

POULTRY ❖ POINTERS

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ing of the eggs. Temperature for proper development is 99.5 degrees F in an incubator that has a small fan and 100.5 degrees F in a still-air incubator. The acceptable range for incubation is between 97 and 102 degrees F. Overheating is more critical than underheating the eggs in regard to successful incubation. Embryonic mortality is seen if the temperature drops below 96 or above 103 degrees F.

Care should be taken to provide adequate humidity (60 percent RH). This is often measured as a wet-bulb temperature that is usually supplied by evaporation of water contained in the incubator. Ventilation is critical in allowing gas exchange (respiration) of the developing embryo. However, if too much fresh air is supplied, a consistent temperature and humidity can not be maintained. If ventilation is inadequate suffocation of the embryos may occur. Turning the eggs during incubation is critical in preventing

"sticking" of the embryo to the internal egg membrane. Eggs should be turned three to five times per day during incubation except during the last three days prior to hatch.

Embryonic development may be followed by candling eggs. Candling involves putting a high intensity light source behind the egg to see if any embryonic growth can be detected. Hatchery managers will normally check eggs after 10 days of incubation. By that time you should only see the air cell illuminated in a developing egg. If the egg is infertile or has died at an early embryonic age, the whole egg will be illuminated. Those eggs that were clear or illuminated can be removed, opened and stage of development determined or confirmed that the egg was infertile.

An infertile egg has a concentrated white mass in the center of the white disc (blastodisc) on the surface of the yolk. A developing fertile egg will have either a concentric, uniform growth of white tissues or if the embryo

died quite early, you will see a "donut" or opaque (clear) shaped area in the center of the blastodisc surrounded by white developing tissue. The presence of blood islands, blood vessels, or a developing embryo with a visible heart would indicate a three-day or older chick.

The first four days of incubation can be a time of high embryonic mortality (2 to 4 percent). It is the period when all critical and complex embryonic organ systems develop and connected. The incubation time of from five to twelve days is a period of growth of the embryo and the embryonic organ systems and minimal loss of embryos is normally found (0.5 percent). The last major stage of development (12 to 21 days) has the maturation of the digestive and respiratory system as well as the completion of growth. Late development is also a critical stage of development and can have a normal mortality in the range of three to five percent.

Successful hatching of birds can be very rewarding and an excellent way of training young minds on basic biological systems and the miracle of life.

Soil Nutrient Management Workshop Feb. 9

POTTSVILLE (Schuylkill Co.) — A Soil Nutrient Management Workshop will be presented by Penn State Extension including three Tuesday evening sessions, scheduled Feb. 9, and Feb. 23, from 7 p.m. to 9 p.m., at the Schuylkill County Ag Center.

The program is designed to be a practical clinic to prepare for planting your 1999 field crops. The discussions will cover taking and interpreting soil tests, determining crop nutrient

needs, and deciding on which fertilizer products to use for optimum crop yields and profitability. Ample time will be allowed for questions and answers.

There is no registration fee but advanced registration is required so that adequate educational materials will be available. To register for more information, contact J. Allen Shoener at the Penn State/Schuylkill County Extension Office, 1202 Ag Center Drive, Pottsville, PA 17901, (570) 622-4225.

Career in Ag Night, Feb. 20

YORK (York Co.) — On Feb. 20, Penn State Cooperative Extension will sponsor a "Careers in Agriculture Night" at the York County 4-H Center.

The event will be open to all York County youth who are interested in exploring careers in the field of agriculture.

According to Pennsylvania Secretary of Agriculture, Samuel Hayes Jr., there are more careers available now than ever before in agriculture.

The career exploration will run from 6:30 p.m. to 8:30 p.m. Light snacks will be served.

Career representatives will meet with young people in an informal, one-on-one situation. Representatives will be on hand to answer questions concerning financial aid.

Other careers in agriculture that will be represented include service organizations, production managers, food industry, livestock production, agricultural companies and specialty industries, to mention a few.

If you would like more information or need directions to the 4-H center, call Penn State Extension at (717) 840-7408.

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