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| --- | --- | --- | --- |
|  | Malformed and mortality of embryo during hatchery process | Probable cause | Corrective measure  |
| 1 | Chicks with labored breathing |  | Check disease status of breeder flock |
| 2 | Abnormal, weak or small chicks | Small eggs hatch small chicks |  |
| 3 | Crippled and malformed chicks  | Low incubation humidity |  |
| 4 |  | Excessive ventilation rate  | Reduce ventilation rate but maintain minimum air exchange to prevent suffocation of embryos |
| 5 | Sticky embryos (embryos may be smeared with egg contents) |  | Avoid cross breeding. May need secure different breeding stock |
| 6 | Chicks fully formed but died without pip | Improper turning of eggs |  |
| 7 |  | Pullorum disease or other salmonellosis  | Use eggs from disease free sources  |
| 8 | Clear eggs with no embryonic development (infertile) | Egg stored too long or incorrect  |  |
| 9 | Late hatching or not hatching uniformly | Warm and cool spots in incubator due to faulty design  |  |
| 10 | Clear eggs with no embryonic development (infertile) |  | Provide recommended floor space, at least 3 ft2/bird |

Q1/fill in the blanks with the correct answer

Q2/ answer only 3 of the following questions

1. What are the diagnosis of hatch problems (abnormal chicks/ reason)
2. Blood rings (probable cause / corrective measures)
3. Pipped eggs but died without hatching (probable cause / corrective measures)
4. Sticky embryos (embryos may be smeared with egg contents)( probable cause / corrective measures)

Q3/ Write the Stages of embryonic development

Q4/ List Extra-embryonic membranes with explain one of them.