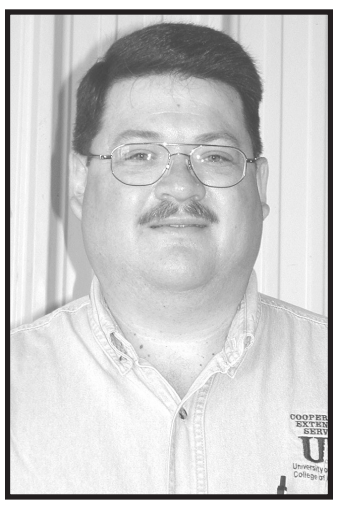
# Flooding Impacts Farms & Gardens



**Eric Baker**
**Estill County Extension Agent for Agriculture & Natural Resources**

Weeks of rains and waterlogged soils have impacted crops and gardens. Rains have saturated soils and pushed air out of the plant's root zone. Some plants can take low oxygen levels in the root zone while others show signs of definite stress. In this article, I will discuss some impacts on soybeans, field corn, and vegetable gardens.

For soybeans, the lack of sufficient oxygen in the soil can lead to slowed activity of the Bradyrhizobium japonicum (nitrogen-fixing bacteria) which leads to reduced nitrogen and uptake. Extended periods of saturated soils will kill some of the roots and some of the nitrogen-fixing bacteria. Both will rebound quickly once sunshine and air return to the system.

Most of the soybeans in Kentucky are flowering, so the rainfall we get now helps to build the size of plant and structures to produce pods and seeds. Yellow soybean plants will likely lose some flowers, but even a healthy soybean plant will lose about half of its flowers. If the sun comes out soon, these plants have plenty of time to build more flowers and pods.

Rainfall and water stress during soybean seed fill is our most critical period for yield determination. The current saturated conditions likely will have very little impact on final yields. (All of these comments are based on the premise that the plants survive. Soybeans completely flooded and choking out is a completely different scenario.) While we need some sunshine now to help the plants recover, we need to continue getting timely rains to help this crop yield well.

The wet weather conditions are setting up quite well for soybean disease infestations later. This is a season where good field scouting is absolutely necessary to make good decisions on disease management.

Corn survival after flooding depends on the duration of the flood and the soil temperature during the flood. When soil temperatures are greater than 70 degrees F, corn will survive about 24 hours of submersion, but survival can increase up to four days at cooler soil temperatures. Even with warm temperatures, water over the top of corn for only a few hours will do little harm to the crop.

Corn that was submerged and survived may be yellow and/or stunted. These symptoms are likely due to an inability to take up nitrogen under saturated conditions. These symptoms will continue even after water has receded because the soil will remain saturated. The time required for the soil to dry out and allow oxygen back into the root zone will determine the rate of crop recovery. If mud and other debris stay on the corn leaves, recovery can be further delayed. If water rises above the ear of corn, the grain should be analyzed for toxins before feeding to livestock.

Vegetable garden plants vary in their response to flooding. Tomatoes, egg-plants, and cucurbits may wilt after flooding or saturation. Unless submerged for a long period, many plants will recover as soils dry out.

Fresh fruits and vegetables that have been partially or completely submerged in flood water or that might have come in contact with sewage-contaminated flood waters are not safe to consume. There is a high health risk of humans developing disease from consuming these products. This would include vegetables that are ready to eat in our gardens now like lettuce, radishes, onion, garlic, beets, cabbage, and carrots.

Vegetables that are eaten as stems or leaves, such as asparagus, rhubarb, Swiss chard and herbs would also be considered unsafe if flooded. Perennial vegetable plants, such as asparagus and rhubarb, can be kept for production next year. Do not eat them this season, if they came in contact with contaminated flood waters.

**(Article sources: UK Extension specialists Chad Lee, Sandra Bastin, and John Strang)**

For more information, contact the Estill County Cooperative Extension Service at 723-4557.

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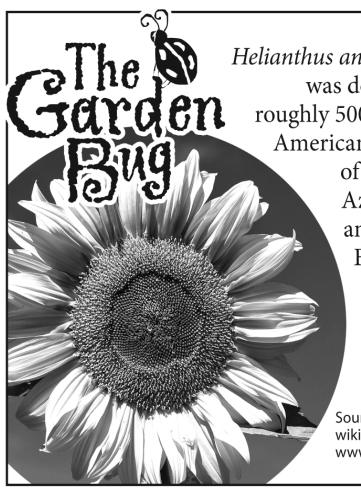
## The Garden Bug



*Helianthus annuus*, the common **sunflower**, was domesticated in North America roughly 5000 years ago. Many indigenous American peoples used it as the symbol of their solar deity, including the Aztecs and the Otomi of Mexico and the Incas in South America. Early Spanish explorers carried its seeds back to Europe, and by the early 1800s Russian farmers were growing over 2 million acres of sunflower.

Sources:
wikipedia.org/wiki/Helianthus_annuus
www.sunflowernsa.com

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## Stickeler's Puzzle

STICKELERS [sic].
by Terry Stickels

**One of the following animals does not belong in this group. Which one is it?**

1. koala bear
2. kangaroo
3. wombat
4. possum
5. anteater

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**Stickeler's Answer on Page 11**

## Wishing Well®

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 6 | 4 | 3 | 4 | 5 | 8 | 6 | 4 | 7 | 2 | 8 | 3 |
| A | L | E | W | N | A | N | O | D | B | A | E | I |
| 7 | 2 | 5 | 4 | 6 | 5 | 4 | 2 | 8 | 4 | 2 | 3 | 4 |
| U | T | S | L | V | U | E | E | W | S | L | S | S |
| 7 | 2 | 5 | 4 | 8 | 6 | 3 | 5 | 3 | 8 | 2 | 4 | 2 |
| I | E | C | S | B | I | D | C | O | E | P | U | H |
| 3 | 7 | 6 | 3 | 7 | 5 | 4 | 5 | 8 | 2 | 4 | 5 | 4 |
| M | L | N | I | D | E | C | S | L | O | C | S | E |
| 2 | 5 | 2 | 6 | 4 | 6 | 8 | 3 | 2 | 8 | 7 | 5 | 7 |
| N | F | E | G | S | F | O | S | C | V | B | U | R |
| 6 | 5 | 8 | 4 | 6 | 2 | 5 | 2 | 7 | 3 | 6 | 5 | 8 |
| R | L | E | S | I | A | D | L | I | Y | E | A | D |
| 5 | 3 | 6 | 3 | 6 | 2 | 3 | 7 | 6 | 7 | 3 | 7 | 7 |
| Y | O | N | U | D | L | R | D | S | G | S | E | S |

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## CryptoQuip

This is a simple substitution cipher in which each letter used stands for another. If you think that X equals O, it will equal O throughout the puzzle. Solution is accomplished by trial and error.

Clue: **J** equals **L**

KY WLC AZQ RCBBZO

KORHKGMQKLO QL SGKQZ

HZGYZFQ SLGBR YLG M RLOA,

LOZ EKAIQ FMJJ QIMQ M

JWGKFMJ EKGMFJZ.

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## CryptoQuote

**AXYDLBAAXR**
is **LONGFELLOW**

One letter stands for another. In this sample, **A** is used for the three L's, **X** for the two O's, etc. Single letters, apostrophes, the length and formation of the words are all hints. Each week the code letters are different.

TJFS OR LKGV VCMJFCSOCH

SJFC SJV PKOMVR KQ

AKBCH YVKYNV TJVC AKB

MFC'S JVFG TJFS SJVA RFA?

— NKHFC Y. RLOSJ

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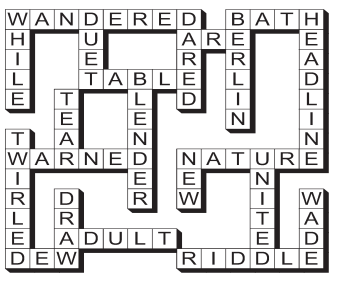
# Puzzle Answers

**July 22, 2015**

## Puzzles4Kids

Answer



## FEAR & KNOT

answer

## Letter Box

Solution

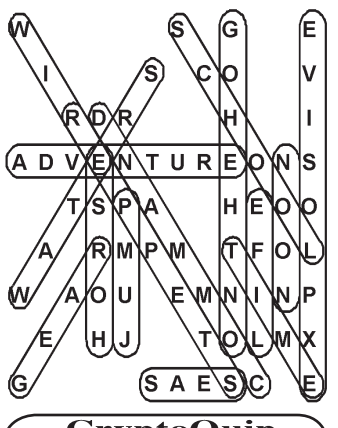
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| B | E | D | O | N | L | G | I | M |
| G | L | I | M | E | D | B | N | O |
| M | N | O | G | I | B | E | D | L |
| D | B | E | N | G | O | M | L | I |
| O | G | L | I | D | M | N | B | E |
| N | I | M | B | L | E | D | O | G |
| E | D | B | L | M | I | O | G | N |
| I | M | G | D | O | N | L | E | B |
| L | O | N | E | B | G | I | M | D |

## Even Exchange

answers

1. Frost, Front
2. Loyal, Local
3. Bottle, Battle
4. Dodger, Lodger
5. Slang, Sling
6. Track, Trace
7. Pallet, Pellet
8. Sword, Swore
9. Retort, Resort
10. Brink, Bring

## HIGH —



## Weekly SUDOKU

Answer

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 7 | 5 | 8 | 4 | 2 | 9 | 6 |
| 4 | 5 | 9 | 6 | 1 | 2 | 8 | 7 | 3 |
| 2 | 8 | 6 | 3 | 7 | 9 | 5 | 1 | 4 |
| 7 | 2 | 8 | 1 | 6 | 5 | 4 | 3 | 9 |
| 5 | 4 | 1 | 7 | 9 | 3 | 6 | 8 | 2 |
| 9 | 6 | 3 | 4 | 2 | 8 | 1 | 5 | 7 |
| 6 | 9 | 5 | 8 | 4 | 7 | 3 | 2 | 1 |
| 3 | 1 | 2 | 9 | 5 | 6 | 7 | 4 | 8 |
| 8 | 7 | 4 | 2 | 3 | 1 | 9 | 6 | 5 |

## CryptoQuip

answer

If you get sudden inspiration to write perfect words for a song, one might call that a lyrical miracle.

## CryptoQuote

answer

What is more enchanting than the voices of young people when you can't hear what they say?
— Logan P. Smith

## King Crossword

*Answers*

**Solution time: 21 mins.**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | O | L | T | ■ | M | E | T | ■ | D | O | T | H |
| E | R | I | E | ■ | O | R | E | ■ | E | U | R | O |
| A | S | E | A | ■ | M | A | N | D | A | T | E | S |
| M | O | U | S | S | E | ■ | T | O | F | F | E | E |
| ■ | ■ | ■ | E | O | N | S | ■ | E | E | R | ■ | ■ |
| M | I | G | R | A | T | E | S | ■ | N | O | R | M |
| P | I | E | ■ | K | U | N | I | S | ■ | N | O | R |
| H | I | T | S | ■ | M | A | G | N | A | T | E | S |
| ■ | ■ | ■ | R | A | T | ■ | T | H | O | R | ■ | ■ |
| A | B | I | D | E | S | ■ | T | W | O | B | I | T |
| M | E | D | I | A | T | E | S | ■ | U | R | S | A |
| A | M | O | S | ■ | O | W | E | ■ | N | A | I | L |
| D | E | F | T | ■ | W | E | E | ■ | D | E | S | K |

## Bible Trivia Answers

Casey's trivia book "Know It? ... or Not?" is available from BearManorMedia.com

**ANSWERS** 1) Old; 2) Fiery Serpents; 3) 1; 4) Ask; 5) Nehemiah; 6) 930

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Bacon. . . . . $4.25/Lb.
Jowl Bacon . . . . . $3.50/Lb.
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