ALBERTA RESEARCHER TARGETS IMPROVED CHICKENS' REPRODUCTIVE FITNESS

Healthy hens, more chicks

By Lisa Lawlor

Healthy hens are productive hens. A University of Alberta (U of A) researcher is studying reproductive fitness in broiler breeder hens, providing further proof that what's good for hens can be good for farmers as well.

Prof. Frank Robinson, Faculty of Agricultural, Life and Environmental Sciences at the U of A is examining the impact of two common practices – lighting programs and feed allocation – on reproductive fitness. He's finding that small changes can, in the long run, produce healthier hens capable of producing greater numbers of chicks, a winning situation for both the producer and farm animal.

One focus of his research program looks at the impact of common barn lighting practices on hen health and reproduction. Most farmers change the number of light hours in the barn from eight to 16 per day when pullets reach 20 or 21 weeks of age. Increasing the number of light hours in the barn signals pullets to initiate puberty and produce offspring. But, Robinson is finding that pushing the biological clock ahead too early is not the most productive and cost-effective practice.

"We're finding that it's more beneficial to us and to the hen if we delay puberty to a time later than some people would have considered the optimal time," says Robinson.

This means waiting until the pullets are 23 weeks of age before increasing the day length to initiate puberty. In trials, Robinson has found that by giving the pullet three weeks longer to mature naturally, their settable egg production – the eggs that can be put into the incubator and expected to hatch – is increased. He suspects the delay in inducing puberty allows the hens to develop a more robust reproductive tract.

In a second area of his research, Robinson is looking at the impact of weight on hen health and reproductive success. Standard feeding practices can occasionally lead to hens that are overweight. Overweight hens have erratic laying patterns which can result in eggs with poor shells and eggs being laid on the floor rather than in nests. Egg with shell problems and floor eggs are not accepted by the hatchery as they will likely not hatch or may be dirty and present a contamination risk. Excess body weight can also lead to hens laying multiple eggs (or eggs with multiple yolks) one day, and then none for several days. When hens are at a healthy weight, they will reliably produce one egg per day and will not experience the physiological stress associated with being either under or overweight.

To produce healthier hens, Robinson has been conducting feed studies where, from the age of three weeks, hens are provided with a rationed diet and are continually supervised to ensure their weight doesn't increase or decrease substantially. The hens are weighed weekly, and the amount of standard chicken layer diet of corn, wheat and soybean is adjusted accordingly.

"We're looking for uniformity; you can't have hens of different sizes because they will affect each other's eating allowances," says Robinson.

This study is being conducted at the broiler breeder barn of the U of A research facility.

Collaborating researchers include Dr. Rob Renema from the U of A, Dr. Martin Zuidhof and Dr. Val Carney of Alberta Agriculture and Rural Development.

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