 is in the upper zone of the casing layer for feeding/ uptake.

The size of pins should be less than 5-8mm, 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 except in case of short 2 flush cycles.



2nd flush quality from MycroNutrient

8. Extra applications

Some growers are reporting successes with repeated applications of 60-120ml/m² after 2nd flush and even 3rd flushes and this has been verified by recent independent trials from Ralph Noble (available on request).

9. Dosing rates

Results depend on feeding uptake and therefore relate to growing conditions and techniques. If you see the improvement in 1st flush, but less obvious in 2nd flush and 3rd, it will most likely be due to feeding uptake ie not enough dose and/or washing away from the surface.

10. Cleaning off mushrooms

For growers with brown mushrooms and for situations where watering is made on pins or mushrooms, it is prudent to give a small watering ($\frac{1}{2}$ - 1 L/ m²) 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 2nd and 3rd flushes. These mean extended picking in flushes which will help picking management. You may not always see an increase on 1st flush and that is normal ie there is enough nutrition already there for that flush in most situations. It is the 2nd and 3rd flushes which are the challenge. The applications are skewed to the early stages as it takes a little time to ensure it gets into the mycelium and up to the growing mushroom. The boost in production will be coming from heavier better quality mushrooms with higher dry matter content.

12. 2 or 3 flushes

Obviously with 2 flushes, the response required will be in the 1st and 2nd flushes. In this regard the 2 dose pattern is best, but either way, the application between the 1st and 2nd flush should be the 1st one after stripping 1st to ensure enough time to be used by the mycelium to influence 2nd flush.

IMPORTANT NOTE

From scientific data and practical growing we know there are shortages/delays of nutrition coming from the compost at certain crop stages. MycroNutrient is very good at making up the differences in low fill weight situations (less than 65-80 kg/m²) and when compost is running out of nutrition in later stages. However, it is important that MycroNutrient has been applied in early stages so the mycelium is primed to respond, recognise and utilise the later applications.

Also an important point to be aware of with MycroNutrient is that first and foremost it stimulates the mushroom mycelium to extract more nutrition from the compost and any traditional supplement that may be present. Then additional micronutrients ensure that there is always enough of what the mushroom needs if they are not already present for each flush.

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