

# The Comparison of Growth Ability Breed Oravka with Other Dual Purpose Breeds of Hens

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## Abstract

The live weight of Oravka and other pure hen's breed (New Hampshire, Plymouth Rock, Rhode Island) have been detecting in monthly periods. We found statistically significant ( $P < 0.05$ ) difference of higher live weight of New Hampshire from the 8 week of age and statistically significant ( $P < 0.05$ ) lower live weight of Rhode-Island from the 12 week with Oravka. The breed Plymouth Rock had no statistically significant ( $P > 0.05$ ) difference with Oravka. Growth tendency remained unchanged till the end of rearing period at the age of 24 weeks.

**Keywords:** breed, growth ability, live weight, Oravka

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## 1. Introduction

Sprecht (1968) alleged that from the biometric perspective, growth is defined as changes in body length, surface area, volume or mass, occurring in time.

The growth rate is related primarily to genetic factors, whose expression depends on environmental factors (Gerken et al., 2003).

The breed of hen Oravka was created by crossbreeding regional hens with Rhode Island, Wyandotte and New Hampshire (Hrnčár and Weis, 2007).

The original breeding goal to create a dual purpose poultry breed with good egg production, growth ability and their adaptability for an alternative an outdoor rearing was fulfilled by individual stages of breeding programme from the 1950's (Kadlečík et al., 2004).

The aim of this study was compared growth ability of native hen's breed Oravka with other dual purpose breeds of hens (New Hampshire, Rhode Island, and Plymouth Rock).

## 2. Materials and methods

The comparison of growth ability of Oravka with other dual purpose of hens realised in special poultry house for controlled breeds of poultry at University Experimental Farm in Koliňany.

Birds were placed in breeding pen with deep litter. Feeding and watering were *ad libitum*. Feeding of poultry was providing by commercial feed mixtures with identical content during analysed period. Birds were exposed to natural light as a practiced in rural areas of South-West Slovakia.

Birds were weighed in monthly intervals from 1 day to 24 weeks age. Observed period was separated to two parts - from 1 day to 10 weeks of age (both sexes was rearing together) and from 11 to 24 weeks of ages (separate rearing of hens and cocks). From economic causes we observed only growth ability of hens.

## 3. Results and discussion

As shown in Table 1, the initial weight of Oravka was similar in comparison with other breed ( $P > 0.05$ ). This tendency of the minimal

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differences between Oravka and compared breeds was maintained in 4 weeks of age. We found statistically significant difference ( $P < 0.05$ ) of higher live weight of New Hampshire in comparison with Oravka in 8 week of age. Differences between Oravka and Plymouth Rock respectively Oravka and Rhode Island were statistically non significant ( $P > 0.05$ ). Statistical characteristic of differences between Oravka and other dual purpose breeds from 1 day to 8 weeks is shown in Table 2.

Table 3 gives results of live weigh of breeds from 12 to 24 weeks of age. During over period we observed frequently statistically significant ( $P < 0.05$ ) higher live weight of New Hampshire

hens in comparison with Oravka hens. Differences between Oravka hens and Plymouth Rock hens were statistically non significant ( $P > 0.05$ ) during observed period. From 12 to 24 weeks of age Oravka hens were statistically significant ( $P < 0.05$ ) higher than Rhode Island hens. Statistical characteristic of differences between Oravka and other dual purpose breeds from 12 to 24 weeks are providing in Table 4.

The body weights at 16, 20 and 24 weeks of age at all breeds obtained in this study were much higher than body weights observed by Malík and Malíková (1993) under village conditions.

**Table 1.** Live weigh performance of hen's breed from 1 day to 8 week of age

	OR	NH	PL	RI
Mean weight (g)				
1 day	39.11±5.06	38.86±4.99	37.75±4.67	37.34±5.19
4 weeks	362.65±74.16	378.89±68.45	359.27±76.37	351.84±80.05
8 weeks	698.51± 186.82	781.79±192.11	686.58±181.66	657.82±198.41

OR - Oravka, NH - New Hampshire, PL - Plymouth Rock, RI - Rhode Island

**Table 2.** Statistical characteristic of differences between Oravka and other breeds from 1 day to 8 week age

	OR:NH	OR:PL	OR:RI
1 day	ns	ns	ns
4 weeks	ns	ns	ns
8 weeks	+	ns	ns

OR - Oravka, NH - New Hampshire, PL - Plymouth Rock, RI - Rhode Island

ns =  $P > 0.05$ ; + =  $P < 0.05$

**Table 3.** Live weigh performance of hen's breed from 12 to 24 week of age

	OR	NH	PL	RI
Mean weight (g)				
12 weeks	1128.53±118.85	1196.29±104.94	1116.07±111.63	1068.65±121.74
16 weeks	1558.05± 134.65	1660.58±152.08	1549.61±143.78	1449.78±158.89
20 weeks	1871,85±146.86	1989.56±164,32	1870.66±153.75	1745.91±170.23
24 weeks	2169.13±167,84	2213.67±187,58	2152.37±186.92	2053.42±197.54

OR - Oravka, NH - New Hampshire, PL - Plymouth Rock, RI - Rhode Island

**Table 4.** Statistical characteristic of differences between Oravka and other breeds from 12 to 24 week age

	OR:NH	OR:PL	OR:RI
12 weeks	+	ns	+
16 weeks	+	ns	+
20 weeks	+	ns	+
24 weeks	+	ns	+

OR - Oravka, NH - New Hampshire, PL - Plymouth Rock, RI - Rhode Island

ns =  $P > 0.05$ ; + =  $P < 0.05$

#### **4. Conclusions**

Based on these results, it can be concluded that the growth ability of Oravka was similar as Plymouth Rock and higher than Rhode Island. By contrast, Oravka achieved lower growth ability in compared with New Hampshire. In case of New Hampshire, this hen's breed was systematic selected more for meat production.

In present study, body weight of all observed hen's breed was higher in compared with results under village conditions, which might be due to better care and management of poultry under deep litter management.

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