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# Egg Grading Basics

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# Grading Eggs

## ■ Quality Factors

### □ AA Quality

- Shell – Clean, practically normal, and unbroken
- Interior – Air cell less than 1/8” in depth, white clear and firm, yolk slightly defined and free from defects
- Interior quality will remain AA for ~21 days when refrigerated

### □ A Quality

- Shell – Clean, practically normal, and unbroken
- Interior – Air cell less than 3/16” in depth, white clear and reasonably firm, yolk fairly well defined and free from defects
- Interior quality will remain A for ~45 days when refrigerated

### □ B Quality

- Shell – Unbroken, slight stains, moderate stains covering less than 1/16 of shell surface, abnormal shape, calcium deposits, ridges
- Interior – small blood and meat spots (less than 1/8” in diameter), white weak and watery, yolk plainly visible, air cell over 3/16” in depth

# Grading Eggs

## ■ Quality Factors

### □ Dirty

- Moderate stains more than 1/16 of the shell surface when scattered; more than 1/32 of the shell surface when localized
- Adhering manure, yolk or other materials
- Prominent stains

### □ Leaker

- Shell and membranes broken

### □ Crack (Check)

- Shell broken, membranes intact

### □ Inedible (No tolerance)

- Black rots, mixed rots, green rots, bloody whites, frozen, embryo, sour, stuck yolk, partially cooked, moldy

### □ Large Blood or Meat Spots

- Larger than 1/8" in diameter

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# EXTERIOR QUALITY FACTORS

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**Shape and Strength of the Shell**

**Cleanliness of the Shell**

**Soundness of the Shell**



# EXTERIOR QUALITY FACTORS

## Shape and Strength of the Shell

Evaluating the difference between AA/A and B Quality:

Does the shape prevent the eggs from fitting in the carton cell?

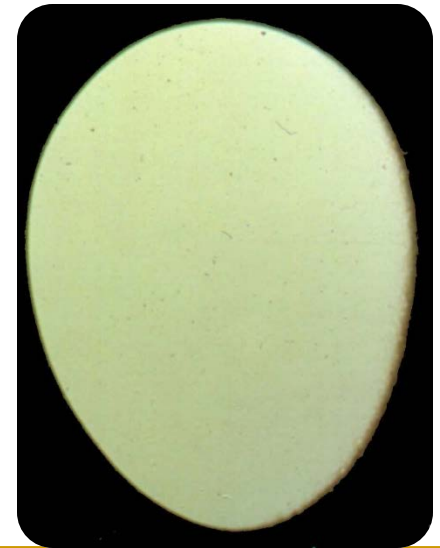
Will the egg break before making it to market?



# EXTERIOR QUALITY FACTORS

**Practically Normal:** A shell that approximates the usual shape and is sound and free from thin spots.

(AA and A quality)

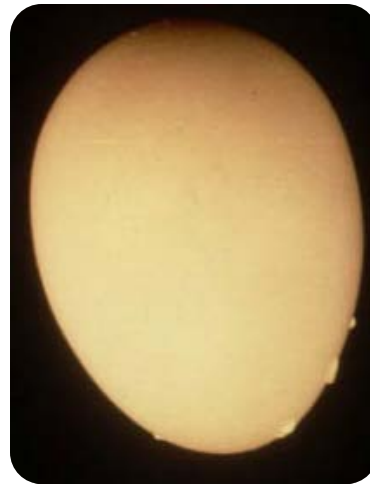


# EXTERIOR QUALITY FACTORS

## PRACTICALLY NORMAL:

Ridges and rough areas that do not materially affect the shape and strength of the shell are permitted.

No difference between AA and A quality for exterior factors



Calcium Deposits



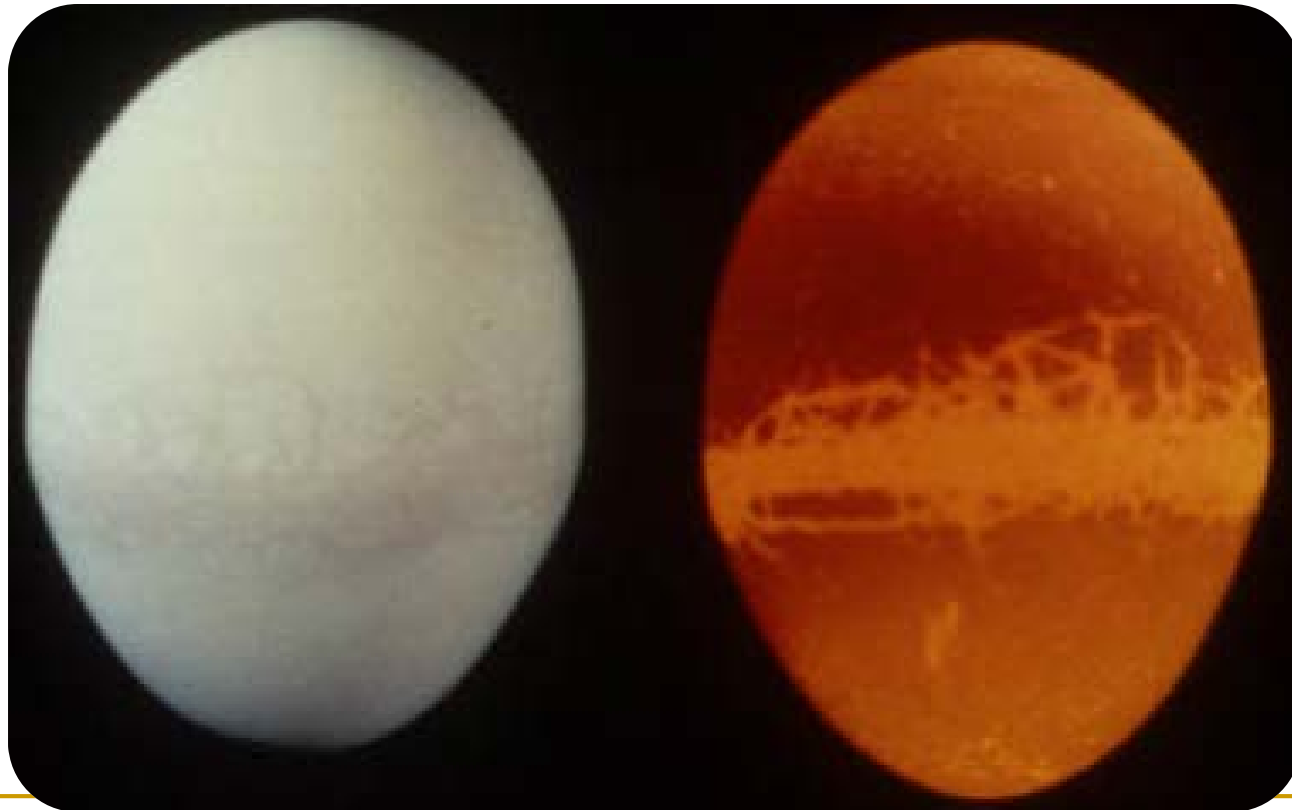
Ridge

# EXTERIOR QUALITY FACTORS

**Body or Healed Check:**

**Bulging or deep ridges - B Quality**

**Still a practically normal shape and no deep ridges - AA/A Quality**





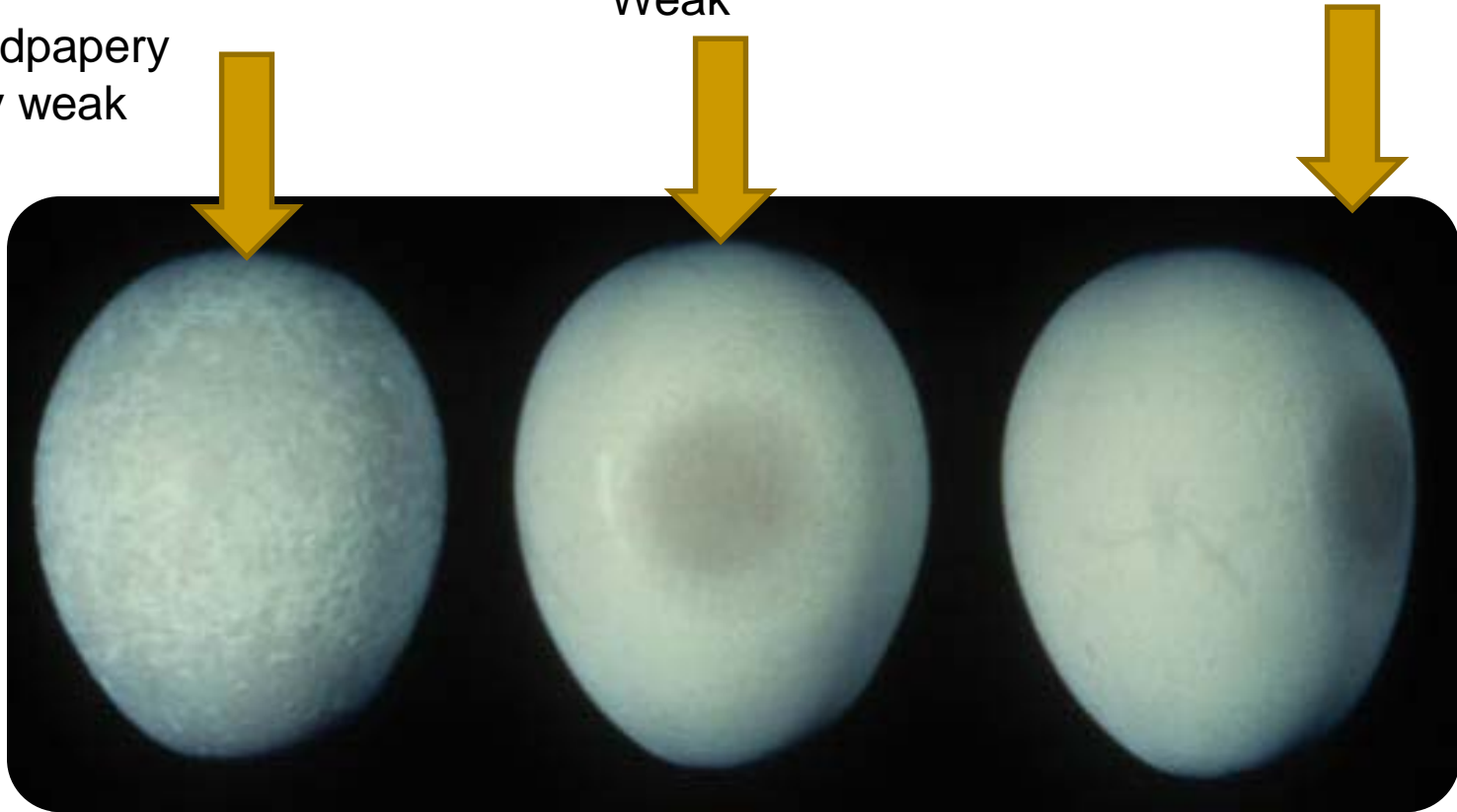
# EXTERIOR GRADING FACTORS

## •B Quality

Sandpapery  
very weak

Weak

Weak



# EXTERIOR GRADING FACTORS

A Quality



B Quality

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# Grading Eggs – Cleanliness

- Slight Stains – B Quality
  - Moderate Stains less than  $\frac{1}{32}$  or less of shell surface if localized;  $\frac{1}{16}$  of shell surface if scattered - B Quality
  - Moderate Stains more than  $\frac{1}{32}$  of shell surface if localized; more than  $\frac{1}{16}$  of shell surface if scattered – Dirty
  - Prominent Stains - Dirty
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# EXTERIOR QUALITY FACTORS

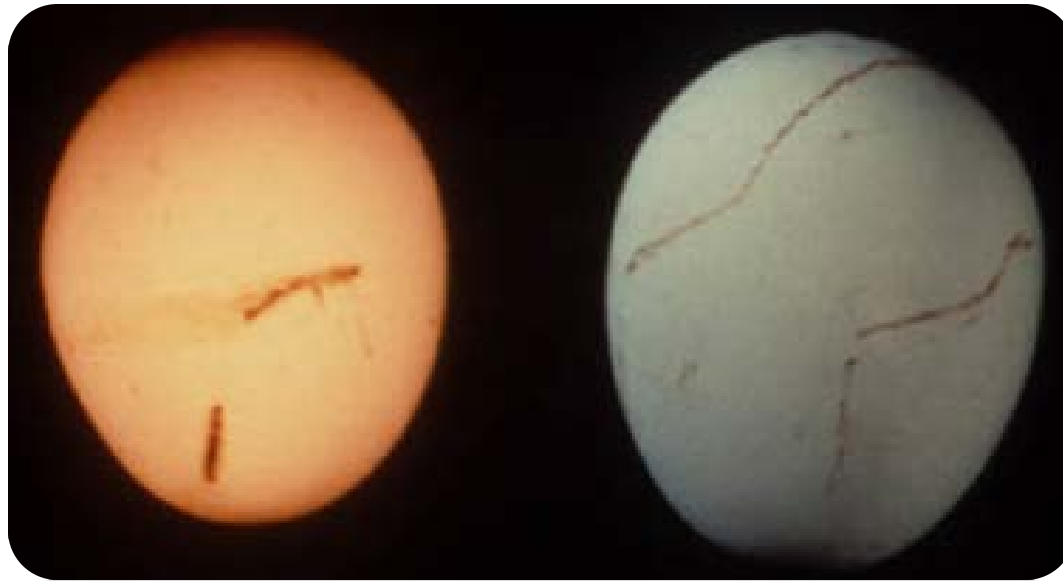
**Slight Stains  
B Quality**

**Slight Rusty Cage  
Marks  
Moderate Rusty Cage  
Marks  
B Quality**



# EXTERIOR QUALITY FACTORS

Prominent Stains: Dirty



# EXTERIOR GRADING FACTORS

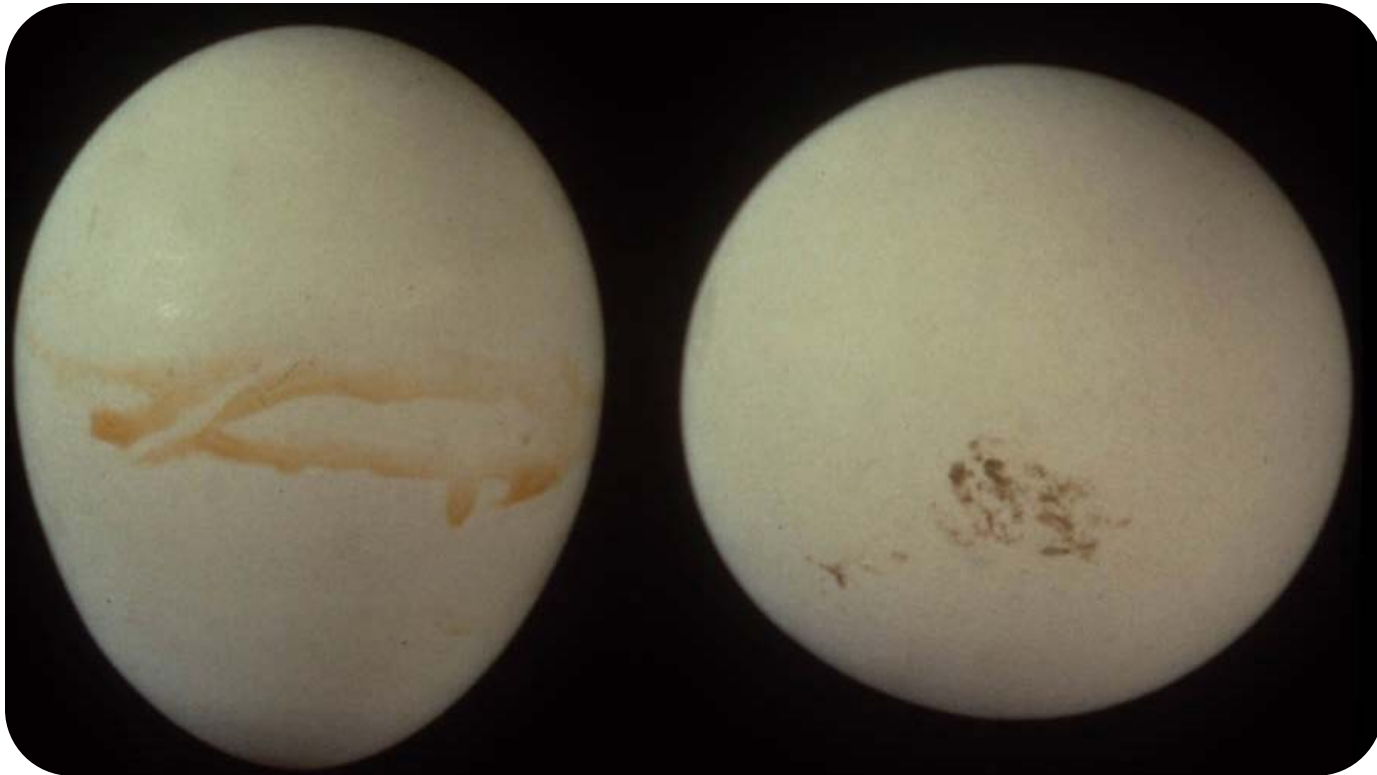
**Stains:**  
Slight  
Moderate  
Prominent

**Cage Marks:**  
Slight  
Moderate  
Prominent



# EXTERIOR QUALITY FACTORS

Dirty - anything adhering to the egg such as yolk, manure



Predominant Consumer Complaint

# EXTERIOR QUALITY FACTORS

**Inedible No Tolerance:**

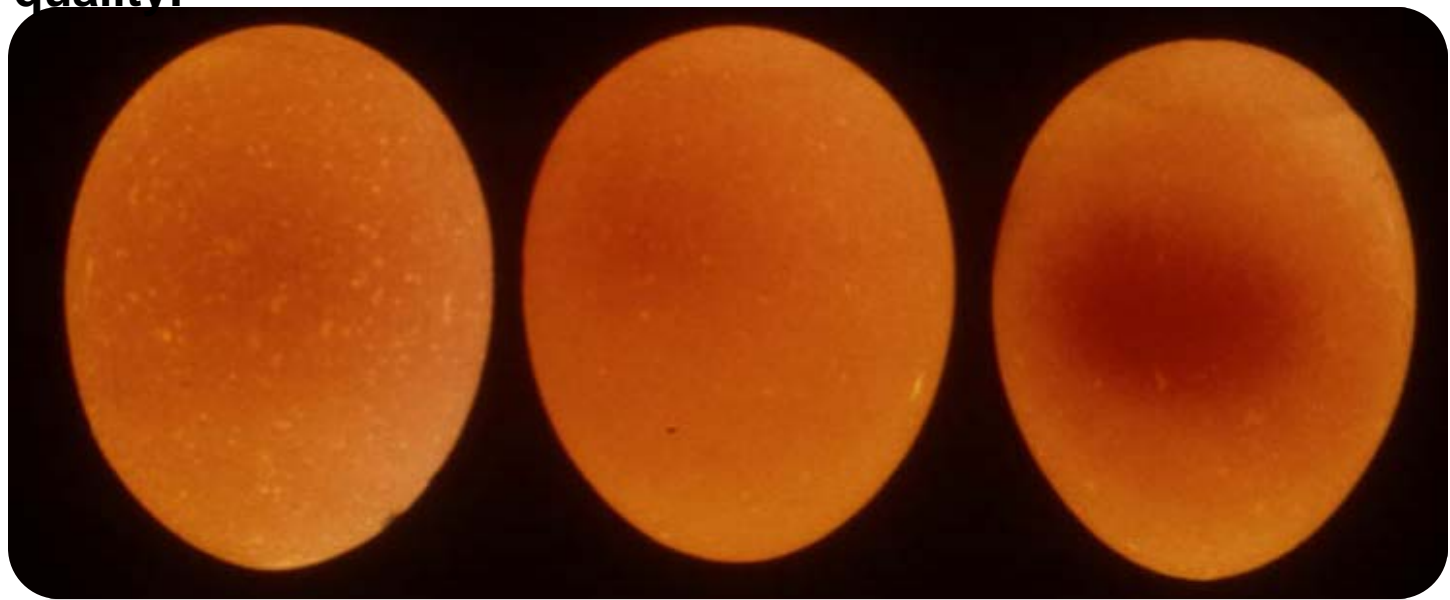
**Moldy Eggs**





# INTERIOR EGG QUALITY

As the egg ages, it evaporates creating a large air cell  
Size of the Air Cell is used to determine quality:



AA

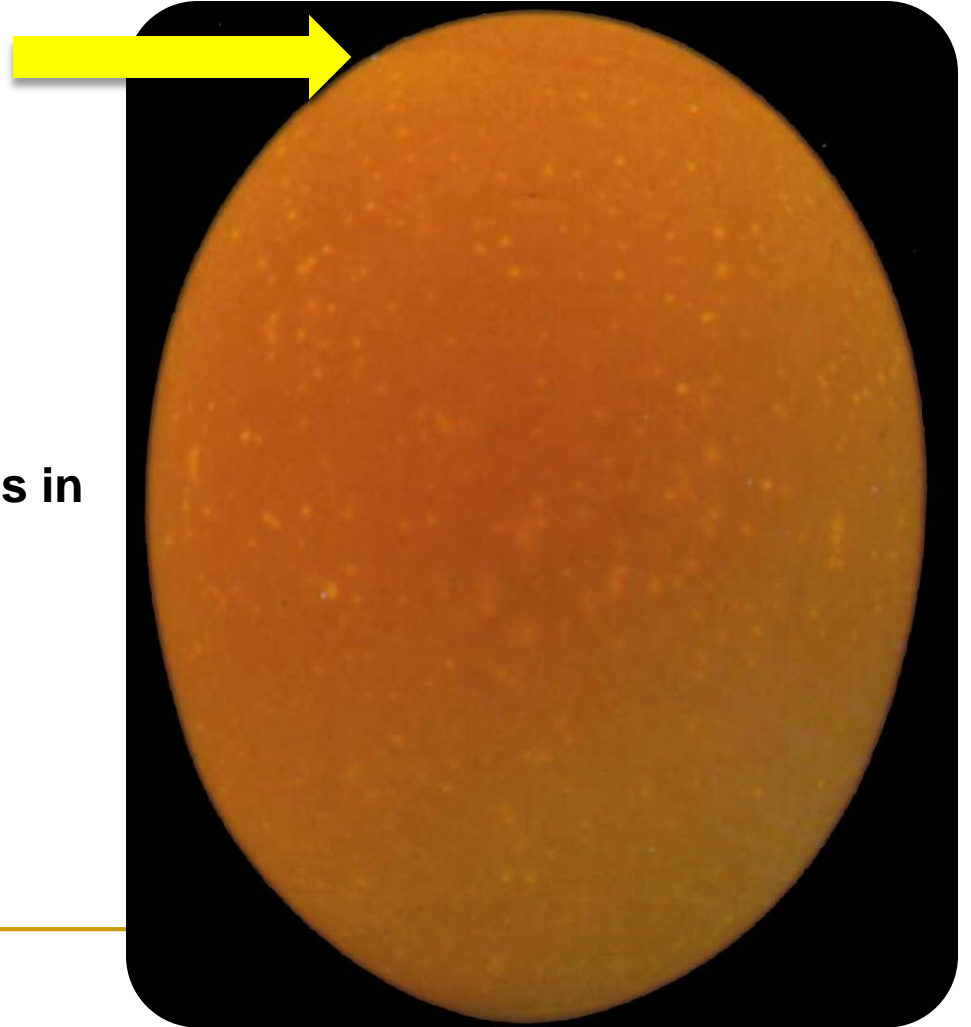
A

B

# INTERIOR EGG QUALITY

**AA Quality Air Cell:**

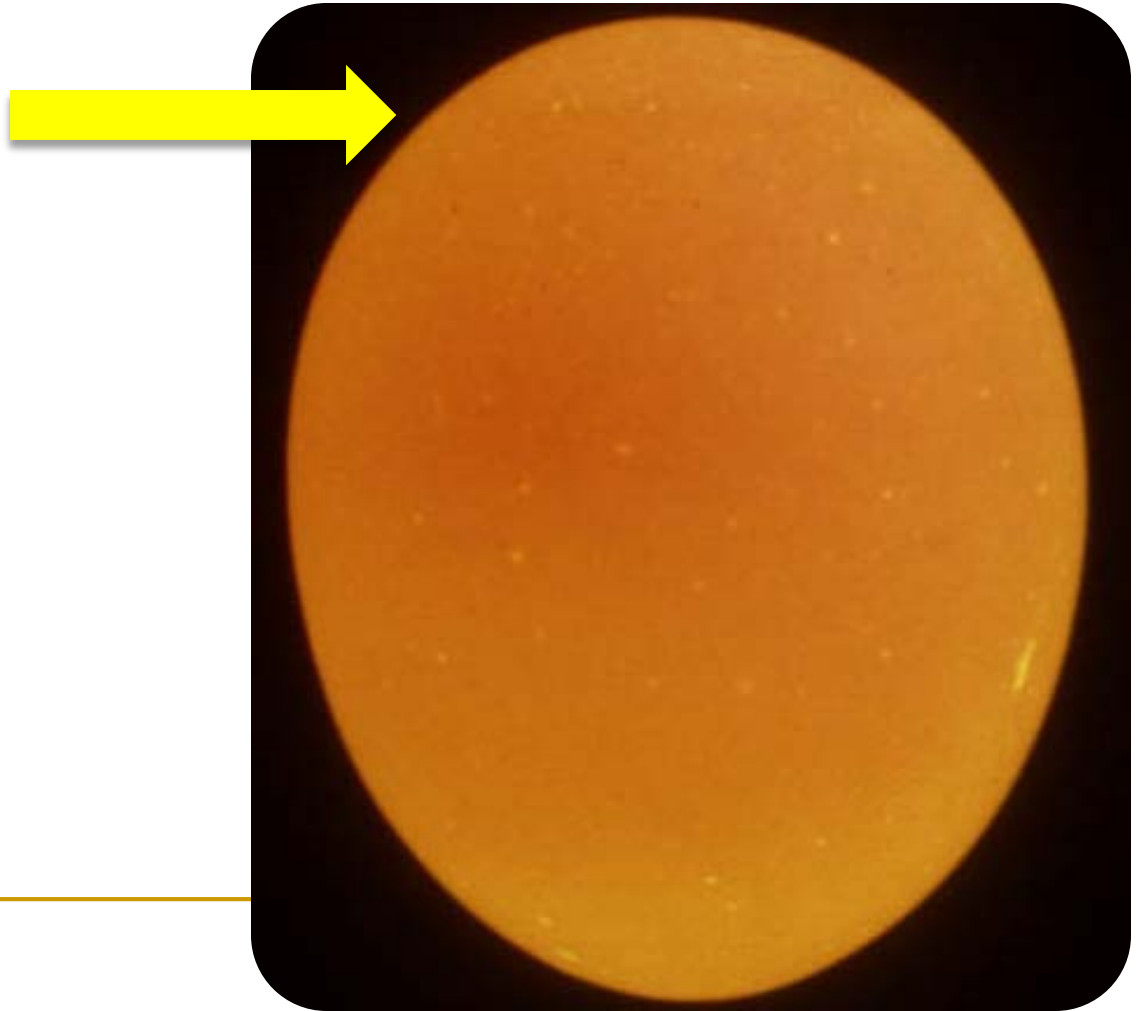
**Measuring one-eighth inch or less in depth.**



# INTERIOR EGG QUALITY

**A Quality Air Cell:**

**Measuring three-sixteenths  
inch or less in depth.**

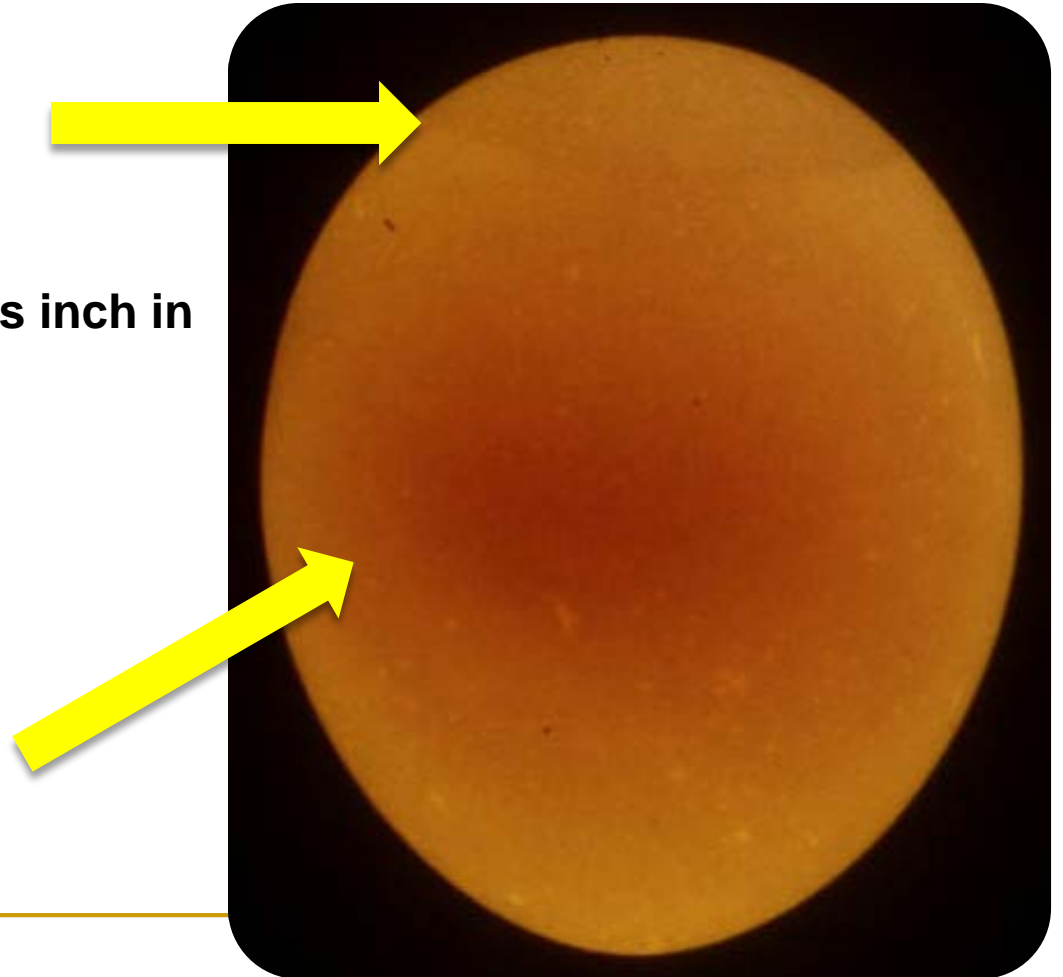


# INTERIOR EGG QUALITY

**B Quality Air Cell:**

**Measuring over three-sixteenths inch in depth.**

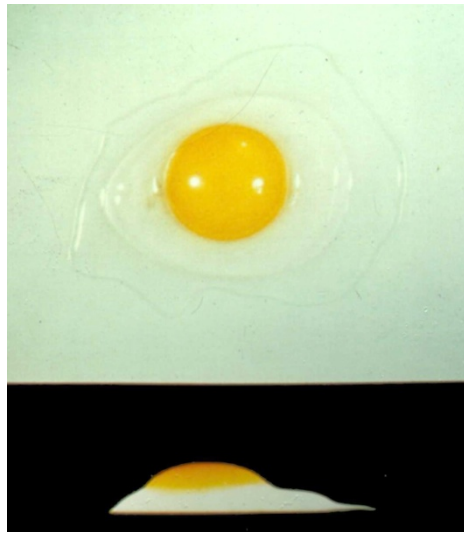
**Notice the prominent yolk outline.**



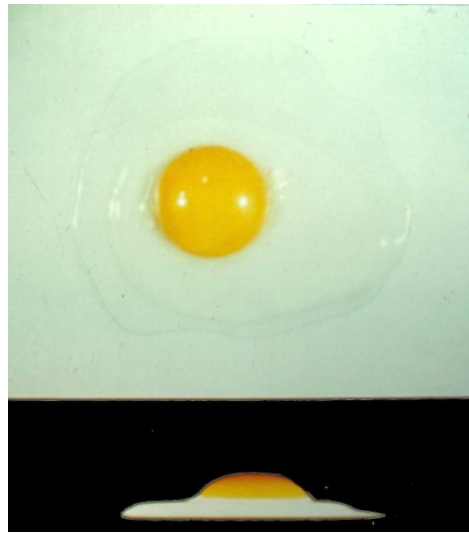
# INTERIOR EGG QUALITY

As the egg ages, the thick white breaks down into thin, watery white. The vitelline membrane weakens causing the yolk to flatten

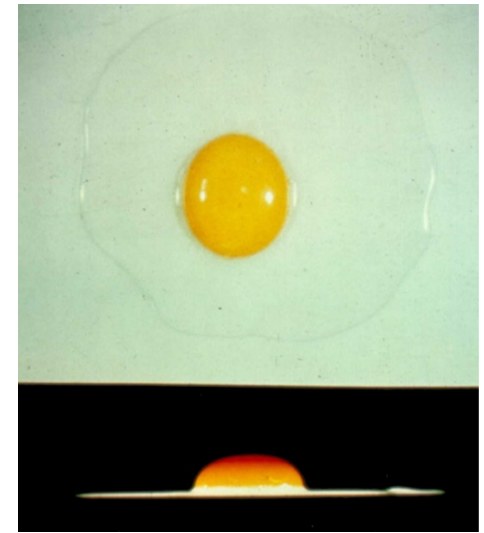
## Egg Breakouts:



**AA**  
Thick white, round yolk



**A**  
Less thick white, yolk starts to flatten

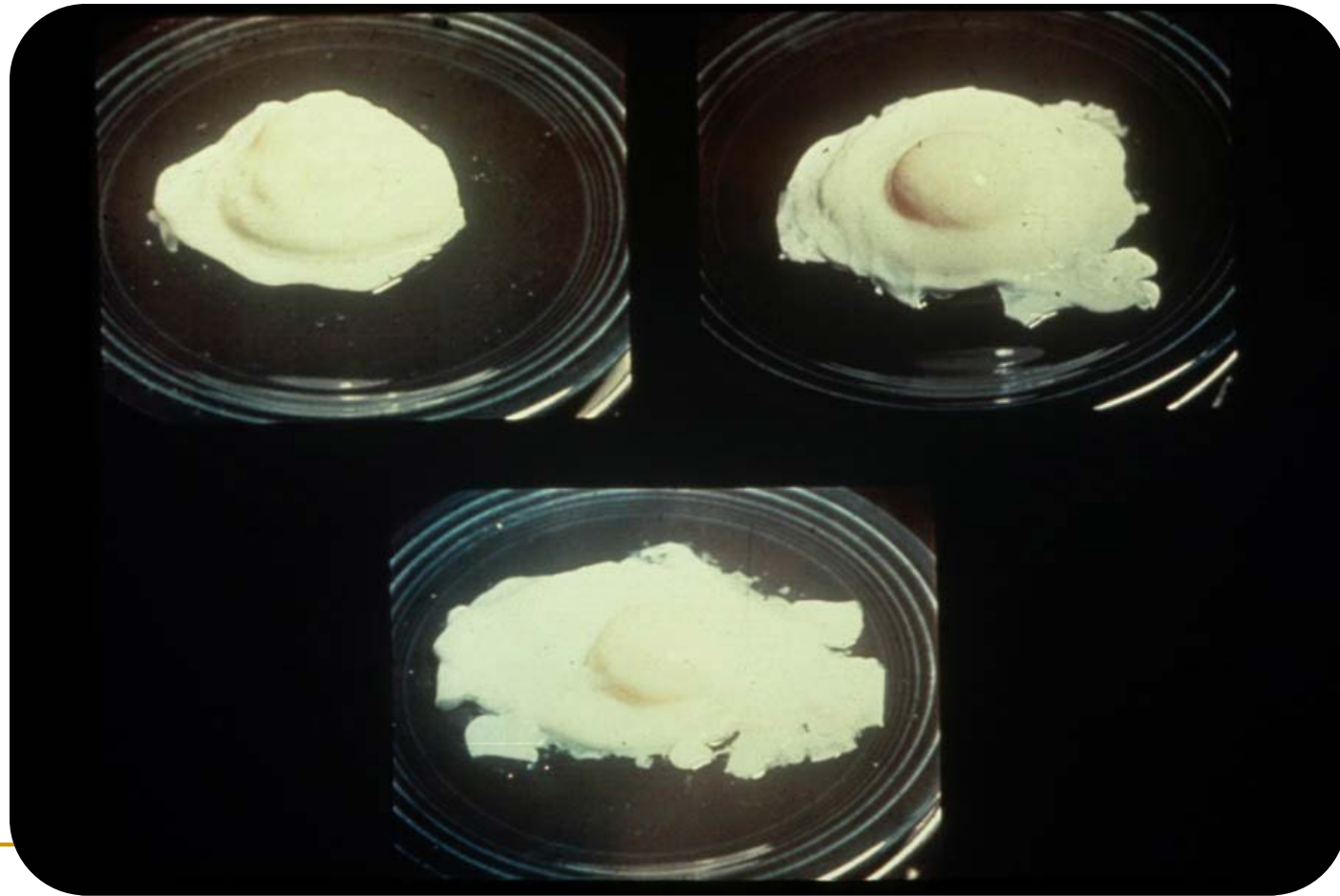


**B**  
Runny white, flat yolk

# INTERIOR EGG QUALITY

Poached Eggs:

AA  
A  
B



# INTERIOR EGG QUALITY

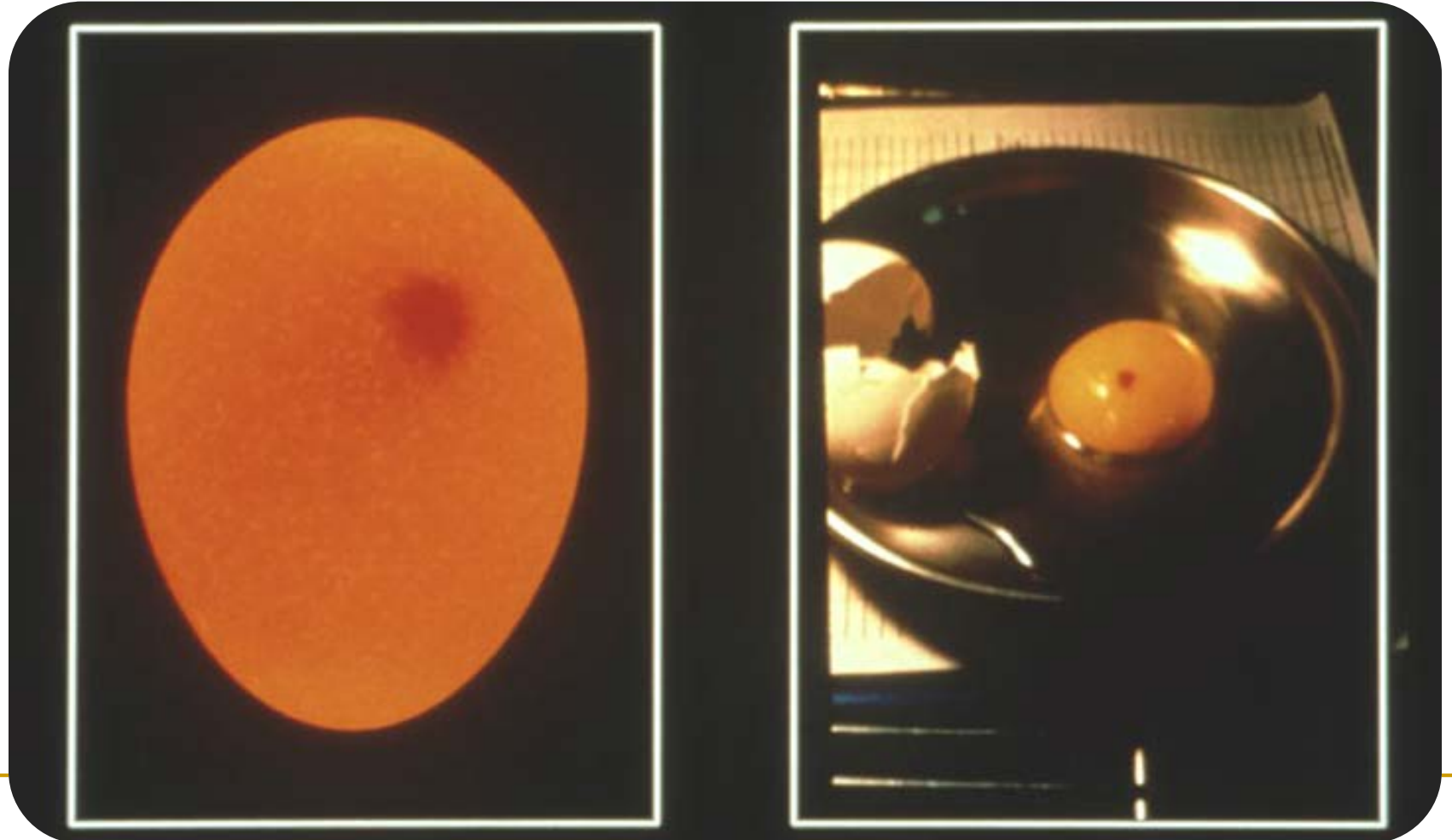
**B\***

**Small blood spots that are less than one-eighth inch in diameter.**



# INTERIOR EGG QUALITY

Blood and Meat Spots more than 1/8" in diameter: Loss no more than .3% allowed





# INTERIOR EGG QUALITY

**Inedible: No tolerance**

**Black Rot:**



# Egg Handling - Clean Eggs

- KEEP NEST BOXES CLEAN
- DISCARD FLOOR EGGS AND HEAVILY SOILED EGGS
- **NEVER, EVER** IMMERSE EGGS IN WATER
- REMOVE DRY SOIL PRIOR TO WASHING
- WASH AND RINSE WATER MUST BE A MINIMUM OF 90°F AND 20°F WARMER THAN THE WARMEST EGG
- USE A COLANDER AND RUN THE WATER OVER THE EGGS
- FOLLOW WITH A SANITIZING RINSE (100 TO 200 PPM CHLORINE)
  - ½ OZ OF BLEACH (Labeled for food contact) IN 1 GALLON WATER
    - No dyes or fragrance

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# Egg Handling Refrigerate

- Maintain Interior Quality
  - Prevent Microbial Growth
  - At a minimum gather eggs daily
  - Refrigerate at 45°F or below as soon as possible
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# Grading Eggs

- Origin Standards
  - Grade AA
    - Minimum 87% AA
    - Up to 13% A or B quality
    - Maximum 5% cracks
    - Maximum .5% dirty, leaker or large blood/meat spots
      - Blood and Meat spots cannot exceed .33%
  - Grade A
    - Minimum 87% A or better
    - Up to 13% B quality
    - Maximum 5% cracks
    - Maximum .5% dirty, leaker or large blood/meat spots
      - Blood and Meat spots cannot exceed .33%

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# Size of Eggs

## Based on Weight

- Both carton and individual egg weight requirements
  - Cannot use 6 medium and 6 jumbo and label as large
  - Maryland law – must meet the minimum weight requirements for the labeled size
    - Consumer protection to ensure they are receiving at least the minimum for the labeled size
    - Recommend labeling as the lower size class if won't be weighing
    - Example – majority of the eggs meet the large weight class but the remaining meet the medium weight class – Label as medium
  - Minimum carton weights
    - No tolerance for underweight cartons
  - Individual egg weights
    - Tolerance for up to 3.3% in the next lower weight class
    - Must have eggs that weigh more to still reach the carton weight requirements
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# Size of Eggs - Based on Weight

- Jumbo
  - Minimum of 30 ounces per dozen
  - Individual egg must weigh at least 2.42 ounces
- Extra Large
  - Minimum of 27 ounces per dozen
  - Individual egg must weigh at least 2.17 ounces
- Large
  - Minimum of 24 ounces per dozen
  - Individual egg must weigh at least 1.92 ounces
- Medium
  - Minimum of 21 ounces per dozen
  - Individual egg must weigh at least 1.67 ounces
- Small
  - Minimum of 18 ounces per dozen
  - Individual egg must weigh at least 1.42 ounces
- Pee Wee
  - Minimum of 15 ounces per dozen
  - No Individual egg weight requirement

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# Egg Grading Basics

- **QUESTIONS:**

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