

# Animal production statistics – Methodology

## I. Basic determination of the sector

Animal production statistics focuses on livestock farming (A) and meat production (B).

### A. Livestock statistics

The livestock statistics provides information on livestock numbers and animal production for agricultural holdings that keep livestock and are registered in the Farm Register.

The agricultural holding (statistical unit) means a single unit, both technically and economically, that has a single management and that undertakes agricultural activities, either as its primary or secondary activity. Statistical units are legal as well as natural persons.

**Agricultural activities** are, according to the European statistical classification of economic activities (NACE), the following activities:

- 01.1 Growing of non-perennial crops
- 01.2 Growing of perennial crops
- 01.3 Plant propagation
- 01.4 Animal production: from the class 01.49 Raising of other animals, only a) raising and breeding of semi-domesticates or other live animals (except insects); and b) bee-keeping, production of honey and beeswax
- 01.5 Mixed farming
- 01.6 Support activities to agriculture and post-harvest crop activities: only maintenance of agricultural land in good agricultural and environmental condition is included.

The Farm Register is administered by the Czech Statistical Office on the basis of § 19a of the Law No 89/1995 Coll., on the State Statistical Service. The criteria for involvement of a holding in the Register are stated by the Decree of the Czech Statistical Office No 126/2001 Coll. and are as follows:

- a) utilised agricultural area of 1 hectare and more;
- b) at least 1 500 m<sup>2</sup> of grown specialty crops (vineyards, hop gardens, intensive orchards, flowers or ornamental woody plants, vegetables, aromatic plants, medicinal plants, seeds, nurseries etc.);
- c) at least 300 m<sup>2</sup> of greenhouses and/or hotbeds;
- d) farming of livestock from 1 head of cattle, or 2 head of pigs, or 4 head of sheep, or goats, or 50 head of poultry, or 100 head of rabbits, or 100 head of fur animals, or
- e) freshwater fish farming on water bodies, irrespective of their size.

### B. Meat production statistics

The meat production statistics provides information

- a) on slaughtering of livestock and meat production in slaughterhouses that are registered under the State Veterinary Administration and that are approved for slaughtering of animals whose meat is intended for human consumption
- b) on slaughtering of livestock out of registered slaughterhouses, mostly for own consumption in households.

The animal production statistics geographically covers the entire territory of the Czech Republic; its outputs are broken down by region (NUTS 3 level; CZ010 Hlavní město Praha and CZ020 Středočeský kraj being merged) or coherence region (NUTS 2 level) according to the common classification of territorial units for statistics (CZ-NUTS).

## II. Data source

Statistical surveys are the main data source for animal production statistics; other data sources, e.g. data from statistical surveys of the Ministry of Agriculture of the Czech Republic (hereafter MoA), expert estimations, and data from the Central Animal Register are used as well.

### A. Livestock statistics

#### 1. Statistical surveys

##### 1.1. Questionnaire on cattle production (Zem 1-02):

Indicators surveyed:

- Number of calves born and calves lost by death (for a 1<sup>st</sup> half-year and a calendar year)
- Number of animal days of cows (for a 1<sup>st</sup> half-year and a calendar year)
- Milk production and production of cattle for slaughter (for a 1<sup>st</sup> half-year and a calendar year)
- Number of cattle in a detailed breakdown by category (as at 30 June and 31 December)

##### 1.2. Questionnaire on pig production (Zem 2-02):

Indicators surveyed:

- Number of piglets born and piglets lost by death (for a 1<sup>st</sup> half-year and a calendar year)
- Number of animal days of sows (for a 1<sup>st</sup> half-year and a calendar year)
- Production of pigs for slaughter (for a 1<sup>st</sup> half-year and a calendar year)
- Number of pigs in a detailed breakdown by category (as at 30 June and 31 December)

##### 1.3. Yearly questionnaire on poultry production (Zem 3-01):

Indicators surveyed:

- Production of eggs for consumption (for a calendar year)
- Number of animal days of laying hens (for a calendar year)
- Production of poultry for slaughter (for a calendar year)
- Number of poultry [by species and category](#) (as at 31 December)

#### [Livestock survey \(Zem 1-01\):](#)

[Withdrawn from 2023 onwards in order to harmonise the reference date with the requirements of European statistics.](#)

### B. Meat production statistics

#### 1. Statistical surveys

##### 1.1. Monthly questionnaire on livestock slaughtering (Zem 1-12):

Indicators surveyed (for a calendar month):

- Number and live weight or slaughter weight of slaughtered animals (cattle, pigs, sheep, goats, horses)

##### 1.2. Monthly questionnaire on purchases, stocks, sales, and prices of poultry and poultry products (Drůb (MZe) 4-12):

Indicators taken as aggregations for CZ (for a calendar month):

- Live weight of slaughtered poultry (in a detailed breakdown by category)
- Estimated average live weight in terms of conversion coefficients (in a detailed breakdown)

#### 2. [Administrative data sources, data taken from other sources](#)

##### 2.1 [Expert estimates of slaughtering out of slaughterhouses \(MoA\)](#)

Indicators taken for a calendar month:

- Estimated number and live weight or carcass weight of animals slaughtered out of slaughterhouses; provided once a year (pigs, sheep, goats, poultry)

##### 2.2 [Animal Register \(MoA\)](#)

Indicators taken for a calendar month:

- Number of animals (cattle) slaughtered out of slaughterhouses; provided monthly

**Specimens of questionnaires** are available at:

<http://apl.czso.cz/pll/vykazy/pdf1> (questionnaires of the CZSO)

<http://eagri.cz/public/web/mze/ministerstvo-zemedelstvi/statistika/> (questionnaires of the MoA)

**The content and purpose of statistical surveys, the range of reporting units, the method of statistical surveys, the periodicity and deadlines for the data provision** are specified in the Decree on the Program of Statistical Surveys for the relevant calendar year.

### **III. Statistical population and sample selection, methods of imputations and estimation**

#### **A. Livestock statistics**

Statistical surveys in holdings dealing with livestock farming are conducted in the form of sample surveys with stratified sampling. The Farm Register is the basis for sampling of responding units. The Farm Register is continuously updated until the date of creation of the statistical population.

Statistical populations for particular surveys include holdings registered as active in the Farm Register dealing with farming of:

- Cattle, pigs, horses, sheep, goats, and poultry (for the questionnaire Zem 1-01)
- Cattle (for Zem 1-02)
- Pigs (for Zem 2-02)
- Poultry (for Zem 3-01)

or

- Not keeping any livestock included in the survey but utilising the agricultural land

or

- Not utilising the agricultural land but dealing with animal production other than surveyed (NACE 01.4, except 01.49) or with mixed farming (NACE 01.50)

Samples for particular surveys are set from the population on the basis of affiliation of each unit to a defined stratum.

Criteria for involvement of each unit to particular stratum:

- size category, by number of livestock;
- agricultural production region, by location of the holding;
- region, by location of the holding.

Certain sampling rate based on the size category is assigned to each stratum. The units with the sampling rate under 100% are generated from the population using random number generation without replacement.

Weighting is used for estimation of the non-surveyed part of the population. Values obtained in the strata with the sampling rate under 100% are weighted using coefficients according to the percentage of selected units.

The values for responding units from the sample that did not provide their data (non-response) are replaced by average values in each stratum.

Statistical indicators on cattle and pig production for the 2<sup>nd</sup> half of the year are calculated as the difference between the values of the indicators from the respective questionnaire for the calendar year and for the 1<sup>st</sup> half of the year.

#### **B. Meat production statistics**

Statistical surveys on meat production are conducted as exhaustive surveys (censuses) in slaughterhouses registered under the State Veterinary Administration. The list of slaughterhouses is updated twice a year.

The questionnaire Zem 1-12 on slaughtering of livestock allows the responding unit to report either the live weight of animals or the carcass weight. The non-surveyed weight is calculated as follows:

- Live weight in case that carcass weight is reported = carcass weight \* coefficient
- Carcass weight in case that live weight is reported = live weight / coefficient

The coefficient used are shown in the Table 1:

Table 1 Recalculation coefficients

Animal species and category	Coefficient*	Comments
Calves	1.69	Recommendation of the MoA; 1.285 until 2015
Young cattle	1.836	
Bulls, bullocks	1.82	
Heifers	1.89	
Cows	1.94	
Pigs other than sows and boars	1.3	
Sows and boars	1.53	
Sheep and goats	2.244	
Lambs	2.346	
Horses	1.94	

\*coefficient = 1/carcass yield

The live/carcass weight of cattle slaughtered out of slaughterhouses is calculated as the number of animals slaughtered out of slaughterhouses taken from the external source multiplied by average live/carcass weight of animals slaughtered in slaughterhouses.

Calculations of non-surveyed indicators of poultrymeat production are based on data taken from the statistical survey of the MoA and the estimated average live weight provided by the same ministry:

- Carcass weight = live weight \* carcass yield
- Number of slaughtered poultry = live weight / average live weight by species

The values of carcass yield used are shown in the Table 2:

Table 2: Carcass yield of poultry

Animal species and category	Carcass yield	Comments
Chicken	0.65	The carcass yield corresponds to the definitions of poultrymeat not cut in pieces, without giblets, as used in the Combined Nomenclature; without giblets since 2012
Hens	0.65	
Turkeys	0.73	
Ducks	0.63	
Geese	0.75	
Others	0.65	

#### IV. Indicators published

The STAPRO code is a four-digit code of the statistical variable used in the Statistical meta-information System of the CZSO; it is indicated in brackets after the name of the variable.

##### A. Livestock statistics

###### 1. Main statistical variable

**Number of livestock (5560):** The number of livestock as at a specified day

###### 2. Other statistical variables

**Number of livestock live born (5637):** The number of livestock born presenting signs of life.

**Number of livestock lost by death (5640):** The number of livestock lost by death until a specified age (calves until 3 months, piglets until weaning).

**Number of animal days of livestock (5643):** the number of days, in which every particular livestock individual was kept (fed, nursed).

**Production of animals for slaughter (5651):** the quantity of livestock heads in live weight, which were taken to the market for the purpose of slaughtering, and also of livestock slaughtered at own slaughterhouses (abattoirs), at other party slaughterhouses for wage, or out of any slaughterhouse.

**Production of animal products – cow's milk (5648):** the quantity of animal products, which result from animal production – cow's milk. Includes milk both milked and sucked by suckling calves of dairy cows. Milk sucked from cows other than dairy ones is excluded.

**Production of animal products – eggs for consumption (5659):** the quantity of animal products, which result from animal production – hen's eggs for consumption.

Eggs for consumption: hen's eggs intended for human consumption, in shell, fresh. Eggs from pullets, if they can be separated on the farm, are excluded.

### 3. Derived statistical variables, yield indicators

**Number of livestock per utilised agricultural area (7264):** the number of livestock as at a specified day related to the size of the utilised agricultural area.

Utilised agricultural area: includes arable land, permanent grasslands, vineyards, hop gardens, orchards, gardens, and other permanent crops.

**Number of livestock per arable land (7269):** the number of livestock as at a specified day related to the size of the arable land.

Arable land: Utilised arable land, on which crops for production purposes are grown in a regular sequence, or areas of arable land available for crop production but set aside (fallow land). Areas under glass or high accessible cover are included as well.

**Number of live-born animals per number of females (6123):** the number of livestock born presenting signs of life divided by the average number of females or a multiple thereof (e.g. calves per 100 cows, piglets per one sow).

**Number of weaned animals (6114):** the number of livestock that have survived to a certain point of time (e.g. calves until 3 months, piglets until weaning). It is calculated as the difference between the number of live-born animals and the number of animals lost by death.

**Number of weaned animals per number of females (6119):** the number of livestock that have survived to a certain point of time (e.g. calves until 3 months, piglets until weaning) divided by the average number of females or a multiple thereof (e.g. calves per 100 cows, piglets per one sow).

**Average milk yield (6130):** the average quantity of milk milked from one cow over a certain period of time (e.g. day, half-year, year)

**Average egg yield (6131):** the average quantity of eggs laid by one hen over a certain period of time (quarter, year)

## B. Meat production statistics

### 1. Main statistical variable

**Livestock slaughtered (5660):** the variable is a common expression for meat production indicators (number of slaughtered animals, live weight, carcass weight).

The number of slaughtered animals expresses the number of animals whose meat is intended for human consumption.

The live weight of slaughtered animals expresses the live weight of animals before their slaughter, expressed as the empty body weight.

The carcass weight expresses the weight of a cold carcass (obtained by subtraction of 2% of the weight recorded warm, i. e. 60 min after bleeding at the latest for cattle and 45 min after bleeding at the latest for pigs)

The carcass means:

- for cattle: the whole body of a slaughtered animal as presented after bleeding, evisceration and skinning, presented without the head (separated from the carcass at the atloido-occipital joint); without the feet (severed at the carpometacarpal or tarsometatarsal joints); without the organs contained in the thoracic and abdominal cavities with or without the kidneys, the kidney fat and the pelvic fat; and without the sexual organs and the attached muscles and without the udder or the mammary fat;
- for pigs: the body of a slaughtered pig, bled and eviscerated, whole or divided down the mid-line, without tongue, bristles, hooves, sexual organs, flare fat, kidneys and diaphragm;
- for sheep and goats: the whole body of a slaughtered animal as presented after bleeding, evisceration and skinning, presented without the head (separated at the atloido-occipital joint); without the feet (severed at the carpometacarpal or tarsometatarsal joints); without the tail (severed between the sixth and seventh caudal vertebrae); without the organs contained in the thoracic and abdominal cavities (except the kidneys and kidney fat); and without the udder and sexual organs; the kidneys and kidney fat are part of the carcass;
- for horses: the body of a slaughtered animal as presented after bleeding, evisceration and skinning, without the head, the tail, the udder and parts of limbs; kidneys and kidney fat are part of the carcass; the pelvic fat is not included;
- for poultry: animal plucked and drawn, without head and feet and without neck, heart, liver and gizzard, known as '65 % chicken', or otherwise presented.

The items of the nomenclatures of the statistical meta-information system used in animal production statistics are listed in the Annex.

## V. Retroactive corrections, revisions, data improvement procedures

Retroactive corrections and revisions are usually not conducted in the animal production statistics.

## VI. Comparability

### 1. Comparability over time

#### A. Livestock statistics

The data are comparable since 2002 taking into account the changes in the classification.

#### Changes in the breakdown of the item *cattle/bovines aged up to 1 year*:

Until 2016: the sum of items *calves* (aged up to 8 months) and *young cattle* (aged 8-12 months)

Since 2017: the sum of items *calves aged up to 6 months* and *calves aged 6-12 months*

The aggregate *cattle/bovines aged up to 1 year* is comparable.

#### B. Meat production statistics

The data are comparable since 2002 taking into account methodological changes.

Methodological changes:

#### Definition of calves and young cattle:

Until 2008: *Calves* = cattle/bovines with a live weight less than 300 kg

Since 2009: *Calves* = cattle/bovines aged up to 8 months

*Young cattle* = cattle/bovines aged 8-12 months

#### Poultrymeat:

Without giblets since 2012

### 2. Comparability with other outputs

The outputs are comparable with the Integrated Farm Survey (IFS) in the indicator Number of livestock taking into account the threshold values for including of responding units to IFS.

### 3. International comparability

The data on animal production statistics are comparable at the international level. Animal production statistics in the European Union are provided for by Regulation (EC) No 1165/2008 of the European Parliament and of the Council of 19 November 2008 concerning livestock and meat statistics and repealing Council Directives 93/23/EEC, 93/24/EEC and 93/25/EEC.

### VII. Seasonal adjustment

No seasonal adjustment is carried out in animal production statistics.

### VIII. Data dissemination

**Publications:** <https://www.czso.cz/csu/czso/agriculture-publications>

- Livestock Survey - as at 1 April
- Cattle production (semiannual)
- Pig production (semiannual)
- Poultry production (annual)
- Livestock slaughtering (monthly)

**Public database:** <https://vdb.czso.cz/vdbvo2/faces/en/index.jsf?page=statistiky#katalog=30840>

**News Releases:**

- Animal production (quarterly) <https://www.czso.cz/csu/czso/agriculture>

**Time series:** [https://www.czso.cz/csu/czso/zem\\_ts](https://www.czso.cz/csu/czso/zem_ts)

**Open data** (in Czech only):

- Cattle and pig numbers (annual) <https://www.czso.cz/csu/czso/stavy-turu-a-prasat>
- Meat production in slaughterhouses (monthly) <https://www.czso.cz/csu/czso/vyroba-masa-na-jatkach>

The publication dates are listed in the Catalogue of products:

<https://www.czso.cz/csu/czso/catalogue-of-products>

**Eurostat database:**

<http://ec.europa.eu/eurostat/web/agriculture/data/database>

### IX. Additional methodological information and external links

**Quality reports:**

[Livestock and meat](#)

[Cattle production](#)

[Pig production](#)

[Slaughtering in cattle, pigs, sheep, and goats](#)

[Slaughtering in poultry](#)

[Animal Production Statistics \(Eurostat summary report\)](#)

**Legislation:**

Last update: 15 May 2023

*In blue*

Regulation (EU) 2022/2379 of the European Parliament and of the Council of 23 November 2022 on statistics on agricultural input and output, amending Commission Regulation (EC) No 617/2008 and repealing Regulations (EC) No 1165/2008, (EC) No 543/2009 and (EC) No 1185/2009 of the European Parliament and of the Council and Council Directive 96/16/EC (in force from 1 January 2025):

<https://eur-lex.europa.eu/eli/reg/2022/2379/oj>

Depending on the course of the legislative process for the implementing regulation for livestock statistics, Regulation 2022/2379 will enter into force for this domain in 2025 at the earliest

Regulation (EC) No 1165/2008 of the European Parliament and of the Council of 19 November 2008 concerning livestock and meat statistics and repealing Council Directives 93/23/EEC, 93/24/EEC and 93/25/EEC:

<http://data.europa.eu/eli/reg/2008/1165/oj>

Contact person: Ing. Markéta Fiedlerová, Ph.D., tel. 274052603, e-mail: [marketa.fiedlerova@czso.cz](mailto:marketa.fiedlerova@czso.cz)