

# POULTRY INCUBATION AND BROODING

A Professional Approach to  
Optimal Results



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## DEDICATION

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**This book is dedicated to the millions of people out there yearning to receive knowledge about incubating and brooding poultry!**

## ACKNOWLEDGMENTS

I am forever grateful for the generosity of the poultry farmers who have shared their knowledge with me, either in presentations, videos, books, forums, or formal research. I am particularly grateful to those whose examples and photos are contained in the book. They have been overwhelmingly generous in sharing their wisdom so that the reader can better understand this amazing concept of incubation and brooding. Finally, I must acknowledge the love, kindness, and patience my wife and sons showed me throughout this process.

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## ABOUT THE AUTHOR

### POULTRY INCUBATION AND BROODING A Professional Approach to Optimal Results



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**Emmanuel Mwesige** is an experienced and knowledgeable business administrator with a passion for writing and agriculture. The author holds a bachelor's degree in Business Administration (Accounting) from Makerere University. Throughout his career, he has dedicated himself to honing his skills and expanding his knowledge in various subjects within the agriculture sector. He possess a deep understanding of the agricultural sector and has embarked on putting in black and white whatever topic he picks interest in. He is authoring a number of books in the area of agriculture!

## PREFACE

The reproduction of the flock from year to year is one of the poultry raiser's most important problems.

To insure success in incubation and brooding, hatching eggs must come from breeding stock of the highest possible quality and free from disease.

Growers find incubators and brooders economical and labour saving in reproducing the flock.

Proper temperature and ventilation and an adequate supply of moisture are essential to success in incubation.

Good breeding calls for temperature control according to the weather and the age of the chicks, plenty of room, not more than 400 chicks in the flock, good ventilation, and clean house and soil.

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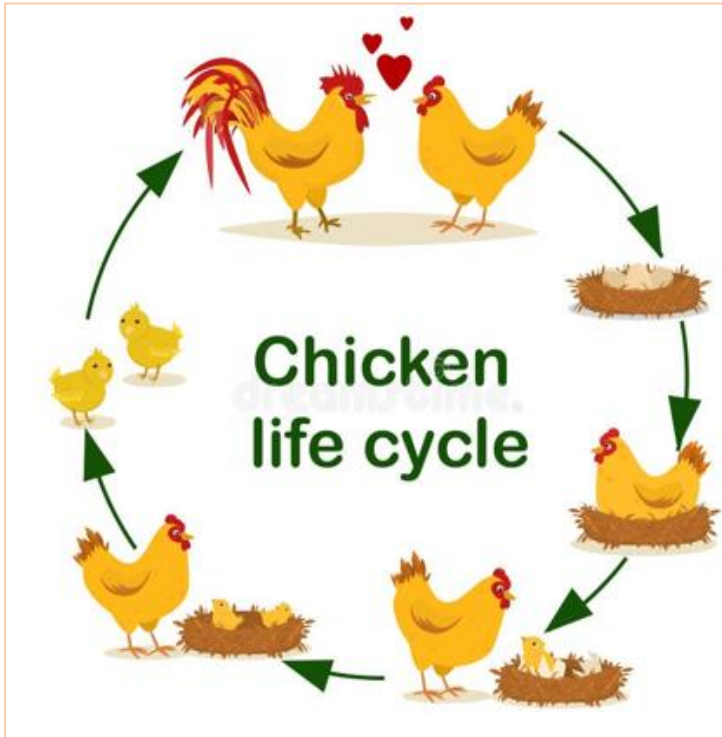


# INTRODUCTION TO INCUBATION AND BROODING

## Under this section we shall cover:

- Understanding the life cycle of poultry
- Selecting the right breeds for incubation
- Types of incubation
- Choosing the right egg incubation
- Selecting eggs for hatching
- Preparing the incubator
- Incubation techniques and best practices
- Temperature, humidity and ventilation control
- Setting eggs
- Turning eggs and managing airflow
- Candling and assessing egg development
- Pre-hatching
- Hatching and caring for chicks

## Understanding the Life Cycle of Poultry



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We all know the age-old question- what came first, the chicken or the egg? And while this questions remains unanswered, there is a lot more to know about a chickens life cycle that we will happily clear up for every potential and actual poultry farmer!

## Egg

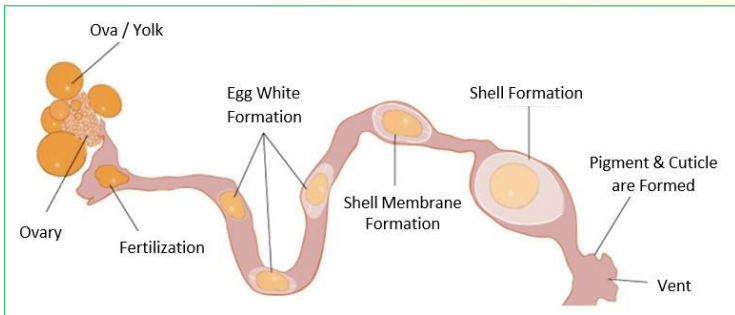
To lay a clutch of fertilized eggs, a hen must have first mated with a rooster. The hen will then form an egg- a process which takes approximately 25 hours.

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This process will begin with the formation of the egg yolk, it is produced by the hens ovary during the ovulation process- the yolk is referred to as the oocyte at this stage. As it travels down the oviduct, it will be fertilized internally by the sperm of the rooster.

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As it continues to travel down the oviduct it becomes covered with a white membrane called ‘vitelline membrane’, as well as some layers of the egg white or ‘albumen’. Still travelling further down the oviduct, a casing for the egg white and yolk will begin to form. Eventually, the shell will be completely developed, and thus the egg is completely formed!

The hen will then lay this new life form in a comfortable and quiet spot. A hen will generally lay a clutch of approximately 12 eggs, with each egg being laid a day apart.



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### Chick



If hatching naturally, the mother hen will sit on the eggs to maintain the optimum temperature so they can develop until it is almost hatching time. Sometimes hens will not take to sitting on their eggs, and so a farmer may need to purchase an incubator and do this step him/herself.

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The chick inside the egg will generally grow for 21 days, using the egg yolk as a means of nutrition as it grows. Along with sitting on the eggs, the hen will also use her beak to turn them to aid their development.

On about day 19 of the incubation period, the chicks will begin the pipping process. This involves the baby chicks using their ‘egg tooth’ to peck a hole in the eggshell around the air sac to access oxygen, before pipping an area large enough for it to be free of its shell. This process can take up to 24 hours and should not be rushed.

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The chicken will emerge with wet ‘down’ feathers, however they dry quickly, and will be extra fluffy and adorable in no time. Most chickens are able to stand and walk about straight after birth, however some may be a bit wobbly at first.



After birth, a baby chicken will need to be placed in a brooder- an indoor space that is heated up by the heat of an infrared lamp. The chickens will remain in the brooder for the first few weeks of their life- they will be fed in the brooder and sleep in the brooder, so it is important that it is cleaned regularly, so the chickens can remain at the height of their health.

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A chick will start developing its first true feathers at around 5 days old, and at approximately 12 days the chick will begin to show defining breed bone

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