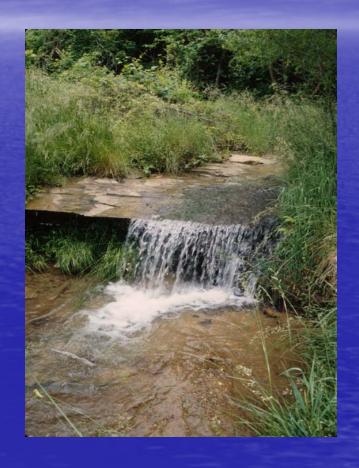
Liming Ponds to Improve Total Alkalinity in Water

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Acid Soils

- Are present in much of southern, eastern and western Kentucky
- Low pH conditions may exist even when limestone formations are present



Total Alkalinity in Water – is the ability of the water to buffer acids and reach a certain pH

 Water will be influenced by its surrounding geology and soil types.

Acid soils = poorly buffered water





Submit pond soil sample to CES office

- Take pond mud samples from 3-6 locations per acre from the pond basin, or 10 samples from small ponds.
- Mix samples together and dry
- Pulverize soil and put into a soil sample box marked pond mud sample
- Or ask for an alfalfa liming recommendation

Most important components of total alkalinity for fish production

Carbonates CO₃

Bicarbonates HCO₃

Hydroxides OH-

Liming will:

- Increase total alkalinity by adding Calcium Carbonate (CaCo₃) and dolomite CaMg(CO₃)₂
- Buffers water pH to 6.5 9.0
- Total Alkalinity >20 mg/L
- Ideally, 50 150 mg/L
- Increases water hardness (Ca, Mg)

Adding Agricultural Limestone

- Maintain soil pH to 7.0
- Add in tons per acre, fall is best
- Add ¼ initial rate every year thereafter
- Easier to add and disk lime into empty, dry ponds
- It is difficult to add too much aglime!
- May come in large quantities!
- Cost \$8 20 per ton,
- Quality varies between quarries!

Lime quality

- Particle size: <.0098" or .025 cm is desirable
- 90% should pass a #10 sieve and 35% should pass a #50 sieve
- Neutralizing value of at least 70%,
- 90-100% is preferable

Do not use – Too hot!

- Hydrated lime Ca(OH)₂ (136%)
- Burned lime or quicklime CaO (179%)

• May raise pond pH too fast and provide only short term increases in alkalinity!