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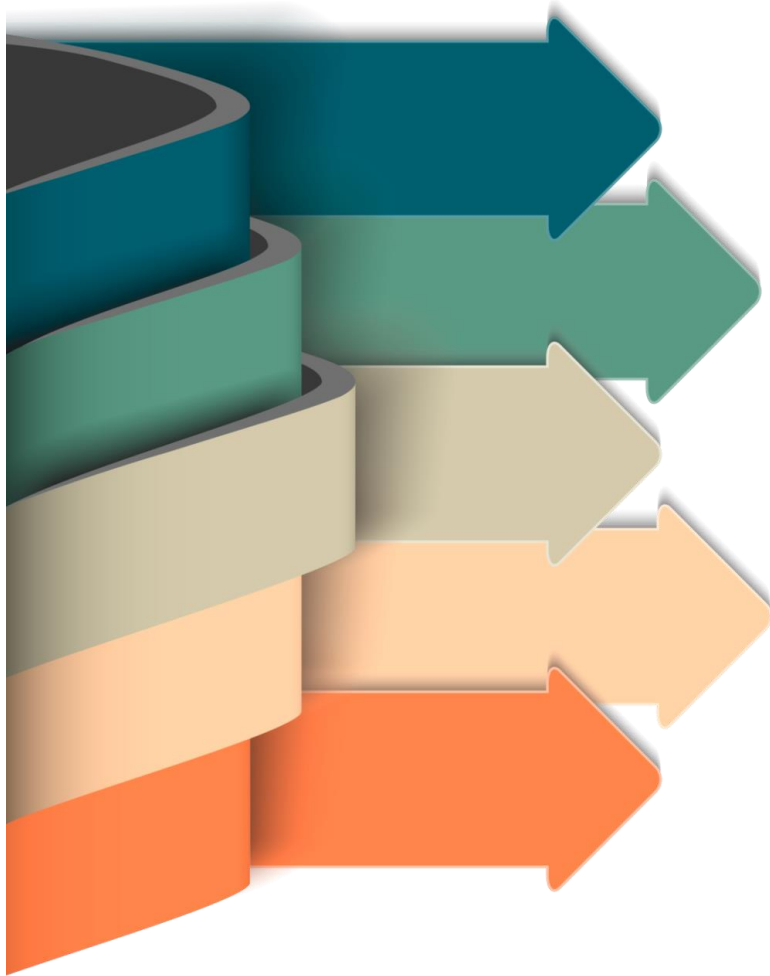
Cattle breeds

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Cattle breeds

Classification of cattle breeds

Dairy breeds

Dual-purpose breeds

Beef breeds

1. Classification of cattle breeds

The State Register of Breeding Achievements of the Russian Federation includes 41 breeds of cattle

A breed is

A large, integral group of farm animals of the same species, formed as a result of human creative effort under specific socioeconomic and natural conditions, characterized by shared origin and biological and economically useful traits that are consistently passed down to offspring.

Any breed has a strictly defined specificity that distinguishes it from other breeds of the same animal species.

A breed can only exist under human control.

A breed is a heterogeneous concept. During the formation and improvement of a breed, several qualitatively distinct groups and types of animals are identified, which form the **breed structure**.

The main structural elements of a breed include offspring, intrabreed types, lines, and families.

Classification of cattle breeds:

by the prevailing productivity type

- Dairy

- Dairy and beef (dual-purpose)

- Beef

by the distribution area

- Transboundary

- Local

Relative number (%) of dairy and dual-purpose cattle and milk yield per the last completed lactation (kg) in controlled herds

Breed	Relative number, %	Milk yield, kg
1. Holstein	54.32	9,526
2. Black-and-White	25.25	7,259
3. Red-and-White	4.18	7,183
4. Simmental	4.10	5,739
5. Kholmogorskaya	3.55	7,482
6. Ayrshire	2.65	7,545
7. Red Steppe	2.54	5,498
8. Yaroslavskaya	1.13	6,590

A total of 2,629.7 thousand animals of 24 breeds were evaluated

Import of cattle in the Russian Federation in 2022.

Breed	Exporting country	Population, heads			
		total	bulls	cows	heifers
1. Holstein	EU, USA, Netherlands	**28,126**	85	225	27,816
2. Simmental	Austria, Germany, Netherlands, Poland, Czech Republic	948	3	–	945
3. Red Danish	Denmark	201	–	–	201
4. Brown Swiss	Hungary	133	–	–	133
5. Jersey	Denmark	85	2	–	83
Total		29,493	90	225	29,178

2. Dairy breeds

External features of dairy cattle:

- An angular body with well-defined skeleton and joints

- A somewhat elongated body; moderately developed muscles; a light, elongated head with thin horns; a long, thin neck with fine skin folding; a long, deep chest with an underdeveloped dewlap

- The withers, back, loin, and rump are straight, long, and broad enough

- The rear third of the body is broad at the hips, hip joints, and pins The tail is long and thin The belly is big, but not pendulous

- The legs are strong, slender, and well-set, with well-defined joints

- The skin is thin and mobile, with delicate, shiny hair

- The udder is cup-shaped or rounded, with evenly developed lobes; large, with glandular structure Milk veins are protruding, with a deep and wide milk well The udder teats are cylindrical or conical

Holstein breed

Breeding place: USA and Canada

Color: black-and-white (dominant)

red-and-white (recessive)

Milk yield: 8,000–10,000 kg

Fat content: 3.8–4.0%

Protein content: 3.2–3.5%

Milk flow rate: 3.5–4.5 kg/min

Live weight of cows: 650–700 kg

Live weight of bulls: 1,000–1,100 kg

Height at the shoulders of cows: 140 cm

Features:

The dairy breed with the greatest milk yield in the world

Excellent morphological and functional properties of the udder; adapted to machine milking

Transboundary

Large animals

Demanding to feeding and housing conditions and compliance with milking technology

Record-breaking milk yields

- The greatest daily milk yield (**109.9** kg): Ubre Blanca cows (Holstein × zebu), Cuba

- Per lactation: **32,804** kg, cow No. 1326 (Holstein breed), USA, Wisconsin

Red-and-White breed

Breeding place: USSR

Color: black-and-white

Milk yield: 6,000–8,000 kg

Fat content: 3.6–3.9%

Protein content: 3.1–3.3%

Milk flow rate: 2.0–2.5 kg/min

Live weight of cows: 500–550 kg

Live weight of bulls: 900–1,000 kg

Height at the shoulders of cows: 130 cm

Features:

Extensive distribution area in the Russian Federation.

Adapted to various natural and climatic conditions of the Russian regions.

Satisfactory beef-making qualities.

Kholmogorskaya breed

Breeding place: Russia, late 18th century

Color: black-and-white

Milk yield: 6,000–8,000 kg

Fat content: 3.8–4.0%

Protein content: 3.2–3.3%

Milk flow rate: 1.6–2.5 kg/min

Live weight of cows: 500–550 kg

Live weight of bulls: 800–900 kg

Height at the shoulders of cows: 130 cm

Features:

One of the oldest Russian breeds

Bred in the Arkhangelsk province.

Strong and hardy animals, resistant to diseases, with a long lifespan.

Satisfactory beef-making qualities.

Ayrshire breed

Breeding place: Scotland

Color: red-and-white with small, irregular red spots

Milk yield: 7,000–8,000 kg

Fat content: 4.0–4.3%

Protein content: 3.2–3.5%

Milk flow rate: 2.0–2.5 kg/min

Live weight of cows: 450–550 kg

Live weight of bulls: 800–900 kg

Height at the shoulders of cows: 125 cm

Features:

Good adaptive qualities

Resistant to many diseases

Long economic lifespan

Transboundary

Small animals

Big, lyre-shaped horns

Yaroslavskaya breed

Breeding place: Russia, Yaroslavl province, early 19th century

Color: black, with white spots on the head, lower part of the legs, belly, and end of tail.

Milk yield: 6,000–8,000 kg

Fat content: 4.0–4.2%

Protein content: 3.2–3.4%

Milk flow rate: 2.0–2.5 kg/min

Live weight of cows: 500–550 kg

Live weight of bulls: 800–900 kg

Height at the shoulders of cows: 125–130 cm

Features:

Bred without using foreign breeds (Great Russian cattle)

The milk is perfect for processing

Widespread in farms of Yaroslavl, Ivanovo, Vologda, and Tver regions

Jersey breed

Breeding place: Jersey Island (UK)

Color: red, light brown

Milk yield: 4,000–6,000 kg

Fat content: 5.0–6.0%

Protein content: 4.2–4.4%

Milk flow rate: 2.0–2.5 kg/min

Live weight of cows: 400–450 kg

Live weight of bulls: 600–700 kg

Height at the shoulders of cows: 120 cm

Features:

Gives milk with the highest fat content

Small animals with small offspring

A distinctly milk breed

The milk is perfect for processing

Transboundary

3. Dual-purpose breeds (dairy and beef)

External features of dual-purpose cattle:

- In general, no animal develops milk and beef traits uniformly; there is a predominance of milk or beef traits, which determines the type of physique.

- Animals with a well-balanced body, strong bones, and dense but not overdeveloped muscles. The chest is deep and broad; the back, loin, and rump are straight.

- The legs are long and strong

- The skin is dense; the hair coat is well-developed.

- Milk traits are well-developed in dairy-and beef cattle, and meat traits in beef-and-dairy cattle.

Simmental breed

Breeding place: Switzerland, the canton of Bern (lowlands)

Color: reddish with white markings

Milk yield: 5,000–7,000 kg

Fat content: 3.8–4.0%

Protein content: 3.2–3.4%

Milk flow rate: 2.0–2.5 kg/min

Live weight of cows: 550–650 kg

Live weight of bulls: 900–1,000 kg

Height at the shoulders of cows: 135 cm

Features:

The oldest stud cattle breed in the world

Large animals

The milk is perfect for processing

Transboundary

The Red-and-White and Sychevskaya breeds have been bred in Russia based on the Simmental breed

Sychevskaya breed

Red-and-White breed

Brown Swiss breed

Breeding place: Switzerland, the canton of Schwyz (highlands)

Color: brown

(light gray to dark brown)

Milk yield: 5,000–7,000 kg

Fat content: 3.8–4.1%

Protein content: 3.2–3.4%

Milk flow rate: 2.0–2.5 kg/min

Live weight of cows: 500–600 kg

Live weight of bulls: 800–950 kg

Height at the shoulders of cows: 130–133 cm

Features:

High adaptability

Large animals

The milk is perfect for processing

Transboundary

Kostromskaya, Brown Caucasian, and other breeds have been bred based on the Brown Swiss breed.

Kostromskaya breed

4. Beef breeds

There are 12 specialized beef breeds in the Russian Federation

External features of beef cattle:

- Small animals with a broad back and rounded ribs. The muscles are well-developed; fatty metamorphosis is possible

- The head is small; the neck is short, thick, and broad. The chest is deep and broad. The breastbone strongly protrudes forward; the dewlap is well-developed.

- The withers are low and broad; the back is flat and broad. The meat triangle has well-developed muscles at the back and down to the kneecap.

- The legs are short, strong, and widely spaced.

- The skin is loose, soft, mobile, and "doughy," with a well-developed adipose tissue

- The hair coat is thick and soft.

- The skeleton is thin and strong.

- The udder is small, poorly developed.

Relative number (%) of beef cattle in controlled herds in Russia

Breed	Relative number
1. Kalmyk	30.5
2. Aberdeen Angus	26.5
3. Hereford	24.2
4. Kazakh Whiteheaded	15.5
5. Galloway	1.0
6. Limousin	0.5
7. Aubrac	0.5
8. Simmental beef breed	0.4
9. Charolais	0.2

Kalmyk breed

Breeding place: Northern China Came to Russia in the 17th century with the migrating Kalmyks

Color: red with white markings on the head and lower body

Live weight of cows: 420–500 kg

Live weight of bulls: 750–850 kg

Height at hips of cows: 126–129 cm

Slaughter yield: 55–60% (max 65%)

Carcass with good fat deposits

Features:
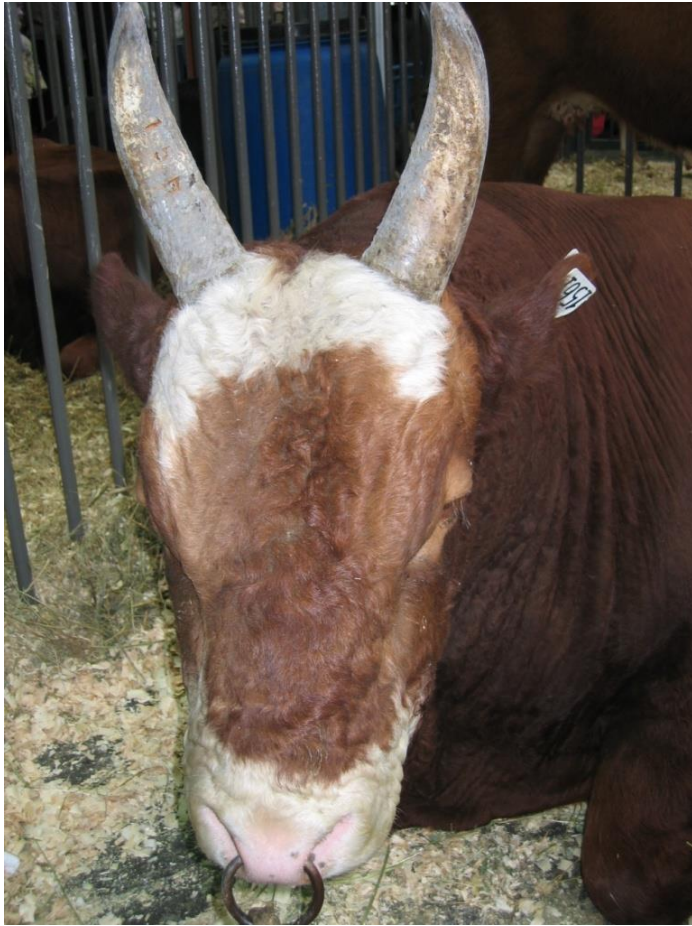
No poll; the horns are in the same plane as the forehead

Small aminals

Hardy and undemanding; make excellent use of pastures

Well-developed maternal instinct in cows

Main breeding areas: Republic of Kalmykia; Astrakhan, Orenburg, and Rostov regions; Stavropol Territory

Aberdeen Angus breed

Breeding place: UK (Scotland)

Color: black. Hornless.

Live weight of cows: 450–550 kg

Live weight of bulls: 750–950 kg

Height at hips of cows: 119–121 cm

Slaughter yield: 65–70%

Average daily live weight gain: 900–1,000 g

Marbled, fine-grained meat.

Features:

Precocious breed.

Live weight of calves by weaning: 200–230 kg

Feed consumption to obtain 1 kg live weight: 6.5–7 EFU

Small animals with small offspring (birth weight of calves: 24–27 kg).

Suitable for adaptive beef production technology

Transboundary.

Hereford breed

Breeding place: UK (England)

Color: red with white head, lower parts of the legs, and lower body

Live weight of cows: 500–580 kg

Live weight of bulls: 800–900 kg

Height at hips of cows: 125–127 cm

Slaughter yield: 60–70%

Average daily live weight gain: 1,000–1,100 g

Marbled meat.

Features:

Precocious breed.

Small animals.

Adaptive.

The carcass without excessive fat;

the meat is tender, with good palatability traits

Transboundary. Bred on all continents; the most abundant beef cattle breed.

Charolais breed

Breeding place: France (Burgundy)

Color: pale-yellow (yellow to white).

Live weight of cows: 600–650 kg

Live weight of bulls: 1,000–1,200 kg

Height at hips of cows: 135–137 cm

Slaughter yield: 65–70%

Average daily live weight gain: 1,000–1,200 g

Marbled meat.

Features:

Large animals

Large offspring (live birth weight of calves: 40–48 kg)

A long period of intensive muscle tissue growth

Hardy animals with a long economic lifespan

Low bone mass of carcasses allows obtaining extra heavy carcasses with a large amount of muscle tissue

Transboundary

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Thank you!