

WATER CHANGES & WHEN TO MAKE THEM

1. In the Spring - After Winter

It is always wise to do a gradual partial water change of approx. 20-40%. This is because during the winter months some of the ponds natural bacteria will die. Also as the water cools the rate of bacteria reproduction slows. Therefore the water will have a heavier carbon loading than normal which is not good for aquatic life. At this stage the addition of Hydra Bio Aquatic Boost is extremely beneficial.

2. Before Using a Pond Treatment

If you have used a different pond treatment in the last 6 months it is always wise to do a partial water change (10-20%) before using a new treatment. This is because different manufactures treatments have:

- Different chemical formulas that may not be compatible with the product you are about to use.
- Some products, even so called natural biological products contain metals such as zinc, copper, aluminium etc. These metals can build-up over a period of time in your pond, which will be detrimental to the health of your fish.
- They do not evaporate, so you can only remove them via water changes.

3. During Green Water/Blanket Weed Treatment

When using Hydra Quartz, Hydra ST 703, Hydra Crystal or Hydra Pond Clear Plus, if a further treatment is required, carry out a 10-20% water change before re-treating.

Doing the Water Change

Remember, do not change more than 20% every other day, this is to give fish time to acclimatise to different water conditions and temperatures.

PRODUCT INFORMATION

Important Dosage information

Ensure that you use the correct amount of product to the volume of water in your pond, use digital scales if adding more than 4 scoops, measuring spoon weights are only approximate amounts. To calculate water volume in your pond, see Pond Volume Calculator on www.hydra-aqua.com.

Minimum Water Temperatures

All water treatments require a minimum water temperature of 10°C (50°F) to be effective. Exception is Hydra LT Extreme Winter Bacteria, min temp 1°C (34°F).

Best Time To Apply Green Water & Blanket Weed Remover Treatments

As with all pond treatment products pick coolest time of day to use. at coolest time of day. DO NOT USE on very hot days. Ensure your pond has adequate dissolved oxygen. Remove dead algae/blanket weed as it occurs.

Filter Systems/Sponges

Always clean your filter system/Sponges before starting, during and completion of any green water pond treatment. Ensure pond sponges are not worn as this will allow dead algae back through into the pond. If worn either replace sponges or fit a *Hydra Pond Filter Blanket*.

To Check if Pond Filter is Removing Sediment from Pond

NB. Before retreating always take a sample of your pond water into a clear glass to check that it is in fact green and not simply suffering from suspended solids. If after treatment water does not clear, take a sample of pond water in a clear glass and a sample of water from the filter return into separate glasses. Leave them both to stand for 24 hours. There should be a difference between the pond water in the pond and the water from the filter return (i.e. very little sediment).

If after 24 hours the pond water sample is clear and sediment is present at bottom of glass this indicates that your filter sponges either need replacing or are not fine enough to collect sediment. Simply add a layer of *Hydra Pond Filter Blanket* to your filter system this blanket will remove the very fine suspension.

Which Order to Use Hydra Products?

When treating your pond with multiple Hydra Aquatic products do not mix products but use the products in the following order:
1) Fish Medicines (2) Blanket Weed Treatments (3) Green Water treatments (4) Water Dyes (5) Bio Aquatic Bacteria Boost or LT Extreme (6) Phos-Gone (7) Silt-Less.

Always leave at least 5 days between adding different treatments to ensure the previous treatment has been completely exhausted. Only if using Hydra Quartz, Hydra ST 703 Hydra Pond Clear Plus and Hydra Crystal in the same pond do a 10-20% water change after using the first Hydra product.

No need to do a water change when adding other products not listed above.

In Lakes because the volume of water the buffering capacity is much greater there is no need to do water changes.

IMPORTANT: ALL PRODUCTS - Heavy Scum Layer on Water Surface

As with all pond treatments **USE ONLY** when you can observe fish - in the unlikely event of an adverse reaction you will be able to resolve the issue.

Should you have a heavy scum layer on the surface and the fish are showing any signs of distress, remove this scum and agitate the surface as much as possible.

Either run all pumps including air pumps, raise air stones (if available) closer to the surface, play hose from height onto water surface to break surface tension of water.

GLASS TEST

Green Water Treatments Only - Hydra Crystal & Hydra Pond Clear Plus Only

Do Glass Test Before Applying Treatment to Pond

Take a sample of water from your pond into a clear glass (1/2 pint). Add a pinch of Hydra Product (as in small pinch of salt) to glass and stir with spoon. The water may initially go cloudy, then you will start to see clumps forming as it pulls the green algae out of the water (within 30 minutes).

Leave overnight and depending on product used you should be left either with an algae sediment at the top or bottom of the glass with the remainder of the water clear (if you use more than a small pinch of Crystal the water will go brown). Repeat glass test using smaller pinch.

N.B. If for any reason the above does not happen or the water remains green and does not clear, please speak to our Technical Helpline on 01908-265889 before using the product in your pond.

Oxygen Requirements - Important Information

Assess your pond before using any water treatment - check levels of oxygen, ammonia, nitrite, nitrate, pH, general hardness etc. Many fish fatalities are due to lack of oxygen in the water, for example koi need 6 ppm dissolved oxygen at rest and higher levels when active, most ponds require 8-10 ppm dissolved oxygen.

In all ponds, the biological filter and plants demand dissolved oxygen first and the fish survive on the residue, in most ponds supplementary aeration in the form of an air pump/air stones is vital to fish welfare.

Any water treatment can lower dissolved oxygen levels and water conditions may decrease it still further.

HOT WEATHER CAUTION

The higher the water temperature is the lower the level of dissolved oxygen present therefore in warm summer months adequate aeration is essential. Anything green in your pond is producing oxygen by photosynthesis during daylight hours.

Water Temperature / DO (Maximum Dissolved Oxygen Table)

Temp °C	DO (mg/L)	Temp °C	DO (mg/L)	Temp °C	DO (mg/L)	Temp °C	DO (mg/L)
0	14.60	10	11.27	20	9.07	30	7.54
2	13.81	12	10.76	22	8.72	32	7.28
4	13.09	14	10.29	24	8.40	34	7.05
6	12.43	16	9.85	26	8.09	36	6.82
8	11.83	18	9.45	28	7.81	38	6.61

▪ The factors below all affect pond water oxygen levels.

- Do not shut pond pumps and aeration devices off at night. Oxygen levels, derived from photosynthesis rise during the day when sunlight shines on plants and green algae in the water. Then at night oxygen levels drop because pond oxygenating plants and algae are not producing oxygen but consuming it, as well as the fish and bacteria, therefore do not use pond treatments in the evening or early morning just after dawn.
- Muggy, overcast, stormy summer days often precipitate oxygen depletions. During cloudy weather, the intensity of light reaching surface waters is greatly diminished, resulting in a marked decrease in oxygen production from photosynthesis. Oxygen consumption, however, remains unchanged. This results in a net loss of oxygen over each 24-hour period.
- The recent use of another pond product increases the risk of an oxygen deficit especially medical treatments and water de-chlorinators (see water change information).
- Fish species vary with the volume of dissolved oxygen they need for survival and some species such as Golden Orf have a much greater requirement. Generally the larger the fish the more oxygen it needs.
- A waterfall or fountain moves the water but fails to produce the minute air bubbles that provide oxygen. An air pump (sized for your water volume) which adds oxygen via air stones/diffusers is recommended for all ponds.
- Test kits are available from most aquatic outlets to test water parameters.
- If despite precautions, fish rise to the surface and gasp - use a hosepipe set on fine spray to introduce oxygenated water temporarily while an air pump is immediately installed and initiate partial water change.