EGG
Sp. z o.o. Sp.k

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The effec ... eason on the hatch ... domestic

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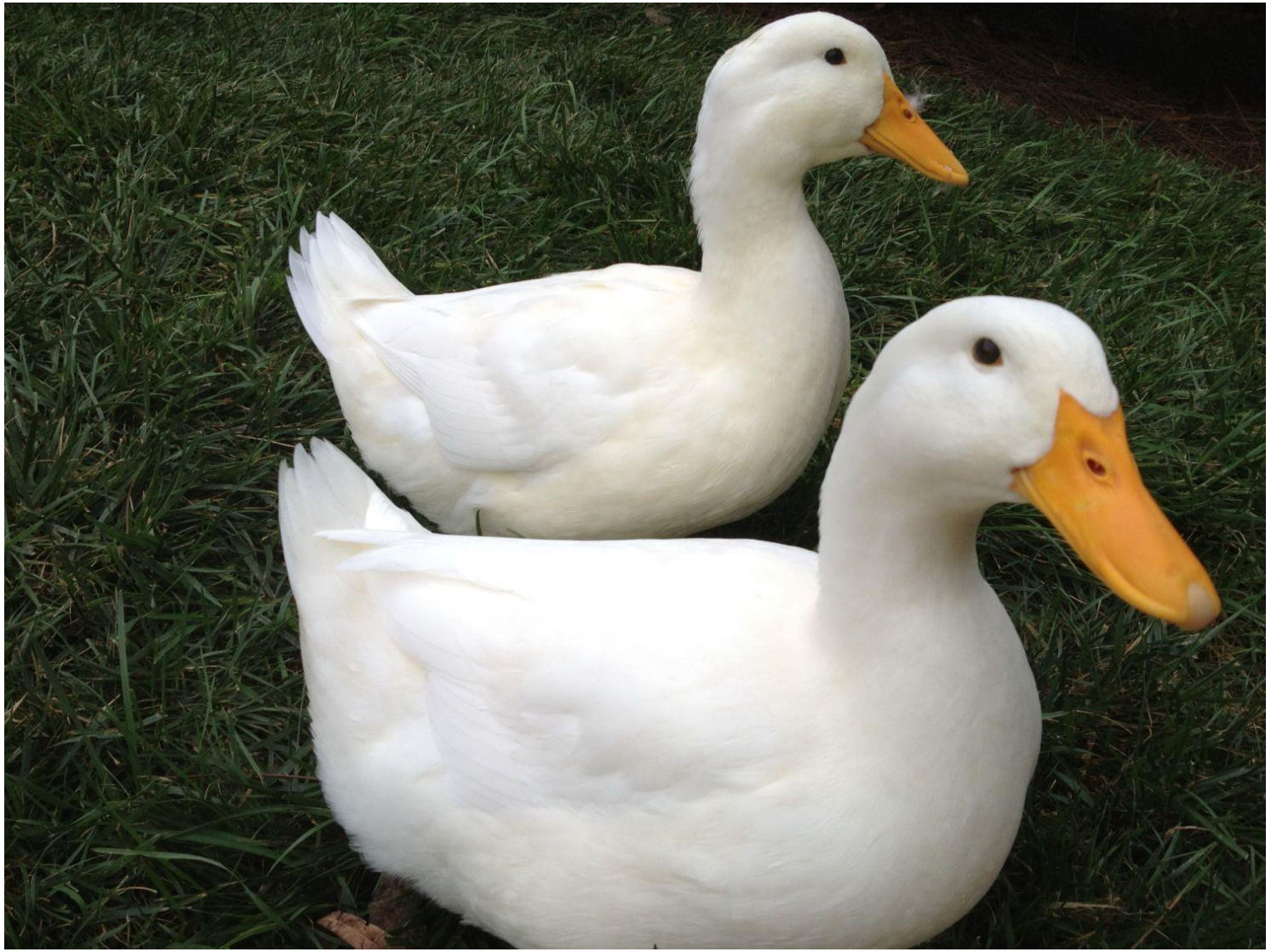
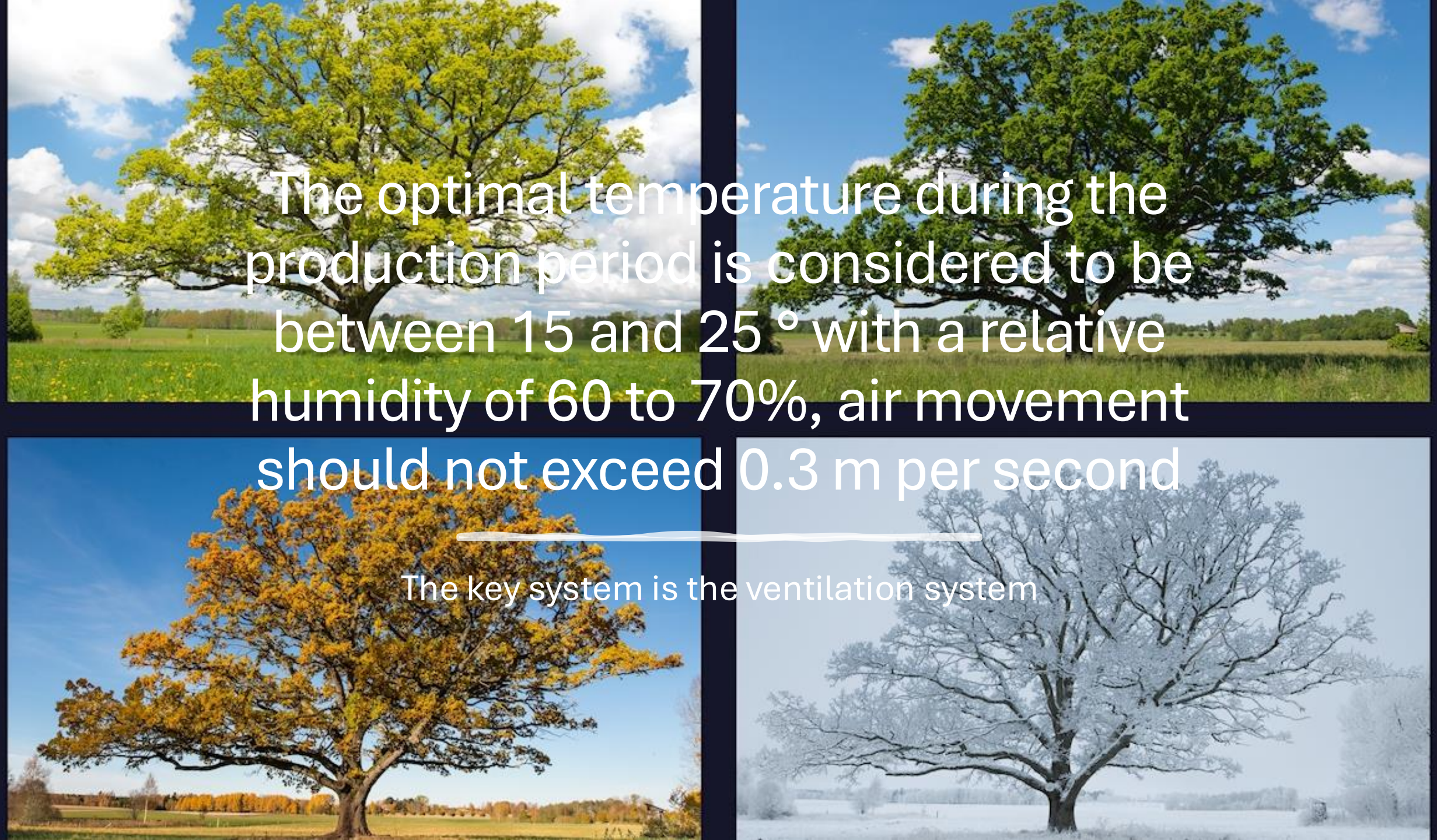
Domestic ducks of the Pekin breed are descended from the wild mallard, which is the most common species of wild animals



The modern line of Pekin ducks belongs to the general utility group and is characterized by high laying performance and good meat quality

The body weight of this breed is:
3.0 to 3.5 kg for females
4.0 to 4.5 kg for males,
while the annual laying yield exceeds 200 eggs

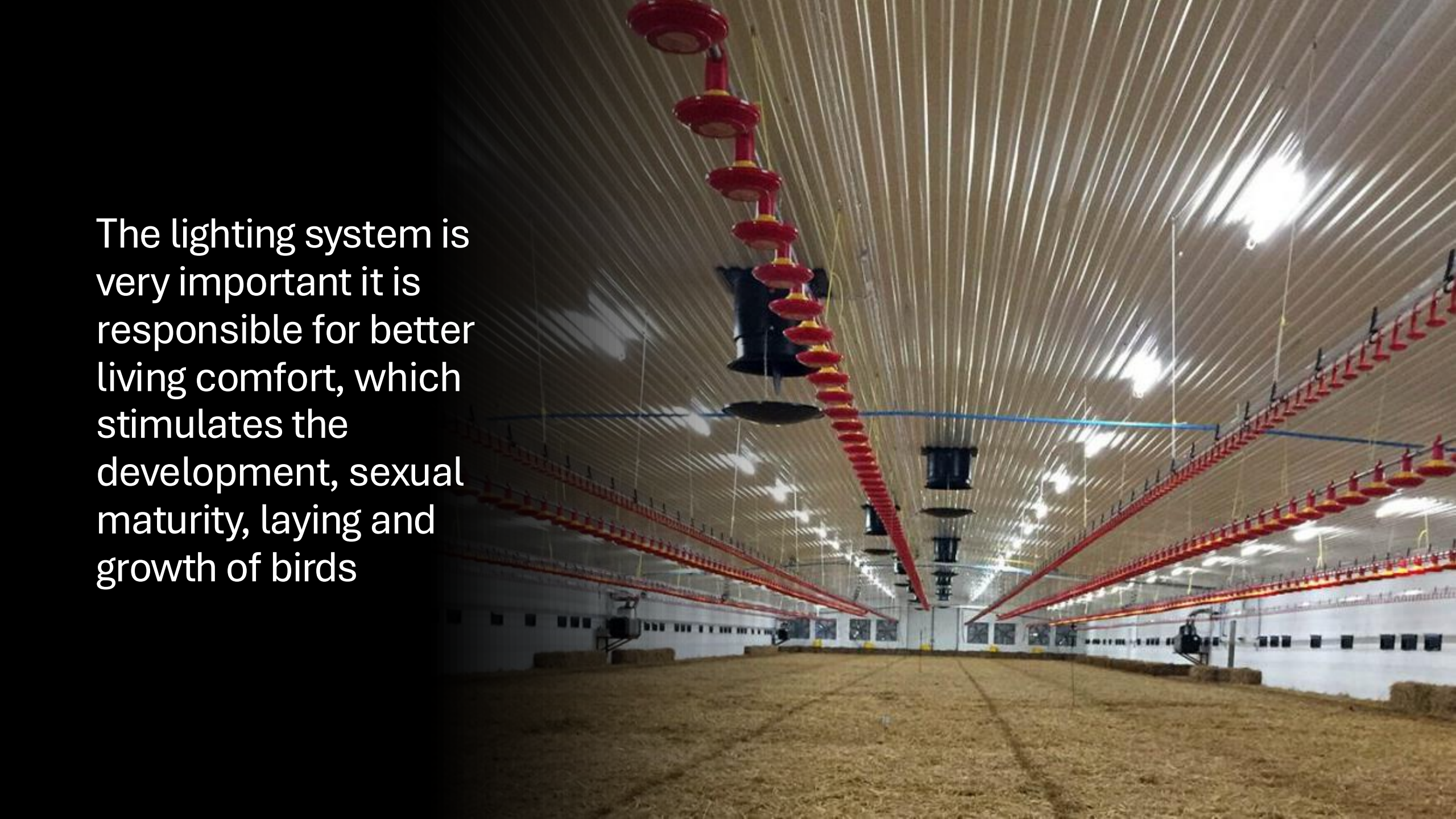
These birds reach full maturity around 25 weeks of age. However, in order to use the full genetic potential of the flock, it is necessary to ensure appropriate conditions in the breading hall



The optimal temperature during the production period is considered to be between 15 and 25 ° with a relative humidity of 60 to 70%, air movement should not exceed 0.3 m per second

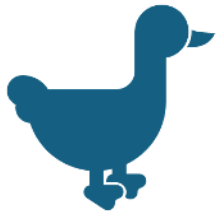
The key system is the ventilation system

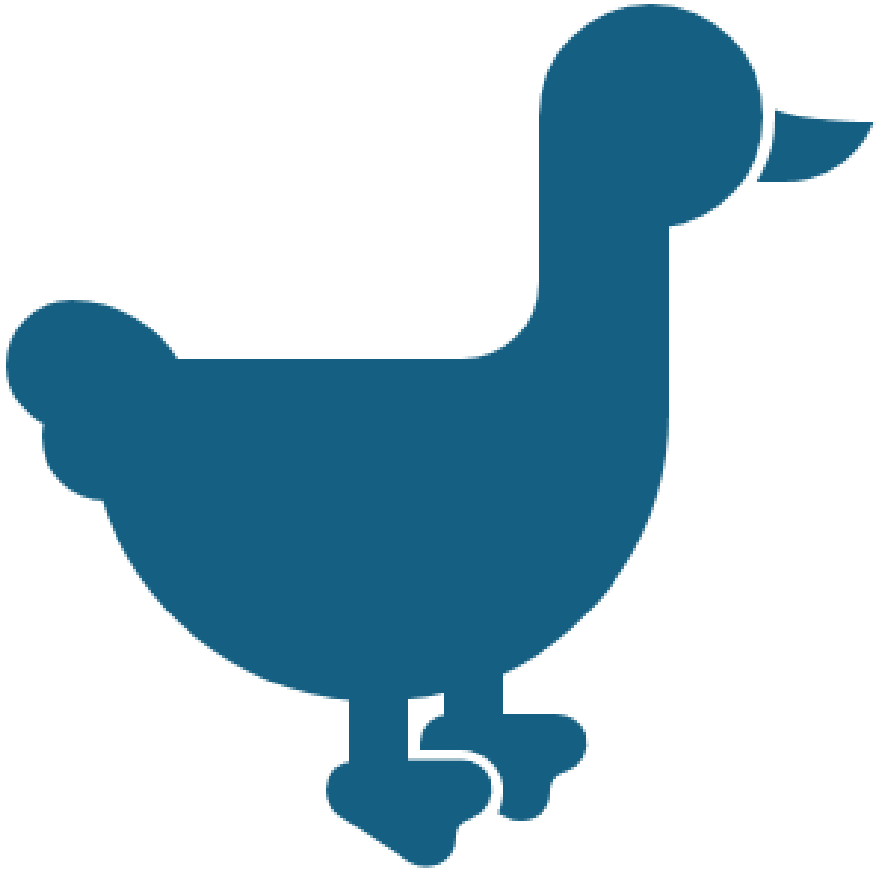
The lighting system is very important it is responsible for better living comfort, which stimulates the development, sexual maturity, laying and growth of birds

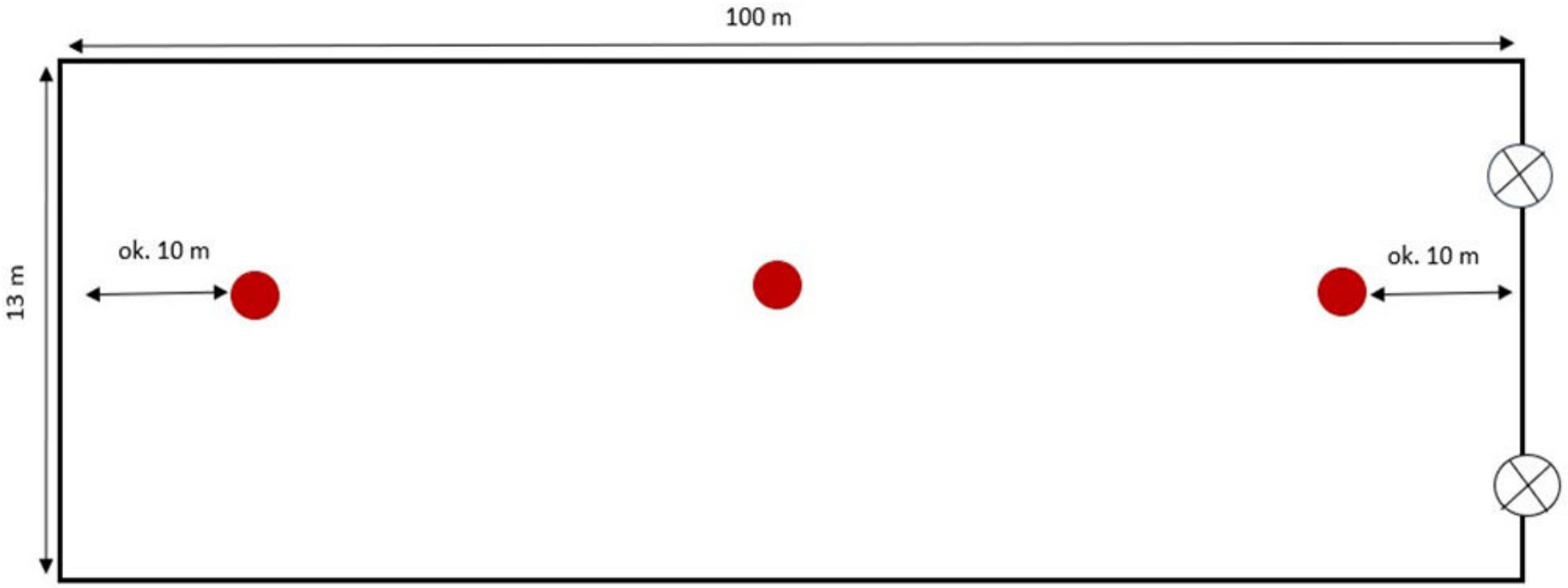


Object:

The aim of the study was to check how the conditions in the buildings where ducks are kept, as well as the storage of eggs and the incubation process, affect the hatching process during the year







microclimatic measurements
Diagrams of drakes with marked measuring points and the location of exhaust fans

Formation of microclimatic parameters in duckhouses of parental flock on 23rd may 2023

Parameters	Outdoor	Duckhouse 1	Duckhouse 2
T [°C]	17.0 ± 0.38	18.6 ± 1.50	17.5±0.36
RH [%]	56.0 ± 1.73	63.7 ± 11.47	68.7 ±4.36
Wind speed [m/s]	0.62 ± 0.49	0.5 ± 0.07	0.25 ±0.16
WBGT [°C]	14.2 ± 0.17	15.3 ± 0.24	15.1 ±0.79
CO_2	0.03	0.08	0.07
NH_3	b.s.	b.s.	7.0
Light [lx]	7,400 ± 4,590	12.1 ± 6.81	11.9± 6.74

b.s. -below measurement sensitivity

Formation of microclimatic parameters in duckhouses of parental flock on 29 th june 2023

Parameters	Outdoor	Duckhouse 1	Duckhouse 2
T [°C]	26.6 ± 2.0	25.3 ± 0.55	25.0±0.55
RH [%]	42.8 ± 4.25	55.1 ± 0.55	52.7 ±1.4
Wind speed [m/s]	0.85 ± 0.41	0.43 ± 0.25	0.26 ±0.25
WBGT [°C]	21.7 ± 2.75	20.7 ± 0.21	20.0 ±0.59
CO_2	0.037	0.028	0.023
NH_3	b.s.	7	b.s.
Light [lx]	20300 ± 19,42	11.67 ± 11.49	15.02± 10.09

The measurements were taken in the spring and summer, were made inside according to the scheme and outside.
Thermal comfort, air quality and lighting were measured at all points.

Data from 859 sets of Hatchery E.G.G. „Wieszowa” from eight parental flocks in subsequent months of the year (2019-2023

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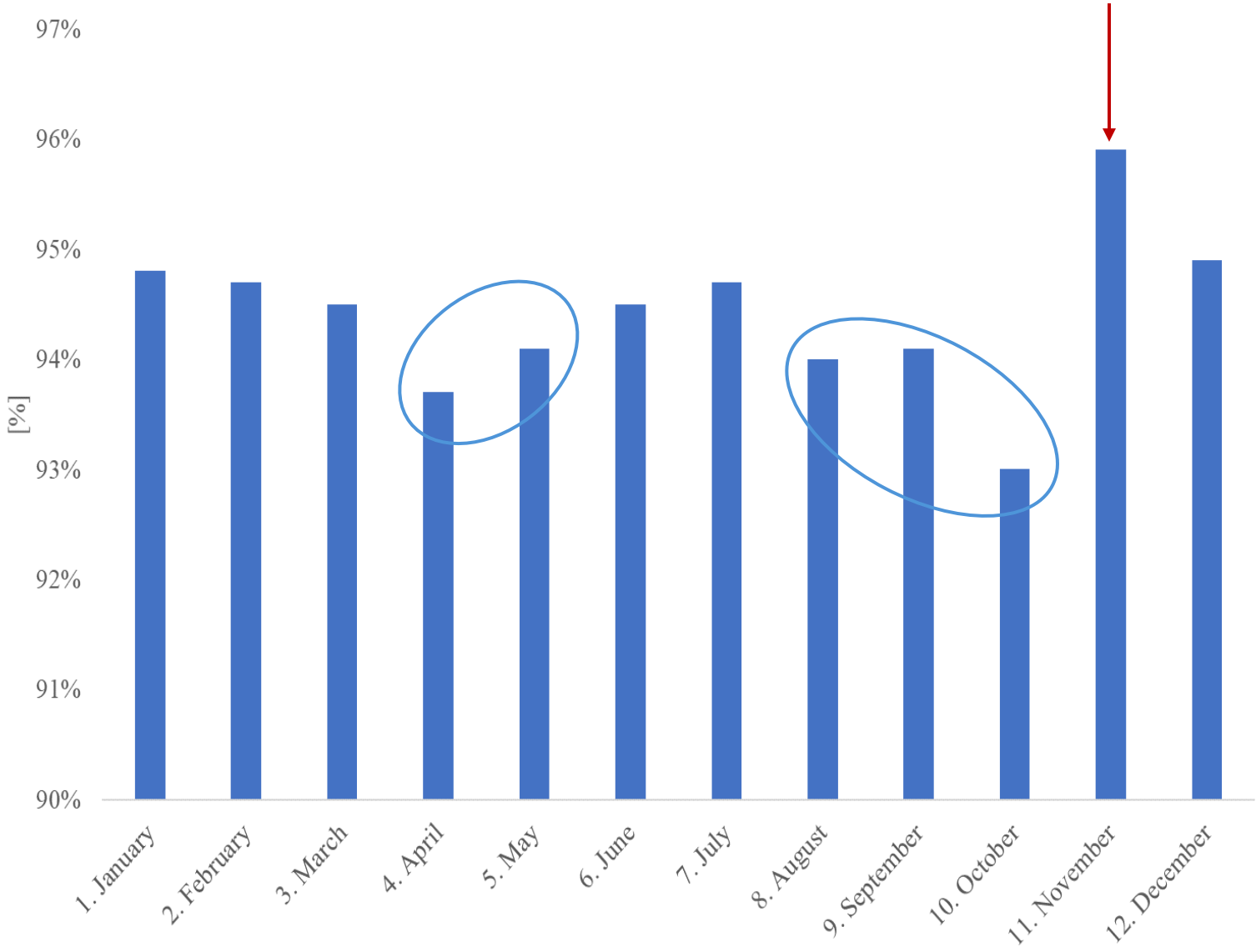
The **fertilization** of eggs in the analyzed period (mean ± SD): 94.5± 2.92%.

Effect of the month of egg collection (P=0.05)

The highest fertilization:
November (95.9±1.66%)

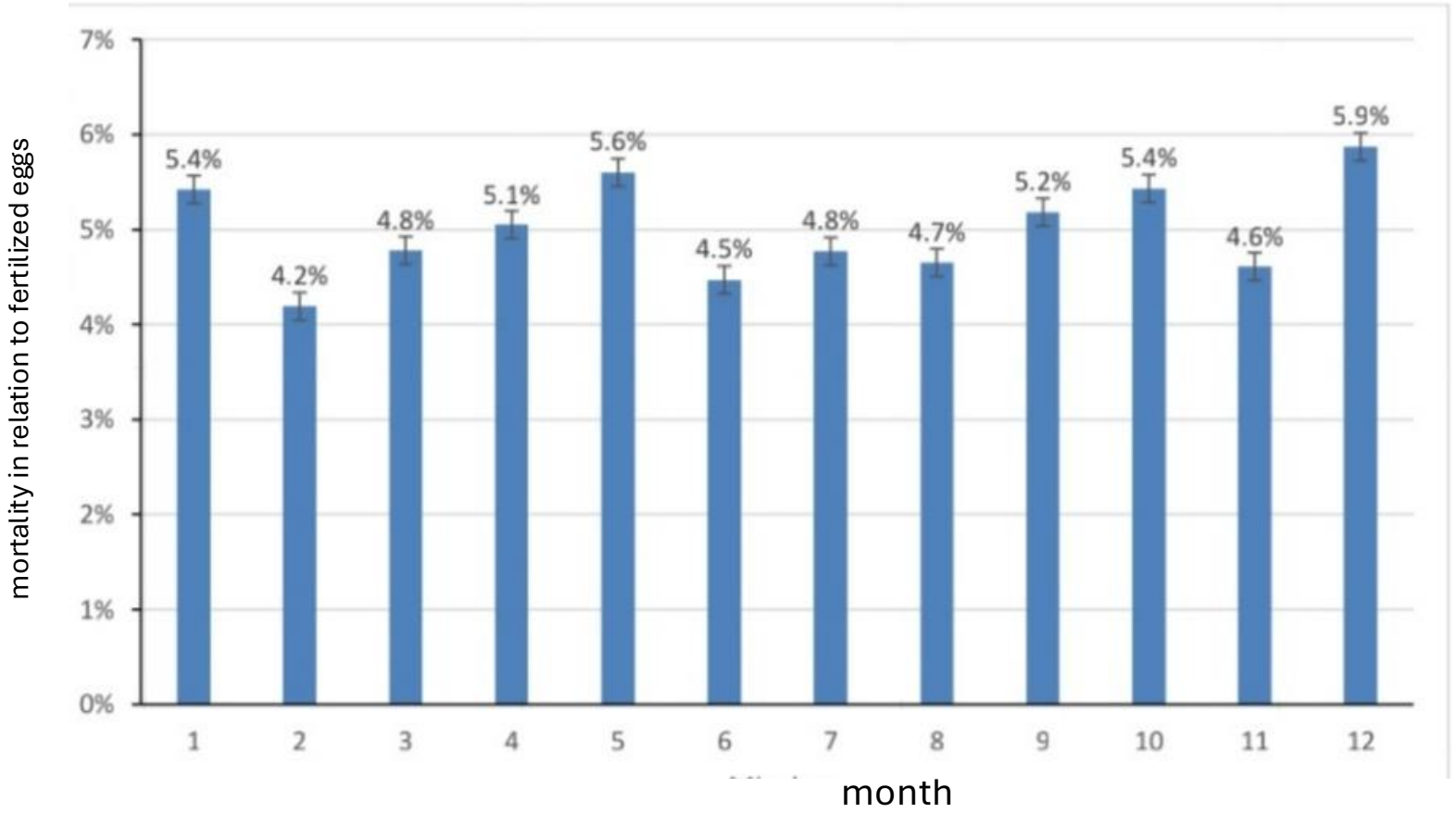
The lowest:
April (93.7±3.64%; P=0.025),
May (94.1±3.15%, P=0.070);
August (94.0±2.91%; P=0.002)
September (94.1±3.53%; P=0.010)
October 93.7±13.60% (P=0.05



The early mortality of duck embryos (E1-E7) depended on the month of egg collection , P=0.007)

The highest:
December (5.9±2.23%)

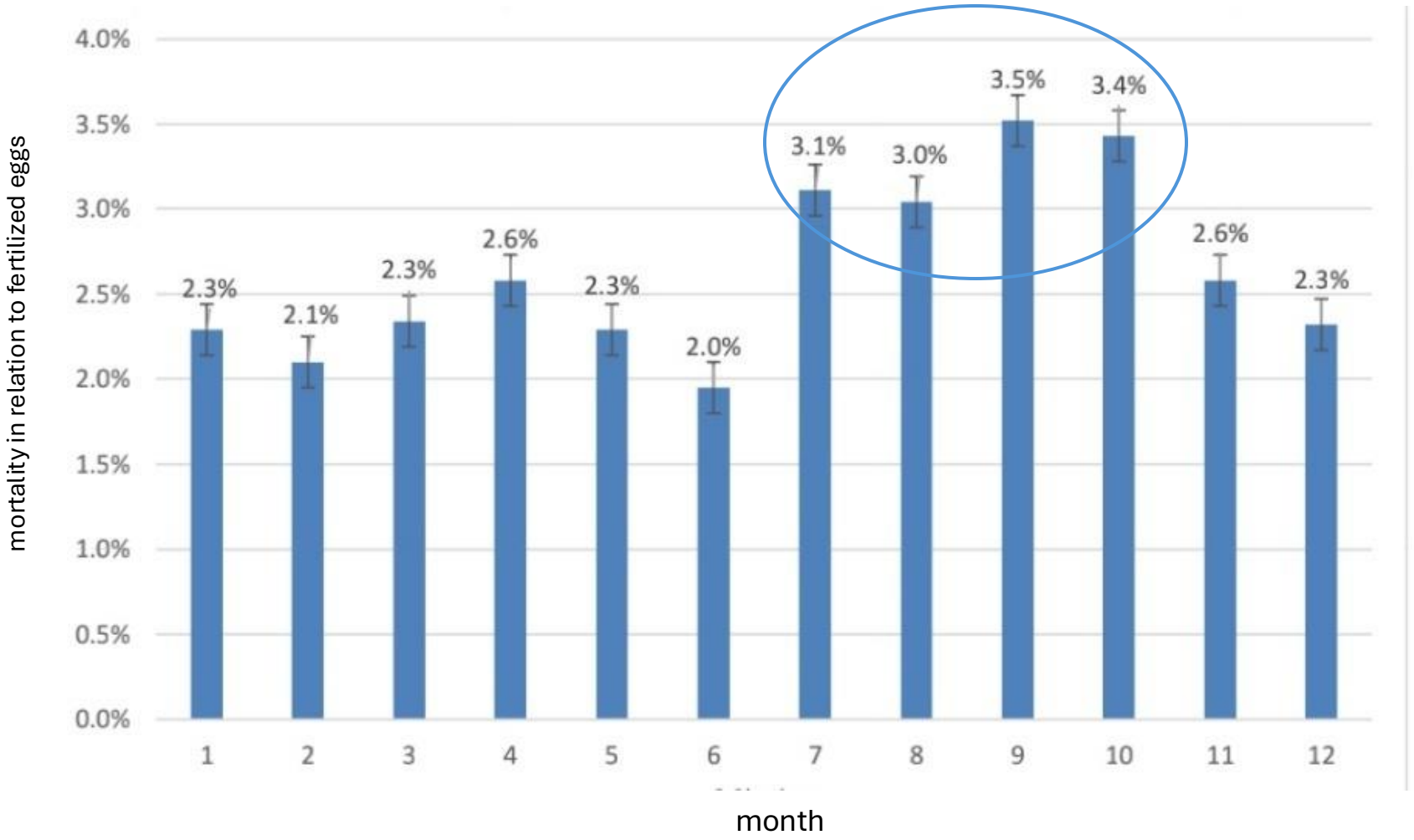
The lowest:
February (4.2 ± 2.68%)



The mortality of duck embryos E8-E24 depended on the month of egg collection , P<0.001)

The highest:
September (3.5±3.01%)
October (3.4 ±4.30%)

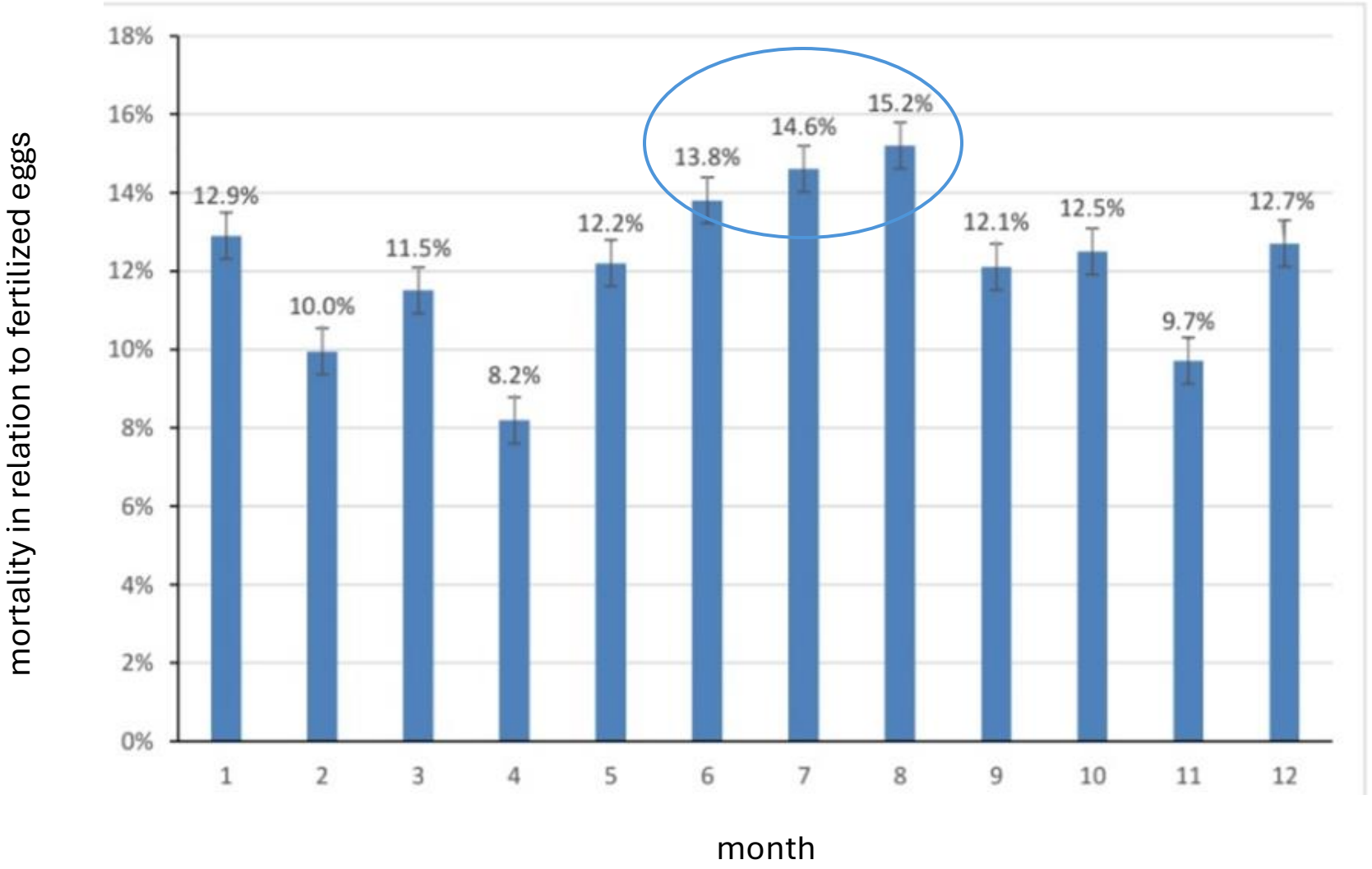
The lowest:
December-June (2.0 - 2.3%)



The **late mortality (**E25-E2) depended on the month of egg collection , P<0.001)

The highest:
Summer!!!!
June (13.8±7.20%)
July (14.6±7.68%)
August (15.2± 4.99%)

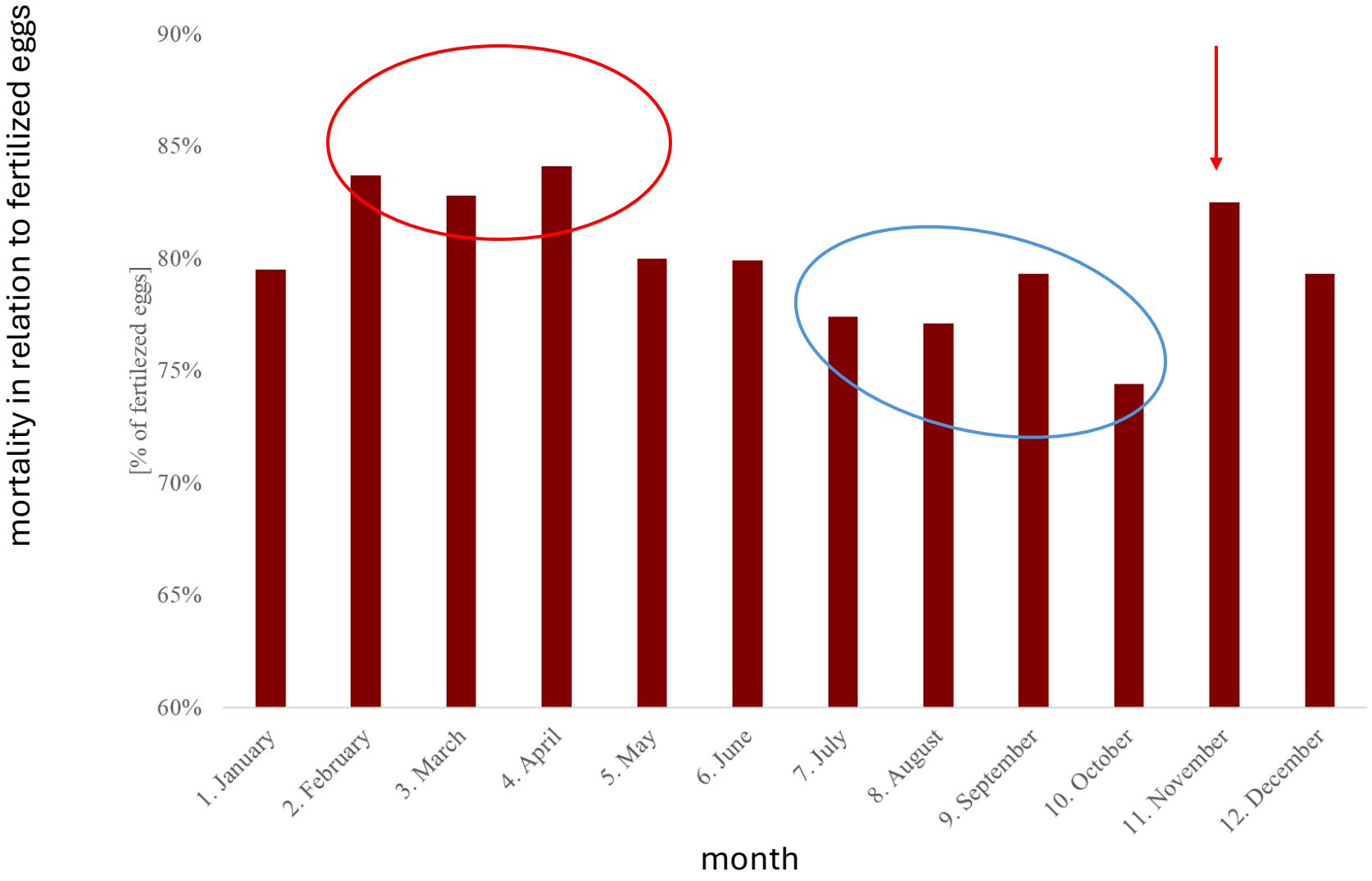
The lowest:
April (8.2 ± 2.58%),
November (9.7 ± 3.24%)
February ((10.0±4.43%)



The **total hatchability of fertelized eggs** depended on the month of egg collection , P<0.001)

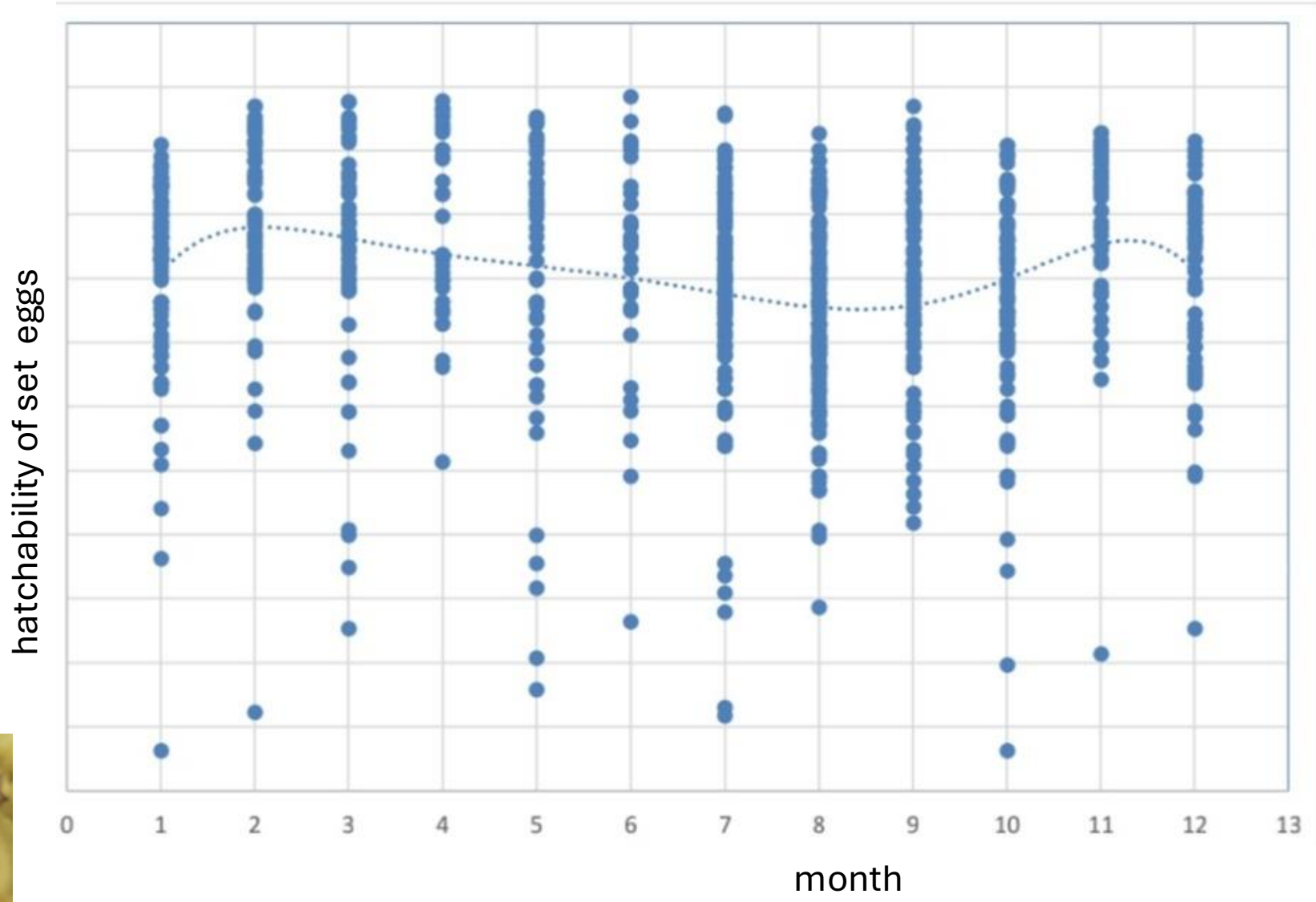
The highest:
February to April (82.8% - 84.1%), as well as in November (82.5 ± 7.0%),

The lowest:
October (74.4±27.70%)
July (77.4 ± 8.92%)
August, (77.1% ± 6.41%)



The highest hatchability of set eggs
decrised during summer month (June 85.1 ± 8.12%; July 84.0 ± 8.69%, and August 83.5± 5.57%)

increased on cold months:
November (89.3±3.32%)
February (89.2±5.48%)
March (87.8 ±7.37%)
April (91.1 ± 2.82%)



As a result, the highest hatchability from fertilized eggs was obtained from February to April (82.8% - 84.1%), as well as in November (82.5 ± 7.0%), while the lowest and at the same time very diverse in October (74.4±27.70%) and summer months (July 77.4 ± 8.92%; August, 77.1% ± 6.41%)

In conclusion, the hatchability results of a domestic duck in artificial broods depend on the month laying. The highest hatchability is observed in February-April, while it decreases in the summer months (June-August). The decrease in hatchability in the summer is mainly due to the increased mortality of embryos during the hatching period.

Thank you for your attention