

## BLUE/GREEN ALGAE WHAT IS IT?

CYANOBACTERIA-FRESH WATER, CAN BE TOXIC  
LOOKS LIKE SPILLED PAINT-B/G, GREEN, BROWN, PURPLE, RED  
THICK MAT OF FOAM ALONG SHORELINE  
CAN BE BLOBS FLOATING AT OR BELOW WATER SURFACE



## CAUSES OF BLUE/GREEN ALGAE

- HIGH PHOSPHORUS
- HIGH NITROGEN
- WARMING WATER TEMPERATURES

## WHAT IT IS NOT!



## CYANOBACTERIA CONCERNS-NON TOXIC

### Human Reactions

Runny nose

Rashes

Skin irritations

Sore throat

## CYANOBACTERIA-CYANOTOXINS

### Humans

Severe stomach issues, vomiting and diarrhea

Liver damage, numb limbs

### Pets & Livestock

Staggering, weakness

Difficulty breathing

Convulsions, vomiting

Death

WARNING-KDHE AUGUST 21, 2020

MILFORD LAKE, GEARY COUNTY, GATHERING POND,  
 GEARY COUNTY, CAMP HAWK LAKE, HARVEY COUNTY,  
 YATES CENTER KIDS' FISHING POND, WOODSON COUNTY  
 WATCH-BROWN STATE FISHING LAKE, FORD STATE FISHING  
 LAKE, MILFORD LAKE ZONES A AND B, GEARY  
 COUNTY, DELAWARE RIVER JEFFERSON COUNTY, PERRY  
 LAKE, JEFFERSON COUNTY  
 LOVEWELL RESERVOIR, JEWELL COUNTY, SOUTH LAKE,  
 JOHNSON COUNTY, MARAIS DES CYGNES WILDLIFE AREA,  
 LINN COUNTY, MARION COUNTY LAKE, MELVERN OUTLET  
 POND, OSAGE COUNTY  
 AGRA LAKE, PHILLIPS COUNTY, WEBSTER RESERVOIR,  
 ROOKS COUNTY

# 21ST SEPTEMBER 2020 DEATHS OF HUNDREDS OF ELEPHANTS MAY HAVE BEEN CAUSE BY TOXIC ALGAE BY PRESS ASSOCIATION 2021

ALGAE BLOOMS CAUSING CANADIAN LIVESTOCK DEATHS

TAGS: [DISASTER PASTURE](#)

DOZENS OF LIVESTOCK HAVE DIED NEAR SASKATCHEWAN, CANADA DUE TO BLUE-GREEN ALGAE BLOOMS. ONE BISON  
RANCHER LOST 40 ANIMALS--- PRIMARILY BULLS AND HEAVIER MILKING FEMALES, REPORTS THE SASKATOON STARPHOENIX

[JOEROYBAL 1](#) | AUG 24, 2007

Blue-green Algae: Keeping Pets and Livestock Safe this Summer

August 21, 2019 by [Mallory Pfeifer](#)

## TOXIC BLOOM CANNOT BE SEEN

Only detected by laboratory test

KSU Vet Diagnostic Lab- \$22.00

Contact your local Extension agent or Veterinarian

## BLUE/GREEN- KDHE JAR TEST-INDICATOR B/G PRESENCE

[www.kdheks.gov](http://www.kdheks.gov)



## BLUE-GREEN ALGAE POND PROJECT

Cooperating with KDHE-Bureau of Water  
KSU Vet Diagnostic Lab  
KSRE Water Quality Specialists  
Meadowlark Extension District

KDHE- HAB MITIGATION PILOT PROJECT

WORKING WITH PUBLIC WATER-SHAWNEE COUNTY

CORPS OF ENGINEERS- MELVERN LAKE SWIM POND

KSRE-KSVDL-WQS



## BARLEY STRAW LOCATED!

Barley straw was acquired from Simon Sheep Farm Quinter Kansas. They delivered two flatbed trailers To Eastern Kansas for the project.





## LOCATED PONDS WITH PREVIOUS BLUE/GREEN ALGAE

Dosing rate 7 bales/acre of water

Staked down around the edge of pond

At least 20 feet apart

At least half submerged



## KDHE BASELINE WATER TESTING

Water was retested every month for:

Nutrient Profile

Toxins-Microcystins, Nodularins, Cylindraspermopsis and Anatoxin-a

Total Chlorophyll and Algal taxonomy



## BALES INSTALLED PRIOR TO BLOOM

Spaced about 20 feet apart

Using two stakes

$\frac{1}{2}$  to  $\frac{2}{3}$  of the bale in the water

Prior to bloom season: prevention, not intervention



## WHAT WILL HAPPEN?

Bales will decompose and release polyphenols and other chemicals

These compounds will not kill existing blooms, but they can suppress growth

Factors affecting success: water turnover (dilution), algal species present, other factors – we will find out!





## ABOUT THE PONDS

Ponds ranged from ½ acre to 3 acres  
 Management on all the ponds differed  
 Ponds used for recreation and/or livestock water  
 Three sites have a control pond to compare to  
 Ponds located in Jackson, Jefferson, Nemaha,  
 Shawnee and Greenwood County-8 ponds in total  
 Good complement to the ponds/lakes chosen by  
 other partners (larger and/or urban water bodies)



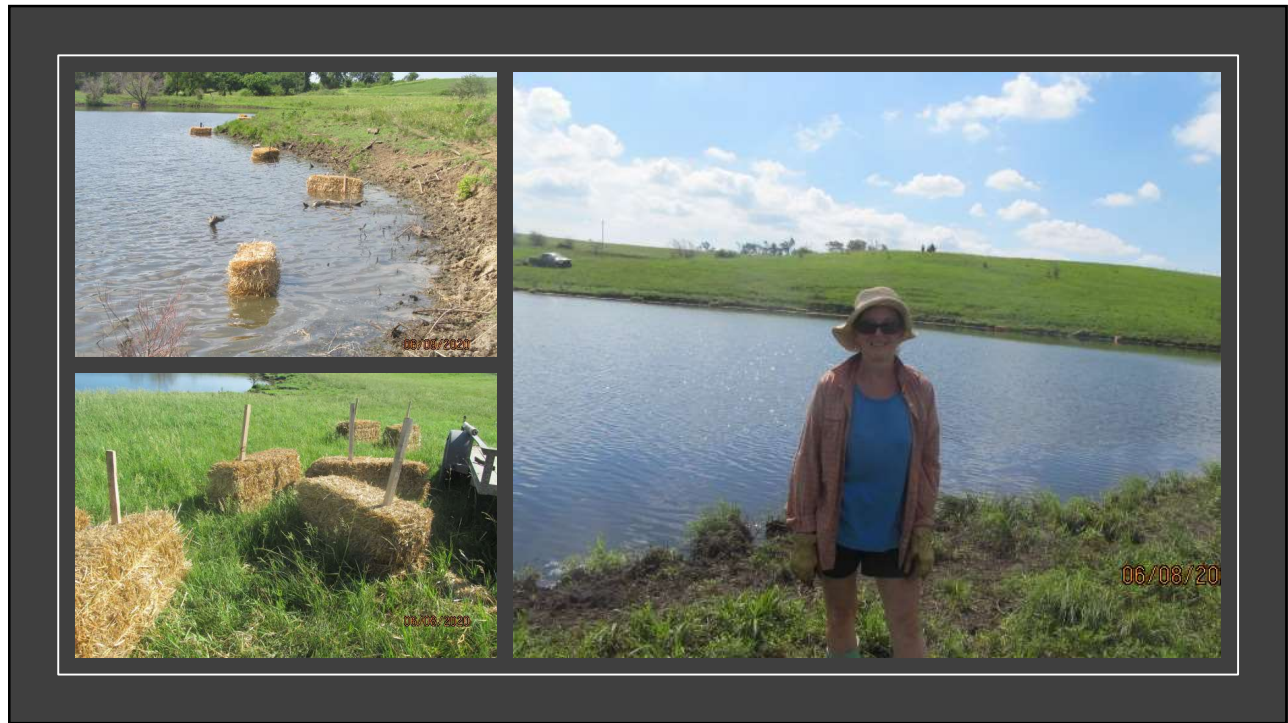
## MANY THANKS TO THE CREW!

Elizabeth Smith	Will Boyer
William Blair	Jeff Davidson
Patrick Olson	Pond Owners
Dr Steve Ensley	
Dr Scott Fritz	



WATER TESTED EVERY MONTH





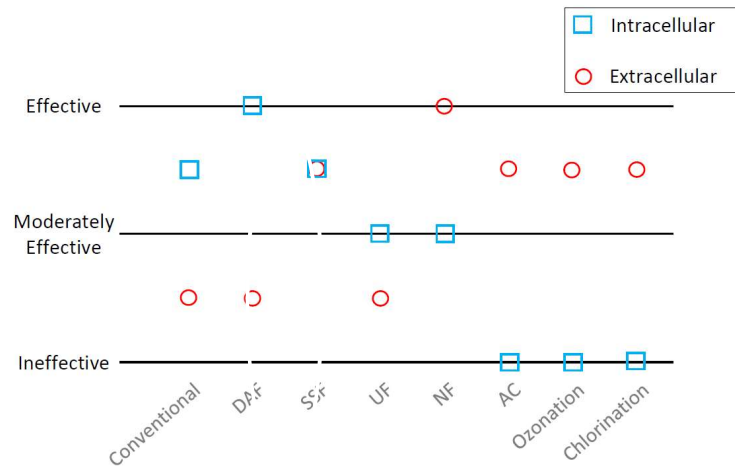




## RECENT HAB CONFERENCE

► OHIO State

### Cyanotoxin Removal Efficiencies



After Colling et al., 2014

## SUMMER 2021

Repeating Pond Mitigation Project

Nine ponds have been located in 5 counties

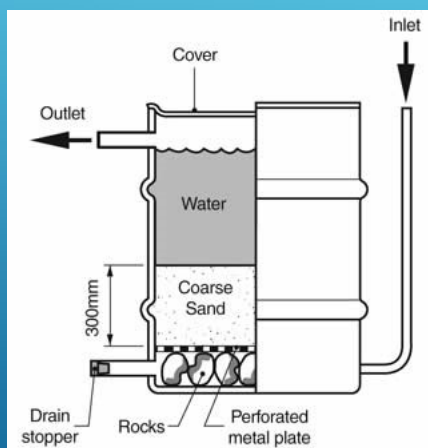
Received a grant from KCARE for Slow Sand Filters

Applying for KDA Conservation On Farm Field projects

## FINALIZE DATA AFTER OCTOBER

REPEAT NEXT YEAR  
LOCAL PRODUCERS LOCATED

## SLOW SAND FILTERS







SCHMUTZDECKE- BIOLOGICAL LAYER



JODY HOLTHAUS  
MEADOWLARK DISTRICT  
LIVESTOCK-NATURAL RESOURCES

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