TECHNICAL PART

# Fleckvieh Simmental Breed – power and perspectives

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# 1. <u>Milestones (I)</u>

- ~ 1830:  first imports from CH
          Simmentaler cattle
          Upgrading local breeds



- ~ 1900:  breed associations
          milk recording
          pure breeding→ triple purpose



- ~ 1960:  Artificial insemination
          Electronic data processing
          Progeny testing schemes
          Evaluation models
          AI-breed programmes

## 1. <u>Milestones (II)</u>

- ~ 1985:   EC market policy →
             milk quota, market interventions

**Political changes**
             **reunification in Germany, EC entries**

**Breeding: 7. World Simmental Fleckvieh Congress 1988**
             **Suckler cow Husbandry        ↗**
             **Economical Total Merit Index**



**Joint breeding value estimation across countries**

**Era of genomic selection**

# 1. <u>Milestone (III)</u>

## <u>Conclusion</u>

**Courageous persons  (i.e.  Max Obermeier,
Prof. Dürrwaechter,
Prof. Kräußlich,
Dr. Averdunk, ...)
have recognized important developments
to the right time
and made them true.**

at the top: Max Obermeier
up: Prof. Dürrwaechter
l.l.: Dr. Averdunk
l.: Prof. Kräußlich

## 2. <u>Population data (I)</u>



- **<u>Dual purpose</u>**
  **684.000** registered cows
        **29%** breed sha
        **16.800** herdbook
        **Ø 41** cows / farm

**Progress:**    **+ 88 kg milk / a**
**(since 1987)**    **+ 7,5 kg fat + protein / a**
                      **+ 3 g daily gain / a**

- **<u>Beef purpose</u>**
  **11.400** registered cows
  **19%** breed share (nr. 2)
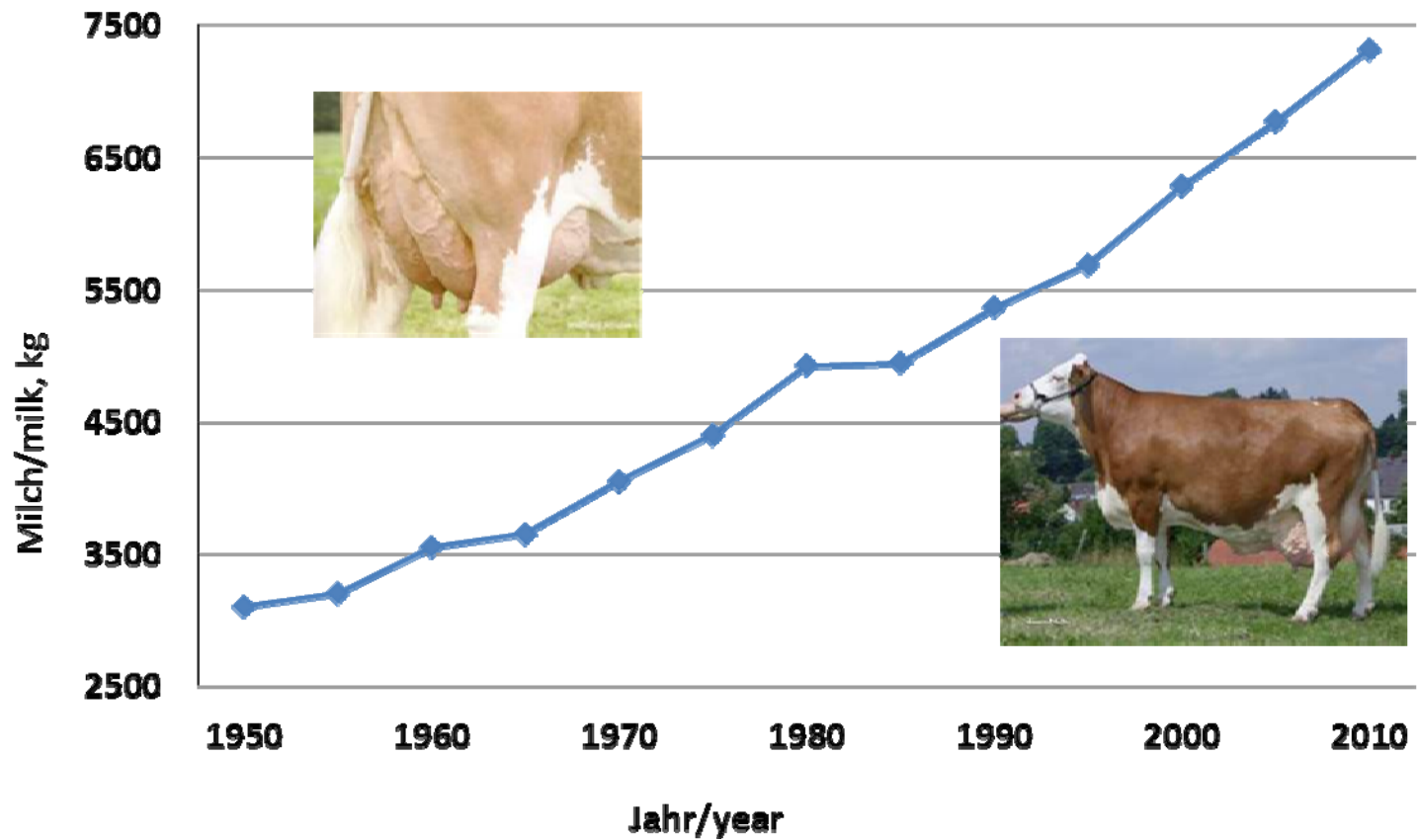  **400** herdbook farms
  **Ø 26** cows / herd
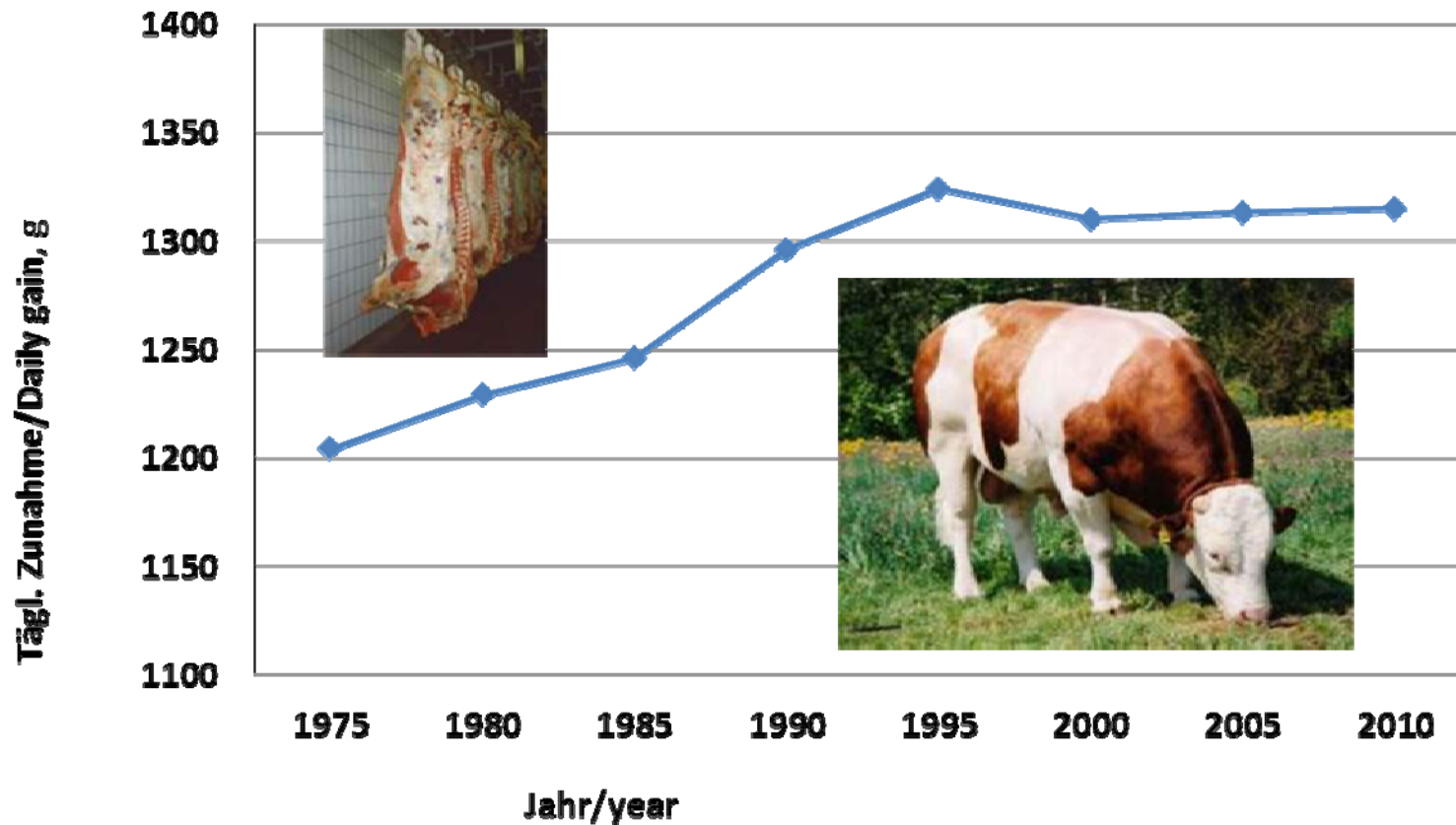


**Progress:  polledness**
                 **daily gain**

Entwicklung der Milchleistung
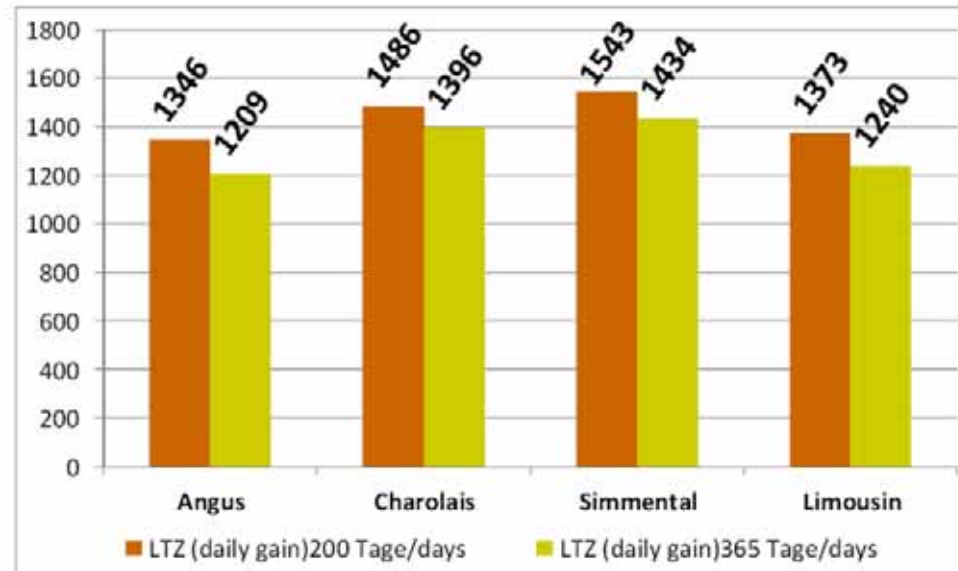Development of milk yield Fleckvieh Simmental in DE

Entwicklung der Fleischleistung
Development of meat yield Fleckvieh Simmental in DE

Feldprüfung 2007-2011 (♂)
Field test results 2007-2011 (♂)

## 2. <u>Populations data (II)</u>

**<u>Conclusion</u>**
**•for both purpose lines**
**in Germany:**
**–breed figures:**
**stabile, fully competitive**
**–increasing registered cows,**
**nr. and regional distribution**
**–rank 2 in milk and beef breeds**

**•dual purpose international:**
**–biggest population**
**–top conditions for high breed progress due to**
**joint cooperation across countries**
**(1 mio. reg. cows in DE, AT, CZ)**

# 3. <u>Breed structures (I)</u>

- **<u>Dual purpose</u>**

  **12 breeding associations**
  **6 breeding and AI-organisations**
  **8 AI-centres**

  – **Tasks: breeding, sales, service**

  – **18 herdbooks, but 1 register (same rules in DE: ASR/ADR)**

  – **Comprehensive perfomance testing**
     **independent control, 78% of total cows**  ↗

  – **Diversity → competition → cooperations !?**

# 3. <u>Breed structures (I)</u>

- **<u>Beef purpose</u>**

  **12 breed societies**

  – **tasks: herdbook, performance testing, breeding sales, service**

  – **12 herdbooks, but 1 register (same rules in DE: BDF / ADR)**

  – **Diversity → cooperations !?**

## 3. <u>Breed structures (II)</u>

### <u>Conclusion</u>

- **Structural diversity**
  - up to now: desirable competition
  - in future: strategic alliances are needed

- **Performance and quality control:**
  - → high data quality
  - → independent controls

- **<u>One</u> breed, <u>two</u> pupose lines, numerous registers**
  - → unique national guidelines
  - → mutual registration is and will stay possible

## 4. <u>Breeding aim (I)</u>

- **Description of the breed is**

– **identical regarding**
    **colour: i.e. head mainly white**
    **body: i.e. medium to big framed**
    **production traits: i.e. persistent fertility**

– **Different regarding**
    **weighting of breeding traits**
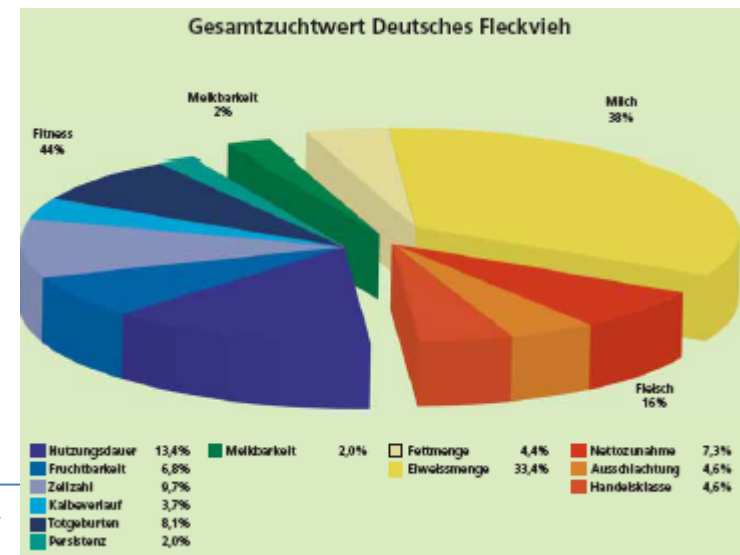
## 4. <u>Breeding aim (II)</u>

- **Dual purpose**

**1988:** breed index milk : meat = 50 : 50

**90es:** functional traits started

**2002:** economical total merit index in DE and AT
joint breeding value estimation in DE and AT

**2006:** readjustment, weighting s. diagram
goal lifetime production:
30.000 kg milk / cow



Gesamtzuchtwert Deutsches Fleckvieh

# 4. <u>Breeding aim (III)</u>

- **<u>Dual purpose: challenges</u>**

  – **integration of health traits (s. sep. lecture)**
  – **udder health: keep top ranking**
  > **incidence of mastitis – somatic cells**
  – **female fertility: more power?**
  – **meat performance: EUROP grade ↗ ?**
  > **daily gain ↘ ?**
  > **meat quality traits ?**
  – **Type traits: directly (i.e. udder, feet and legs)?**
  – **Udder: suitable for automatic milking?**
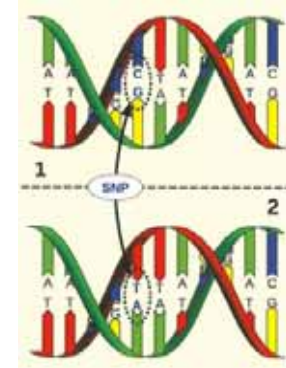  > **→ Survey among breeders is running→ Opti-Gene**

# 4. <u>Breeding aim (IV)</u>

- **<u>Beef purpose</u>**
- **Intensive yielding breed demanded maternal abilities**
- **Main features:**
  **high milk yield**
  **easy calvings**
  **best weaning weights**
- **EBV beef value (RZF)**
  **since 1997 (s. sep. lecture)**
- **EBV fertility value (RZL)**
  **starting in Dec. 2012:**
  **40% fertility (calving interval)**
  **30% calving behaviour (stillbirth rate)**
  **30% productive life (nr. calvings)**

# 5. Genom. Selection / genetic evaluation (s. sep. lecture)

**Dec. 2010:**     testing period started

**August 2011:**   gEBV was introduced officially

**To date:**                joint pool DE, AT, CZ

> 19.000 SNP-genotypes

~ 6.000 candidates / a

partnership / interested: IT, ...

## Conclusion / challenges

- Breeding programmes:        dynamic changes
  differences in on-farm implementation
  reliability vs. risk management

- Research / development:      high speed
  HD-Chips, resequences
  DP-Pool useful for beef purpose?

# 6. <u>Sales DP 2011</u>

- ~ **200 breeding cattle auctions + farm to farm**
- ~ **460 auctions for fattening calves**

- ~ **35.000 breeding cattle Germany**
- ~ **11.500 breeding cattle exported**
- ~ **190.000 calves for fattening in spezialized operations (to date recording prices)**
- ~ **1,5 mio. semen export**

## 6. <u>Sales DP 2011</u>

**Conclusion / challenges**

- **Keeping sales + auctions attractive**

- **Quality standards ensure price levels and transparency**

- **Joint efforts are needed:**
      **transports <u>and</u> animal welfare**
      **internat. hygiene standards**

# 7. <u>Perspectives (I)</u>

**Challenges caused by agricultural or social aspects**

**Examples:**

**•<u>Animal welfare / polledness</u>**
**Fleckvieh Simmental beef: well advanced**
**Fleckvieh Simmental dual purpose: in favour**
> **→ new direct genetic test (LMU Munic)**
> **→ genomic selection (generation intervall)**

**•<u>Climate protection / greenhouse gas</u>**
**Cattle as partial contributor**
**Whole system consideratons:**
> **dual purpose is more favourable**

# 7. <u>Perspectives (II)</u>

- **<u>Feed efficiency</u>**
  **Cattle: roughage utilizer**
  **or food competitor?**
  **Data collection is difficult → breeding target?**

- **<u>Research and development</u>**
  **successful, large framed network**
  **Universities, Institutes, umbrella organizations (i.e. FBF)**
  **Important inventions in practical use:**
  **Arachnomelia, polledness, bovine male subfertility**

- **<u>Breed management</u>**
  **The robust cow → health monitoring programmes**
  **Planned mating schemes → keep the low inbreeding rate**
  **in Fleckvieh Simmental**

## 7. <u>Perspectives (III)</u>



- **<u>Young people</u>**

  **solid education**

  **highly motivated**

  **well organized (Young breeders clubs)**

  **→ better support?**

  **(i.e. „Jungzüchterprofi" in AT)**

# Fleckvieh Simmental–

## a powerful breed
## excellent balanced

## magnificent perspectives
## ambitious (young) people

## - any other dreams?

**THANK YOU!**