

Description of total merit index (SIC) for bulls of Czech Fleckvieh breed

SIC is calculated for bulls:

- that have at least 51 % of Simmental breed
- born since 1992
- that have calculated RBV for all traits included in SIC

Traits included in SIC

RBV fat kg	RBVfat
RBV protein kg	RBVprot
RBV net daily gain	RBVndg
RBV europ classes	RBVecl
RBV dressing percentage	RBVdp
RBV male fertility	RBVmf
RBV female fertility	RBVff
RBV somatic cells	RBVsc
RBV frame	RBVfr
RBV muscularity	RBVmus
RBV feet and legs	RBVfl
RBV udder	RBVudd

SIC calculation:

1. Traits are included into the calculation in form of RBV (100; 12).

2. Partial indexes.

Milk production

$$I_{\text{milk}} = 0,2 * \text{RBVfat} + 0,8 * \text{RBVprot}$$

Beef

$$I_{\text{beef}} = 0,444 * \text{RBVndg} + 0,278 * \text{RBVecl} + 0,278 * \text{RBVdp}$$

Fitness – fertility

$$I_{\text{fert}} = 0,5 * \text{RBVmf} + 0,5 * \text{RBVff}$$

Fitness – longevity

$$I_{\text{long}} = 0,2 * \text{RBVsc} + 0,05 * \text{RBVfr} + 0,2 * \text{RBVmus} + 0,1 * \text{RBVfl} + \\ + 0,45 * \text{RBVudd}$$

3. Partial index for fitness.

Fitness

$$\mathbf{Ifit} = 0,2 * \mathbf{Ifert} + 0,8 * \mathbf{Ilong}$$

4. Calculation of SIC.

$$\mathbf{SIC} = 0,4 * \mathbf{Imilk} + 0,17 * \mathbf{Ibeef} + 0,43 * \mathbf{Ifit}$$

5. Standardization of SIC (100; 12) and partial indexes (100; 12).**Requirements for bulls to be included into TOP SIC:**

1. Breeding values for production traits, fertility and conformation calculated in the Czech Republic.
2. Production traits: at least 25 herds for 1st lactation.
3. Conformation: at least 20 herds (Height at sacrum).
4. Beef: reliability at least 50 %.
5. Fertility: at least 50 inseminations for male fertility for cows or heifers and at the same time at least 50 inseminations for female fertility for cows or heifers.
6. At least 50 inseminations by the semen of bull in the (current + last) year or bull was born in the last 8 years.