Keeping chickens in urban and suburban areas has become increasingly popular. 70.2% have raised chickens for <5 years.

Many reasons cited for keeping backyard chickens:
- Fresh eggs/meat (92.5%)
- Pets (57.4%)
- Gardening partners (62.8%)
- 4-H projects

The majority of backyard flock owners believe:
- Their hens produce safer, tastier, and more nutritious eggs
- Their hens have better welfare than commercial chickens
- Their chickens provide companionship and are considered pets
- They enjoy watching their chickens behavior

Household income over $100,000: 41.2%
Reported flock health issues in the last year: 41.4%

WHY SHOULD VETERINARIANS CARE ABOUT CHICKENS?

**Need**
- Lack of veterinary services for backyard chickens frequently cited
- Demand may increase with the Veterinary Feed Directive

**Benefits**
- Creates opportunity for discussion about zoonotic diseases and biosecurity
- Increases clientele

**Challenges**
- Chickens are often presented to exotic or small animal clinics
- Strict regulations governing drug use in livestock species
- Stoic nature of chickens
- Limited meaningful ante-mortem diagnostics
OBJECTIVE

To establish blood chemistry reference intervals for backyard hens

Blood chemistry profiles are a commonly used diagnostic tool in most veterinary species
There are no reference intervals published specifically for this demographic
Published intervals for the Gallus gallus domesticus could not be traced back to the primary literature

RECRUITING FLOCKS

Recruited via Facebook groups
Visited 34 different flocks in Snohomish, King, and Pierce Counties
Average flock size was 9 hens (range of 2 to 32)
1 to 6 hens sampled per flock
133 hens sampled

COLLECTING DATA

Individual Hen Requirements
- Currently laying
- No recent history of illness
- No broody behavior

Medial Metatarsal Venipuncture
- Alcohol swab
- 21G needle, 1 ml syringe
- Heparinized blood tube

COLLECTING DATA

Blood Chemistry
- VetScan VS2
- Avian/Reptilian Plus Rotors
- Bile acid and calcium limitations

Packed Cell Volume
- Centrifuged hematocrit tubes

COLLECTING DATA

ANALYZING DATA

Reference Intervals
constructed using CLSI guidelines

ANALYZING DATA

Correlations
- Calcium and phosphorus
- AST and creatine kinase
- No correlation between age and blood parameters
- No correlation between flock size or presence of a rooster with creatine kinase
ANALYZING DATA
Validation of Existing Reference Intervals

- Using guidelines established by the CLSI
- 7 out of 10 existing reference intervals not suitable for use

APPLICATION

- There is limited information on how chicken blood chemistry values are altered in different disease states
- Can be interpreted in light of avian physiology
- May be useful to guide supportive care

WILL FLOCK OWNERS PAY?

- 47% of flock owners said they would pay ~$70 for a chemistry panel

SUMMARY

- Backyard chickens are a growing demographic
- There is a need for veterinarians who are willing to treat them
- Blood chemistry panels may be an excellent tool for diagnosing disease in chickens
- More research is needed

RESOURCES

http://www.usfarad.org/poultry.html

http://aast.cfph.iastate.edu/VFD/index.htm
RESOURCES

https://www.cdc.gov/features/salmonellapoultry/index.html

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