



2018 Irrigation and Water Management Survey



Mallory Johnson

Agricultural Statistician, Eastern Mountain Regional Field Office

Barry Adams

Deputy Director, Eastern Mountain Regional Field Office

- Changes from the 2013 Survey
 - Name change from Farm and Ranch Irrigation Survey (FRIS) to Irrigation Water Management Survey (IWMS)
 - Horticulture land is now reported separately instead of in “other cropland”



Sample Design

- Sampled from farms reporting irrigated land in the past five years on the 2017 Census of Agriculture
- All farms irrigating in the reference year of 2018
- Institutional, research and experiment farms were excluded

Data Collection by

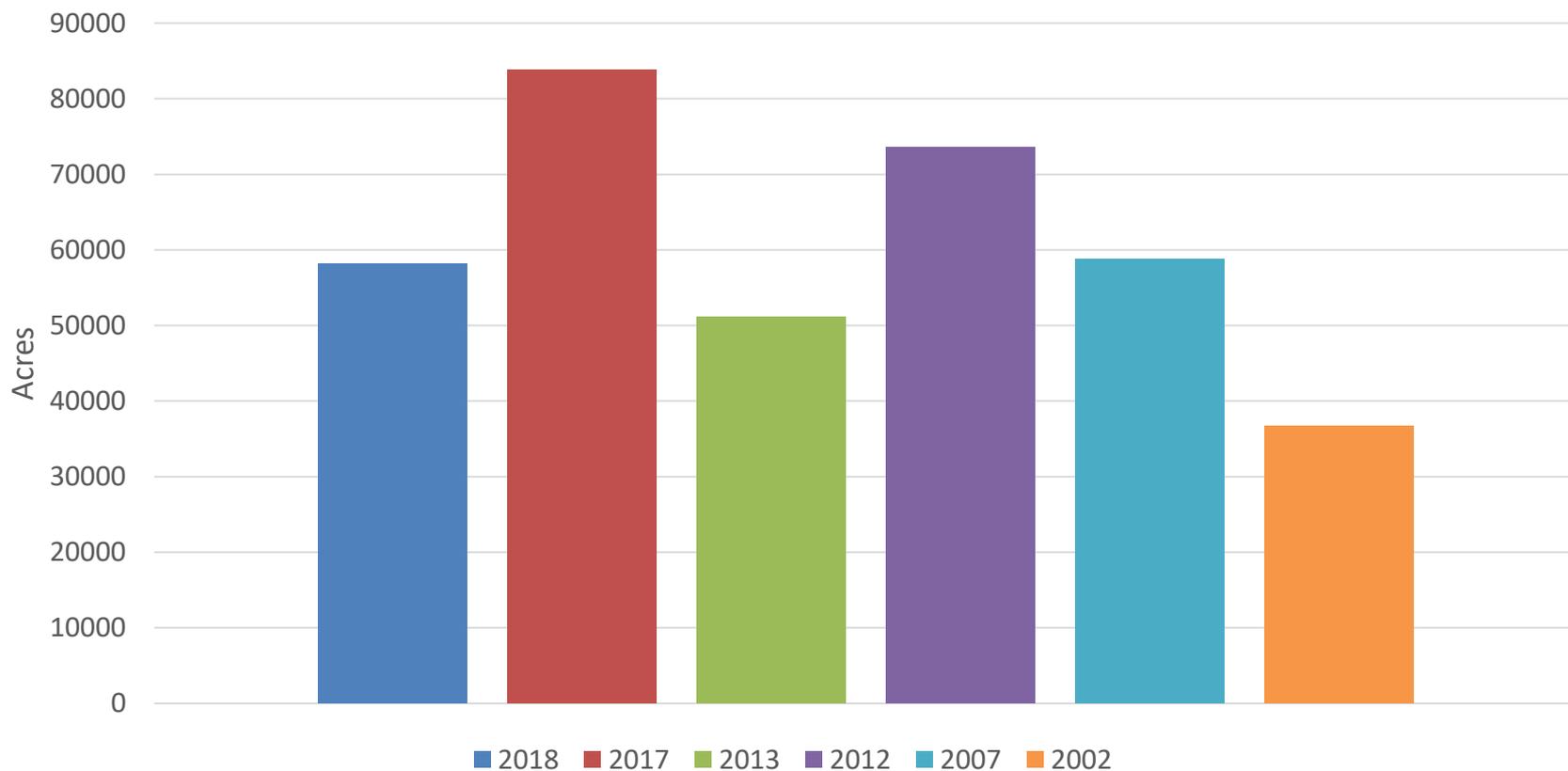
- Mail
- Online
- Phone
- Face-to-face



Survey Content

- Total land in farm and total irrigated land
- Irrigation source: ground water, surface water, and off-farm water
- Method of irrigation: gravity, sprinkler, drip/low flow micro irrigation
- Crops irrigated: total acres and by method/source
- Horticulture irrigated: in the open and under protection
- Expenses for irrigation
- Water management practices

Acres Irrigated in Kentucky



*According to the Census of Agriculture and IWMS/FRIS



Top Kentucky counties for irrigated acres in 2017

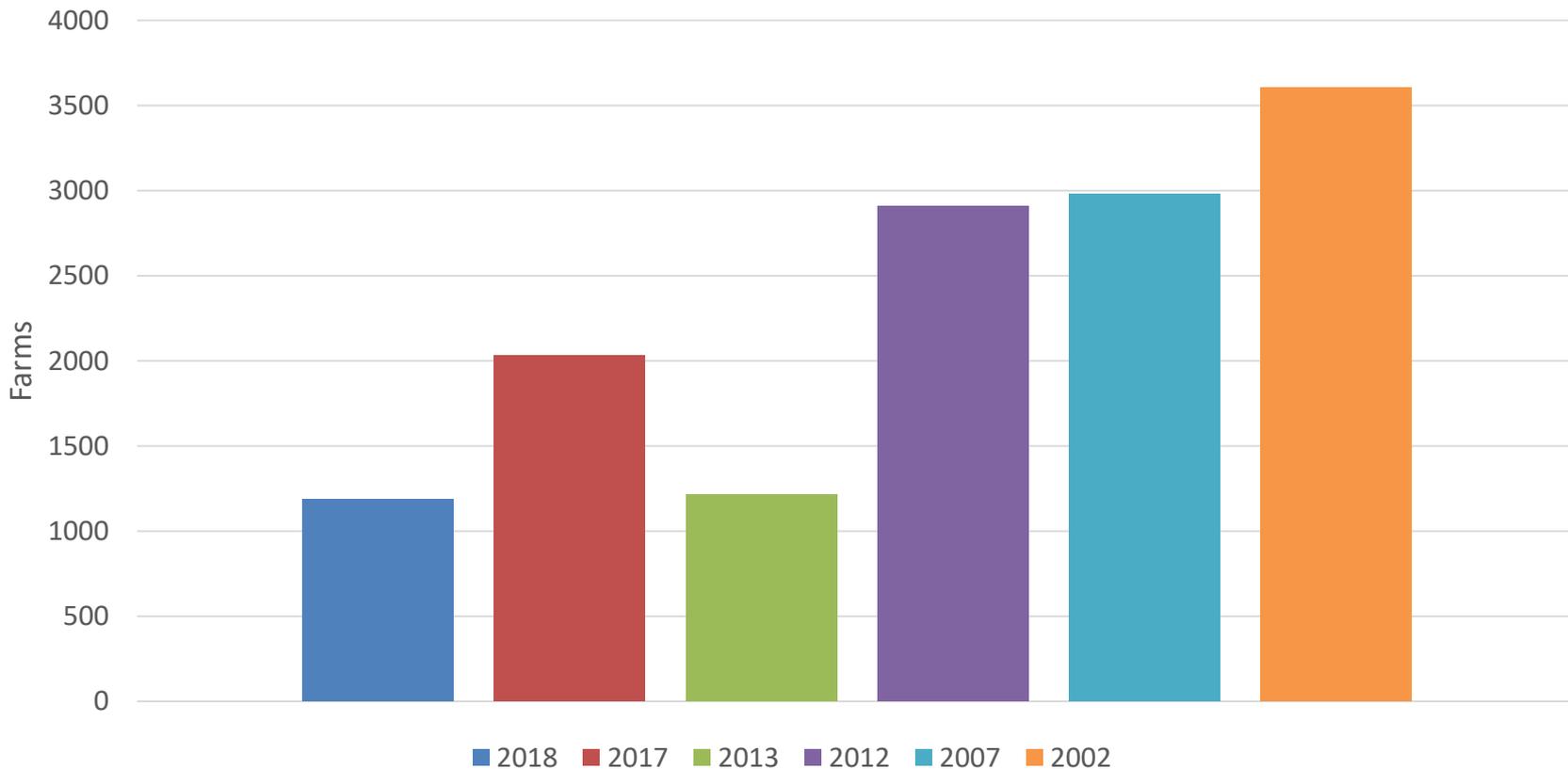
1. Daviess county – 10,888 acres
2. Hickman county – 9,510 acres
3. Henderson county – 9,161 acres
4. Fulton county – 7,011 acres
5. Caldwell county – 6,163 acres

2018 Land Use on Farms with Irrigation in Kentucky

- Total Irrigated acres: 58,234 acres
 - 17.5% of total 332,495 acres reported
 - Increase of 7,106 acres from the 2013 survey
- Cropland in the open was 98.7% of total irrigated acres (57,454 acres)
- Nursery/greenhouse under protection was 1.3% of total irrigated acres (728 acres)
- Permanent pasture was ~less than 0.1% of total irrigated acres (52 acres)



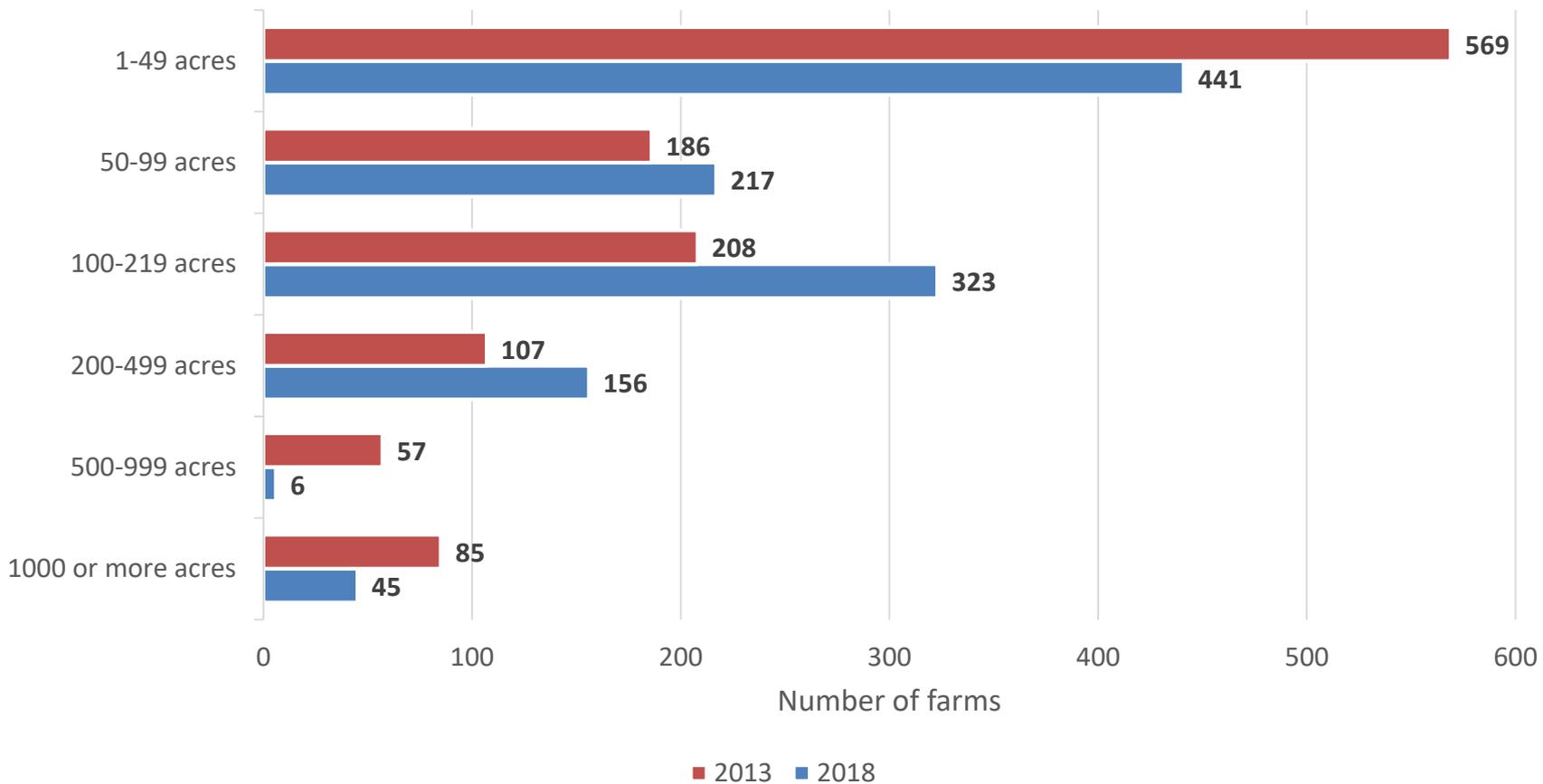
Number of Irrigated Farms in Kentucky



*According to Census of Agriculture and IWMS/FRIS



Irrigated Farms in Kentucky by Size



*According to IWMS & FRIS

- 2018 Water applied in Kentucky
 - 1,188 farms
 - 58,234 acres irrigated
 - 22,157 acre-feet applied
 - 0.4 average acre-feet per acre



- 2018 Area under protection in Kentucky
 - 686 farms
 - 9,068,660 square feet
 - 53,949,000 gallons applied



Acre-foot is the amount of water required to cover one acre to a depth of one foot.

*1 acre-foot = 43,560 cubic feet or 325,851 gallons

- 2018 Water sources applied in the open

	Irrigated Acres	Acre-feet Applied
Ground water from wells	33,504	11,870
On-farm surface water	24,730	8,652
Off-farm water	2,479	1,469

54% of water applied was from groundwater

- 2018 Water sources applied under protection

	Square Feet Irrigated	Gallons Applied (1,000)
Ground water from wells	1,561,148	12,036
On-farm surface water	3,932,720	13,782
Off-farm water	4,959,812	28,131

52% of water applied was from off-farm water

*Total is less than sum of individual sources because some irrigated acres have more than one water source

Irrigation Wells in 2018

- 285 farms reported 549 wells
 - 5% of wells had flow meters to measure the amount of water supplied
 - 81% of wells had backflow prevention devices to prevent cross contamination
- 150 feet was the average well depth in 2018
- 74 feet was the average depth to water at beginning of the irrigation season

2018 Methods of water distribution in the open

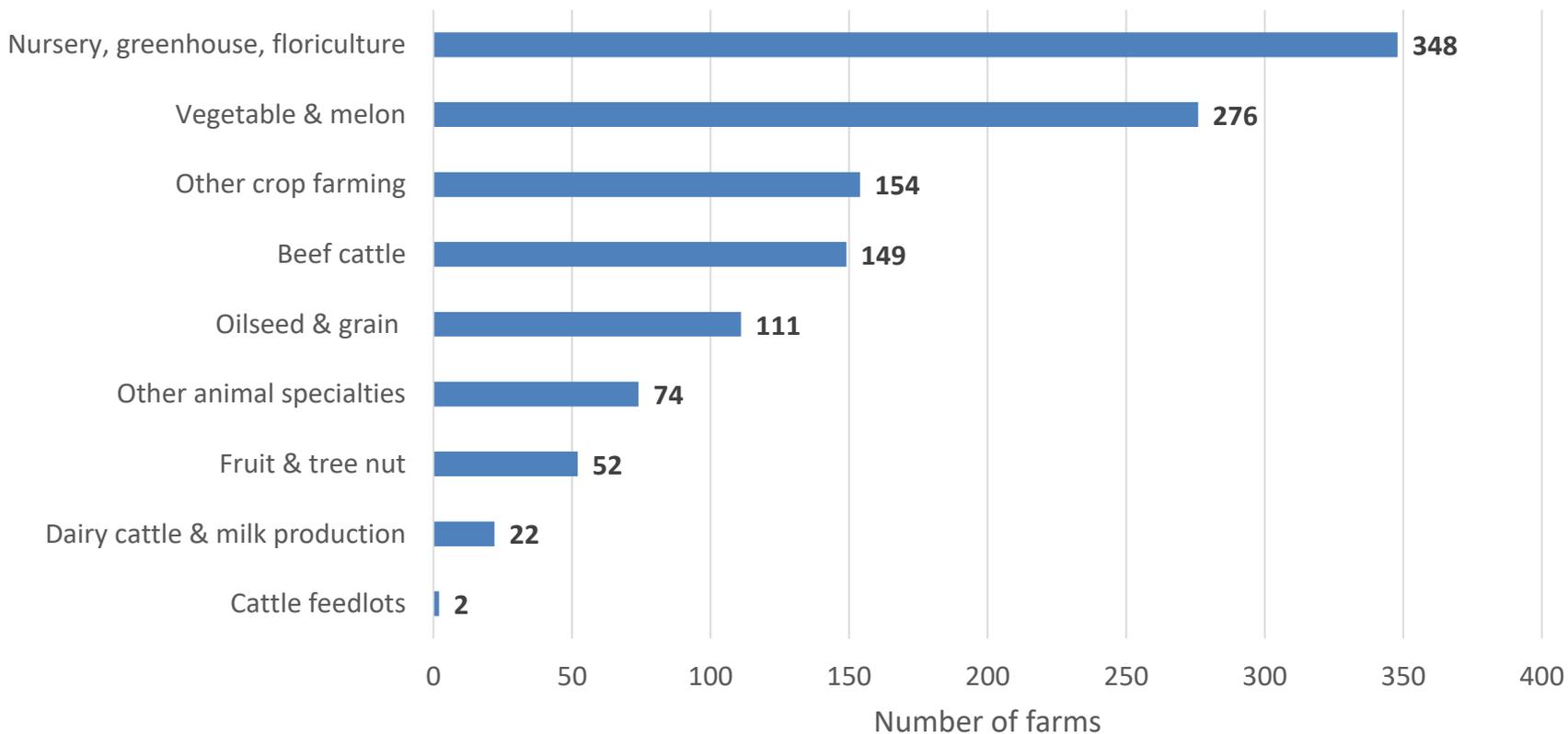
	Number of farms	Irrigated Acres
Sprinkler	285	56,154
Drip, trickle, and low-flow micro	576	7,604
Gravity	63	2,992



*Total is less than sum because some farms and acres have more than one distribution system applied.



2018 Irrigated farms in Kentucky by North American Industrial Classification System



Nursery, greenhouse & floriculture operations accounted for 29% of the total number of irrigated farms but only 3% of total irrigated acres. Oilseed and grain operations accounted for 88% of total irrigated acres.

Horticulture Operations in 2018

- Top crops irrigated both in the open and under protection

In the open

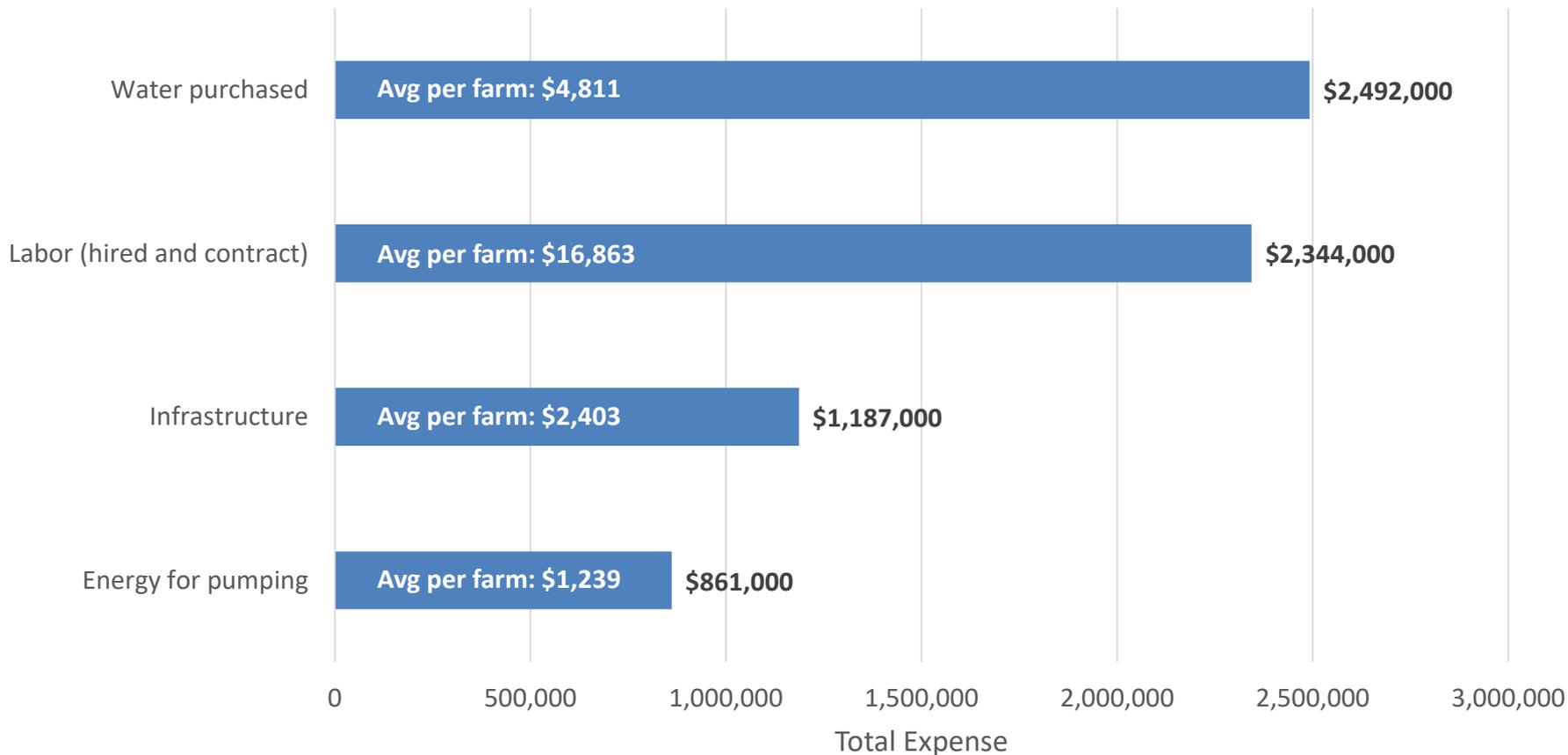
	Total acres
Nursery Crops	761
Floriculture and bedding	80
Propagative materials	43

Under protection

	Total square feet
Floriculture and bedding	4,057,832
Food under protection	4,328,328
Propagative materials	597,140
Nursery crops	463,080



Irrigation Expenses in Kentucky and Average per Farm in 2018



*According to IWMS

Sources of Information

- Extension agents or university specialist – 64%
- Neighboring farmers – 45%
- Irrigation equipment dealers – 36%
- Media reports – 12%
- NRCS, local conservation district, other federal/state agencies – 9%
- Electronic information services – 9%
- Private irrigation specialist or consultants – 5%
- Irrigation district or water supplier – less than 1%

How to find the full 2018 IWMS report?

- www.nass.usda.gov/AgCensus
- Click Latest Releases → 2017 Census of Agriculture
- Click Special Studies
- Click 2018 Irrigation and Water Management Survey



Questions?

Mallory Johnson

(502) 907-3208

Mallory.Johnson@usda.gov

Barry Adams

(502) 907-3201

Barry.Adams@usda.gov