

SHARING OUR ROOTS

Acres of Innovation

TESTING FEASIBILITY OF YEAR-ROUND EGG PRODUCTION IN MINNESOTA UNDER A REGENERATIVE FREE-RANGE SYSTEM

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Sharing Our Roots' revolutionary poultry-centered regenerative agriculture system has the potential to produce high quality eggs while promoting animal welfare and ecological balance. The purpose of this study was to test the feasibility of year-round cold-climate egg production. By incorporating a solarium and sprouted grain supplemental feed, hens should be able to produce during the winter months.

METHODS

Three-hundred and three egg laying hens were kept for 79 weeks. The structures in our system include two paddocks for rotation, a solarium for sunlight access during cold and/or snowy days, insulated community nest system and open space for hens to act naturally during the winter, an egg collection alley, an egg washing station, and a water treatment room. No GMO feed, antibiotics, or veterinary chemical medicines were used. During the spring and summer months, hens were rotated every 10 days between two 13,000 sq. ft paddocks (26-36 sq. ft/hen). They grazed on pasture planted with hazelnuts, elderberry, corn, wheat, sorghum, forage pea, buckwheat, sunflower seed and oats. The shade of perennial crops for the protection of flying predators.

During the winter months, hens were fed with ground-up feed and freshly sprouted grains. Grains were sprouted in the egg collection alley and then brought into the solarium for them to eat during the day. Ground-up feed and sprouted grain was fed only in the solarium, only water was provided in the insulated area.

During the study, investigators recorded general behavior (morning, evening, and overnight), eggs laid, amount of ground-up feed and sprouted grain intake, and paddock regeneration in relation to management and animal pressure per square feet.

RESULTS

During this study, 8,215 dozen eggs were produced over 60 weeks with peak production remaining above 70% from week 23 to week 73. Hens showed few signs of stress throughout the year. During the warmer months the hen's general behavior showed less stress and higher egg production.

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Complaints common to small flock owners during the winter such as frozen water supplies and over stressed hens that materializes in fighting and cannibalism were not issues in this system. Minimal heat from an infrared heater kept the whole insulated area of the building from falling below 45 degrees Fahrenheit and to keep water from freezing.

DISCUSSION & FURTHER RESEARCH

Using this system, hens showed few signs of stress because they had the opportunity to express natural behaviors year-long in the paddocks during the summer and in the solarium during the winter. Hens were always exposed to regular daylight, which was especially critical during the shorter winter months.

Further research should include testing of the nutritional profile of the eggs throughout the different seasons, especially during the winter when sprouted grain mixes were used to supplement their feed and access to forage was possible. Nesting behavior should be evaluated with 4-foot-long communal nests, and early training should take place to eliminate or significantly reduce floored eggs. Testing the use of supplemental herbal infusions and dry herbs in the ground-up feed and sprouted grain should also be explored.

