



Does egg storage affect embryo cell survival?

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THE PROBLEM

Fertile eggs cold stored > 7 days

Embryos die



WHY ?

- Embryo mortality could be due to death of embryonic cells during egg storage (2).
- Cell death could be due to apoptosis (cell suicide) and/or necrosis (injury driven cell death) (2) ?

OUR APPROACH



Fig 1. Harvesting white leghorn chicken embryo (blastoderm) from yolk surface.

Fig. 2: Cleaning embryo under light microscope.



Fig.3: Photomicrograph of the embryo (60X).
The chicken embryo contains up to 60,000 cells .

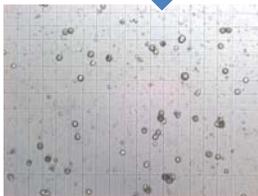


Fig. 4. Embryo separated into single cells.

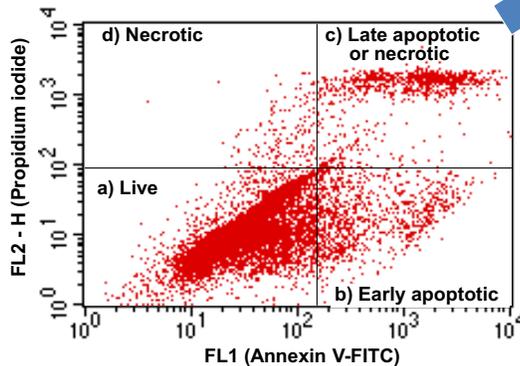


Fig. 5: Cells separated into live, early apoptotic, late apoptotic or necrotic & necrotic cells. 10,000 cells collected per experiment. Each dot represents one cell.

OBJECTIVES

- Develop procedures to study apoptosis & necrosis.
- Determine if cell death increases with egg storage time.

OUR OBSERVATIONS

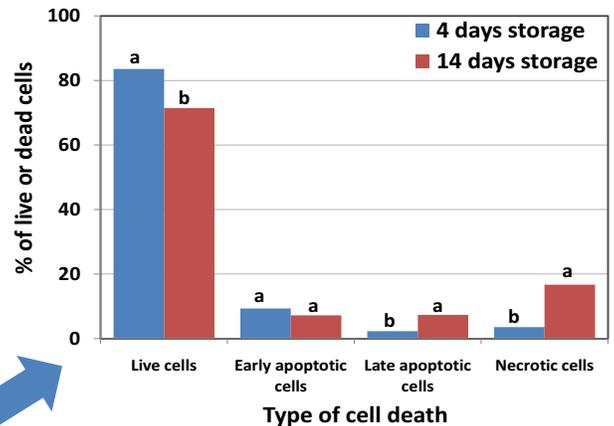


Fig. 6: Effect of egg storage on percentage of live and dead cells in leghorn chicken embryo cells.

WHAT DO THE RESULTS MEAN?

- Storing eggs for 4 vs. 14 d reduced live embryo cells from 84% to 71%.
- Increased percentage of dead embryo cells from 14 d stored eggs may have relationship with hatchability problems.

REFERENCES

1. Fasenko et al. (2001). Poultry Sci. 80: 1416-11.
2. Bakst and Akuffo (1999). Proc. Int. Congr. Bird Rep. pp. 125-131.

ACKNOWLEDGEMENTS

