VIRESCO (UK)LTD

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TOPPING UP - HOW NITRATE LEVELS IN RAINWATER AND TAPWATER CAN AFFECT YOUR POND

Feature in "Koi Carp" Magazine – July 2007

Viresco™ products remove nitrate in pond and aquarium water. Nitrate is the key nutrient ingredient for the growth of blanketweed and other algae. When nitrate is reduced to zero, these algae will die of starvation.

Having used our Viresco™ product to keep their ponds clear of blanketweed, some of our customers have reported that blanketweed has grown back with a vengeance after a rainstorm. This is most likely due to acid rain and the resulting nitrate in rainwater.

Acid rain arises from two types of acid-forming materials. One is from sulphur dioxide that rises as a by-product of industrial processes and from the burning of fossil fuels. The second acid-forming group of gases that rise into the atmosphere are the nitrogen oxides. When these oxides (NOx) are dissolved in rainwater high in the atmosphere, mainly nitric acid (HNO_3) is produced. This dilute acid falls to the ground when it rains and produces nitrate in ponds.

The website www.naei.org.uk of the National Atmospheric Emissions Inventory (NAEI) gives information about the amounts and sources of various atmospheric pollutants, including nitrogen oxides and ammonia.

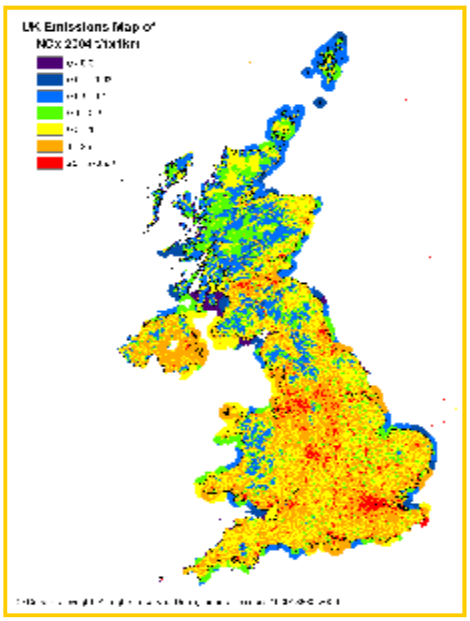
Shown alongside is a map of the UK giving emissions of nitrogen oxides (NO and NO_2) for 2004 (tonnes per square kilometre).

A major source of these pollutants is road transport. Areas of major roads and urban conurbations show up in red as the highest for nitrogen oxide emissions. The lowest regions for these emissions are shown in blue or purple. As one might expect, these areas are typically in the north west of Scotland and along rural coastlines.

These major variations in nitrogen oxides and ammonia emissions across different areas of the country must make a difference in the way koi and other ponds are managed, in particular in relation to blanketweed control. Most pondkeepers know that the level of nitrate in tapwater can be high. However, do they know that ammonia and nitrate can fall out of the sky in rain? Evidence is there to show a sudden burst of algae growth can occur shortly after a downfall of rain.

Pondkeepers can access information on emissions in their region by going to: www.naei.org.uk/mapping/mapping_2004.php and entering their postcode.

When considering whether tapwater or rainwater should be used for topping up ponds, the recommendation is the pondkeeper should check particularly for nitrate in both types of water sources and, if possible, use the one with the lowest content. Better still, if they practice water changes to simply lower the nitrate level in the pondwater, then they need not change large volumes of water because our Viresco™ pond products will take the nitrate level down to zero and hold it there. Once nitrate is removed, blanketweed and other algae stop growing.



Think Nitrate

Your rainwater may have enough nitrate to affect your pond and subsequent algae/blanket weed growth. Check your emissions at www.naei.org.uk

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