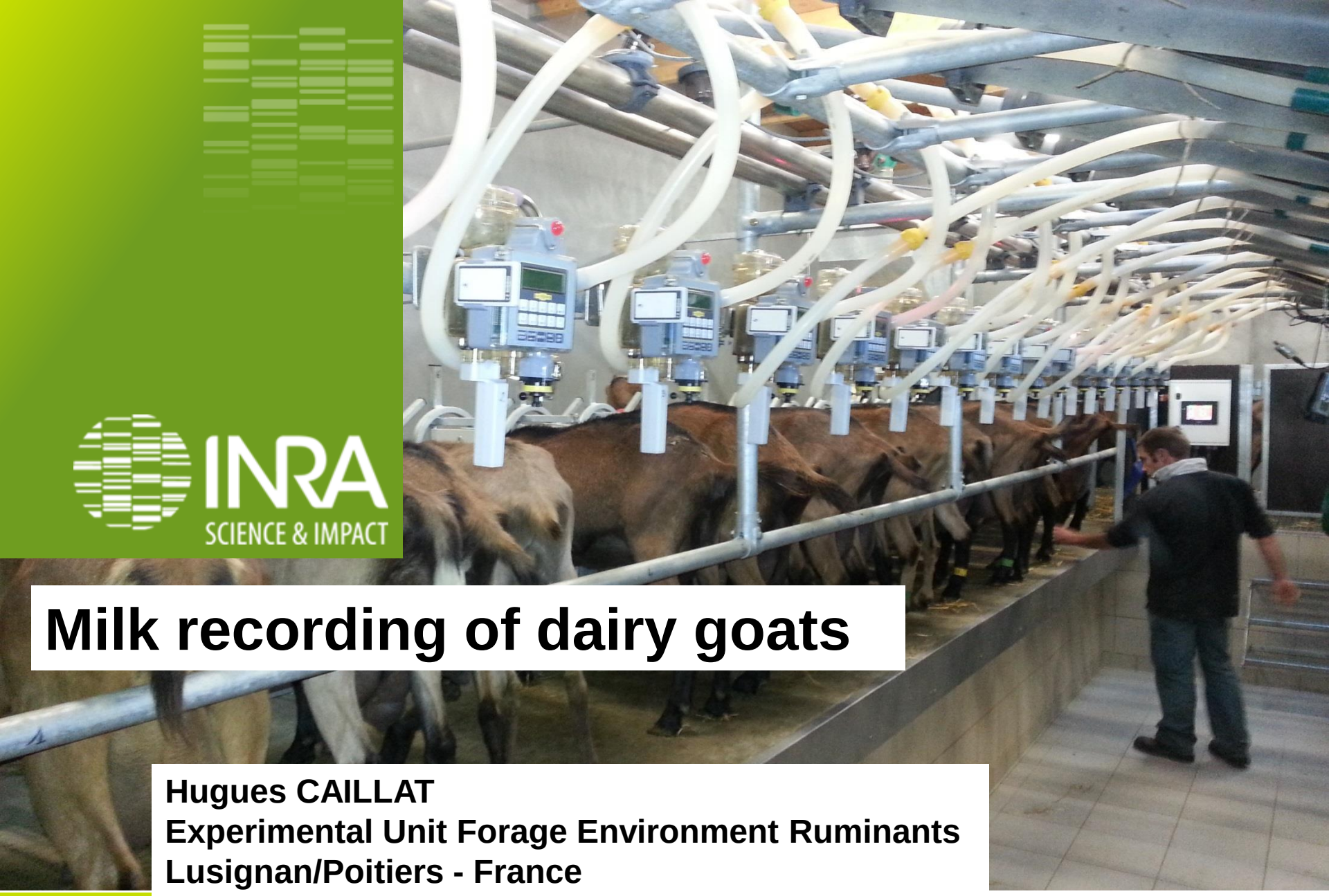
Milk recording of dairy goats

Hugues Caillat



Milk recording of dairy goats

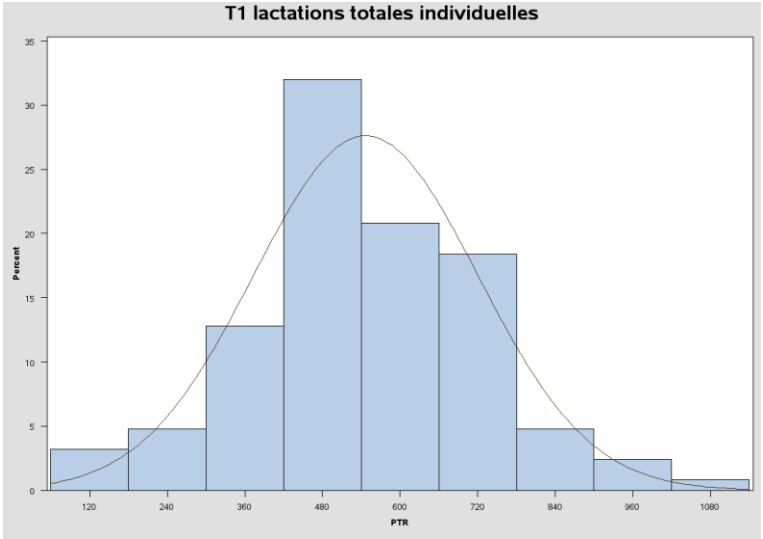
Hugues CAILLAT
Experimental Unit Forage Environment Ruminants
Lusignan/Poitiers - France

❖ Milk recording of dairy goats

1) The French dairy goats production

2) Milk recording : objectives and practices

3) Data of milk recording



❖ The French dairy goats production

✓ 1 270 000 goats ➔ 889 000 dairy goats

✓ 624 milliions of liters

Delivred

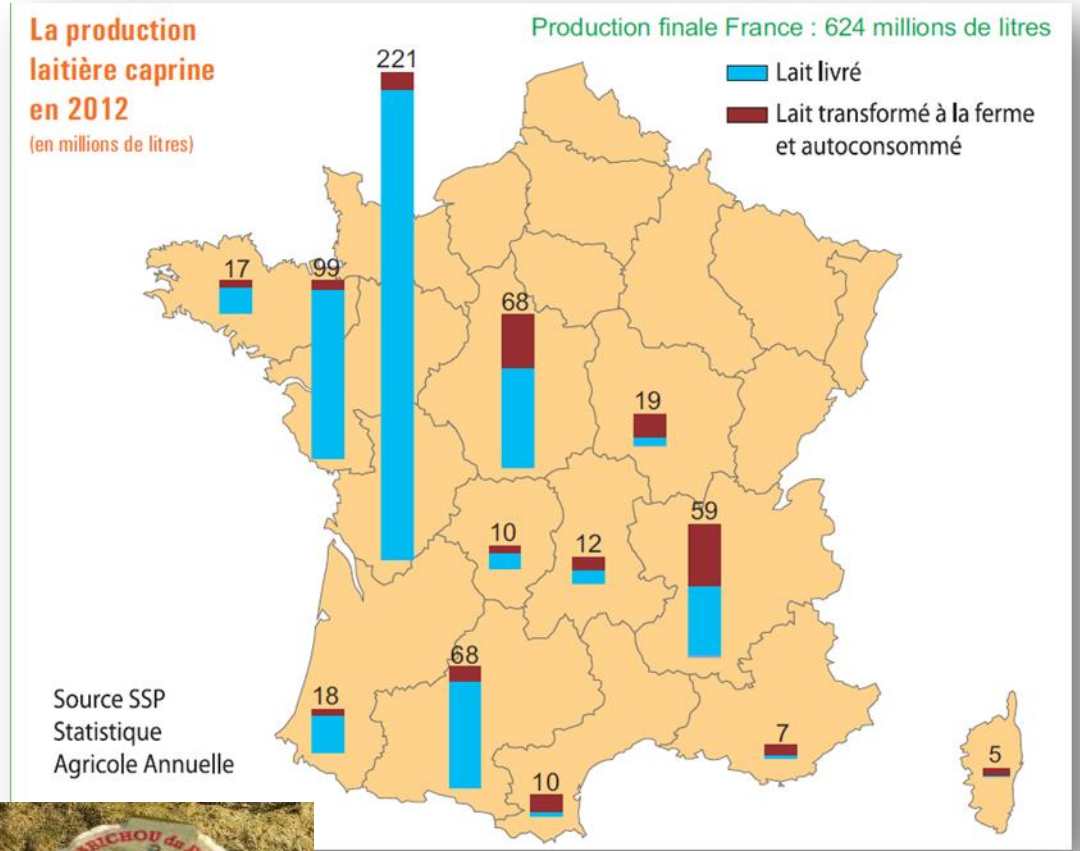
➔1st region :
Poitou-Charentes

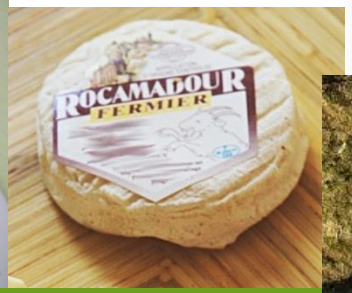
Processed into cheese

➔Rhone-Alpes and

➔Centre

14 certificated cheeses





❖ The French dairy goats production

✓ 2 main breeds : Alpine and Saanen (97% of dairy goats)

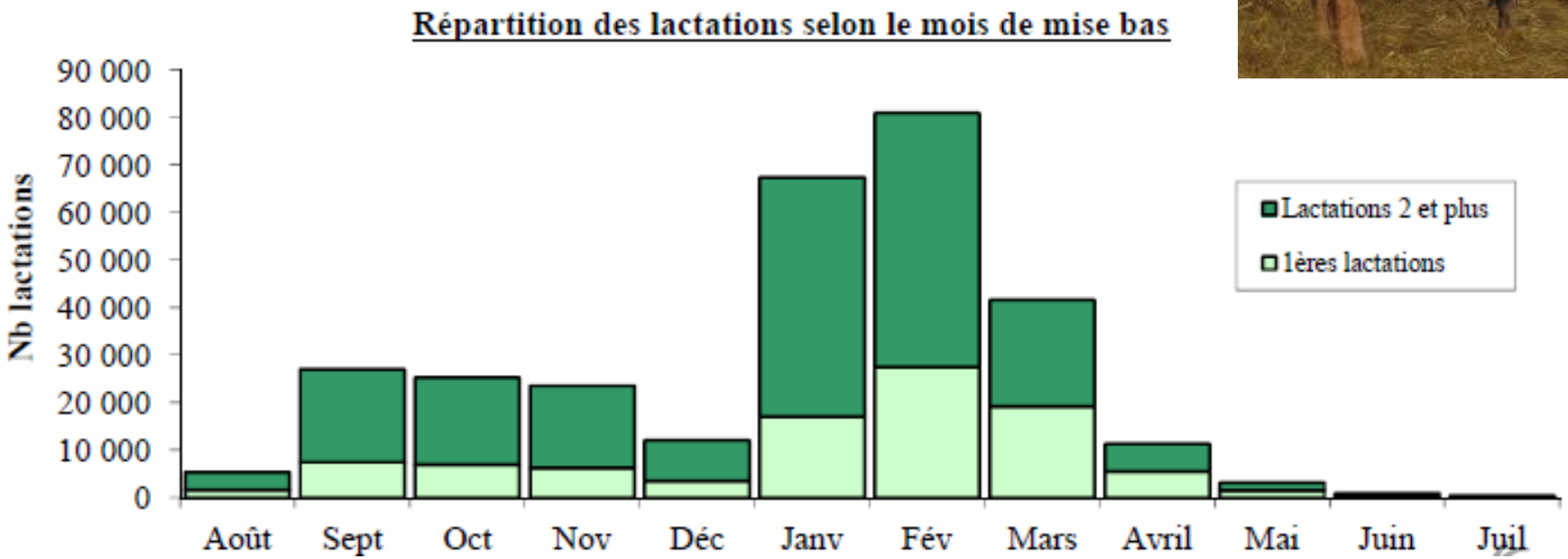
450 000 goats

350 000 goats

✓ + 4 breeds with low nombers and milk recording data :

❖ The French dairy goats production

- ✓ 2 main periods of kidding



- ✓ duration of lactation : 10 months
- ✓ dry-off : 2 months

Official milk recording – France, 2012

❖ The French dairy goats production

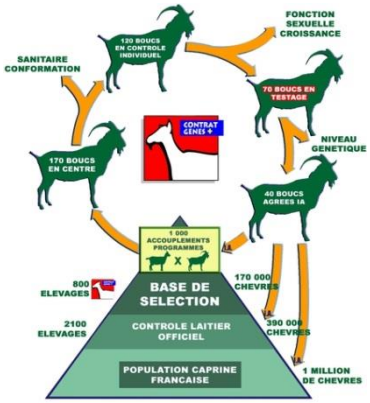
✓ Milk yield and solid contents

Race	Lactations	Durée jours	Lait kg	MP kg	TP g/kg	MG kg	TB g/kg	Intervalle MB-MB j	Rang moyen de lactation
Alpine	166 282	296	**915**	30,2	**33,0**	34,4	**37,6**	384	2,6
Saanen	124 040	313	**996**	31,5	**31,7**	35,4	**35,5**	396	2,5
Croisée	8 545	291	**856**	27,4	**32,0**	30,9	**36,1**	388	2,7
Poitevine	562	249	**518**	16,1	**31,0**	18,6	**35,8**	377	3,1
Pyrénéenne	81	194	**187**	5,5	**29,5**	7,5	**40,1**	363	3,6
Chèvre des Fossés	60	216	**260**	7,5	**28,8**	10,9	**41,8**	378	2,8
Autres races	139	259	**540**	15,5	**28,7**	18,2	**33,6**	371	3,1
Toutes lactations	**299 709**	**303**	**946**	**30,6**	**32,4**	**34,7**	**36,7**	**389**	**2,6**

Official milk recording – France, 2012

❖ Components of the selection program

- Objectives and selection criteria
- Selection scheme



- Milk recording, animal identification, DNA data…
- Genetic evaluation

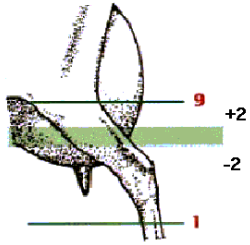
❖ Components of the selection program

- Objectives and selection criteria
- Selection scheme
- Milk recording, animal identification, DNA data…
- Genetic evaluation

❖ Objectives and selection criteria

- Milk yield

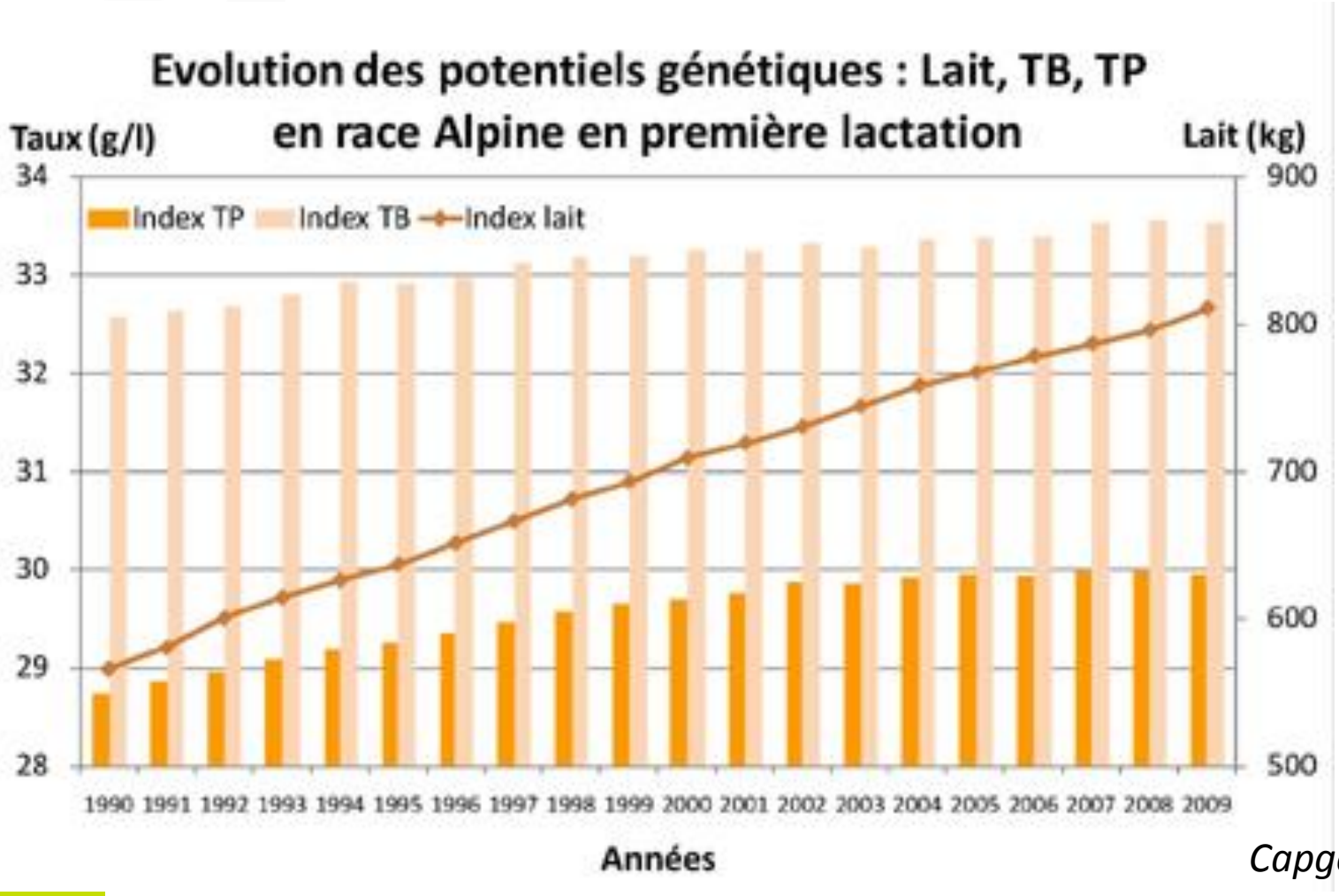
- Protein, Fat (contents)
- Morphology : udder profile, udder floor, rear udder, rear attachment



UDDER FLOOR POSITION

- *New in 2012 : cell count score*

❖ Objectives and selection criteria



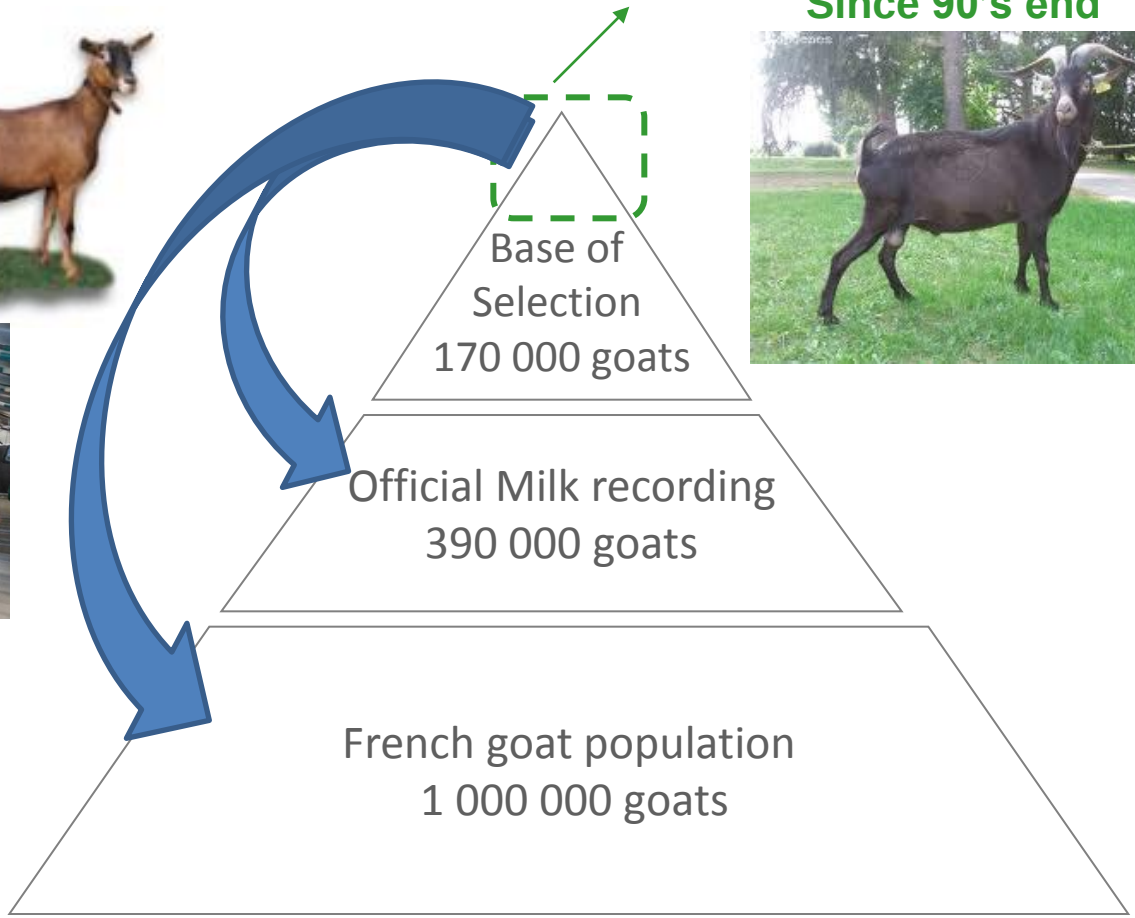
Capgenes, 2012

❖ Components of the selection program

- Objectives and selection criteria
- Selection scheme
- Milk recording, animal identification, DNA data…
- Genetic evaluation

❖ Organisation of selection scheme

Bucks testing on offsprings
Since 90's end

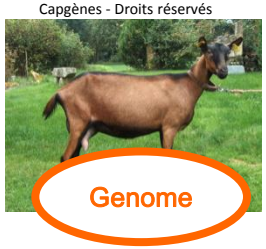


❖ Components of the selection program

- Objectives and selection criteria
- Selection scheme
- Milk recording, animal identification, DNA data…
- Genetic evaluation

❖ Genetic evaluation

Capgènes - Droits réservés



Unknow genes and localisation

Observed traits are the multiplication of genes

Phenotype = expression of genome in a specific environment

Milk recording

Index
Animal breeding value

Genome

Indirect estimation

Efficient and operational → high animal breeding

❖ Components of the selection program

- Objectives and selection criteria
- Selection scheme
- Milk recording, animal identification, DNA data…
- Genetic evaluation

❖ 1st step : Identification

Interest of (electronic) identification

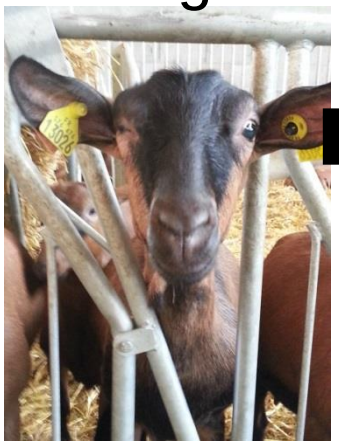
- ✓ **Electronic management of herd :**
  - Updated stock list of living animals
  - Reproduction methods and dates
  - Pedigree recording

- ✓ **Automatic Concentrate Feeder**

- ✓ **Sort animals**
- ✓ **Performances recording : weight and milk**

❖ European identification

Eartags



Ear tag for kids < 6months

2 types of permanent identification for breeding animals

Eartag + pastern tag

FR — Country code

576476 — Farm number

00076 — Animal number (order)

video

❖ Milk recording organization

- Milk production and quality :
  - several methods from monthly PM/AM visits to farmer
  - samples methods combined with records on bulk milk

- Several electronic devices for automatisation

- Some organisations offer also general advise feeding, herd management, economic results…

❖ Which tools?

2 types of milk recorders

Exhaustive test

INRA-Gely II test
(INRA Bourges)

Derivative test

Lactocorder ®
(in farm + INRA Poitiers)

❖ Steps of milk recording in farm

Transpondeur RFId encodé animal fixé dans la bague paturon

4

Commander

5

Télépacks

6

7

LactoCorder

8

9

2

3

Transpondeur RFId encodé objet fixé dans la bague sur la griffe à lait

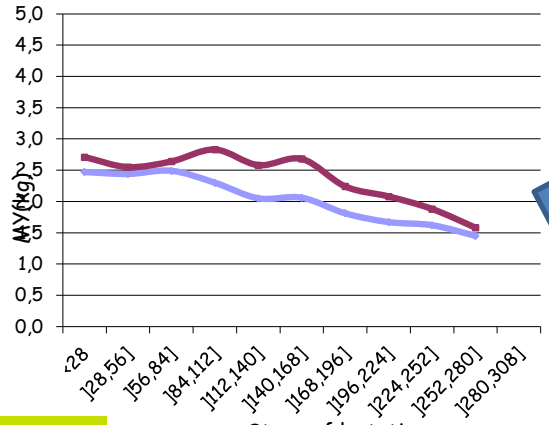
10

Transpondeur RFId encodé objet mis dans les flacons bronopolés

Ordinateur équipé d'un lecteur de Télépack et d'un lecteur de Commander

11

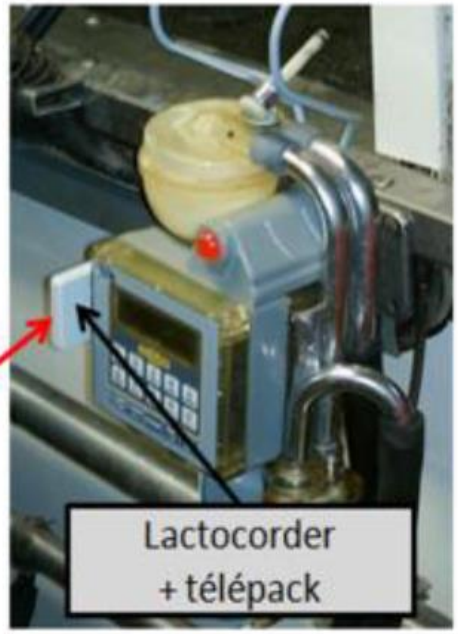
1

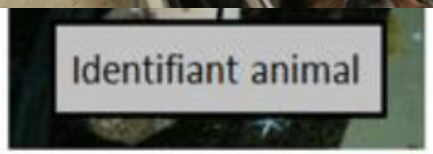


ARSOE :

- SIECL
- ORICLEF
- LACTOPRO

❖ Chaining informations with lactocorder®





Video

❖ Unloading data after milking

❖ Data of lactocorder software : 1 line / goat

LactoCorder® - Programme d'évaluation: France

Fichier Data- TélePack Evaluation Réglages Utilitaire Outils Aide

Affichage des résultats complets: [Test9169.dat] - Jeu de paramètres 0: All Parameters

117TEST9169 Muster Peter 03.07.99M

BNR	KNR1	KNR2	Nom	Grp nr	IDAnimal	IDAnimal hex	LS	ID flacon	ID flacon hex	GNR	Date de traite jj.mm.aa	TempsB hh:mm	MZ S/M	MP nr	nID n	RM	RV n	SM	NG	DNgW °	AK	EM kg	M
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15177139169	000013384028	00000108	TAIGA	n.	n.v.	n.v.	0	5288191473	013B3365F1	000000002214	03.07.99	06:18	M	n.	n.	1	0	0	00	n.v	11	14	1
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ESC Quitter | F1 Aide | F2 Tri + | F3 Tri - | F4 Graphique | F5 Graphique S/M | F6 Statistique | F7 Exporter | F8 CpSpéc | F9 Imprimer | F10 Menu

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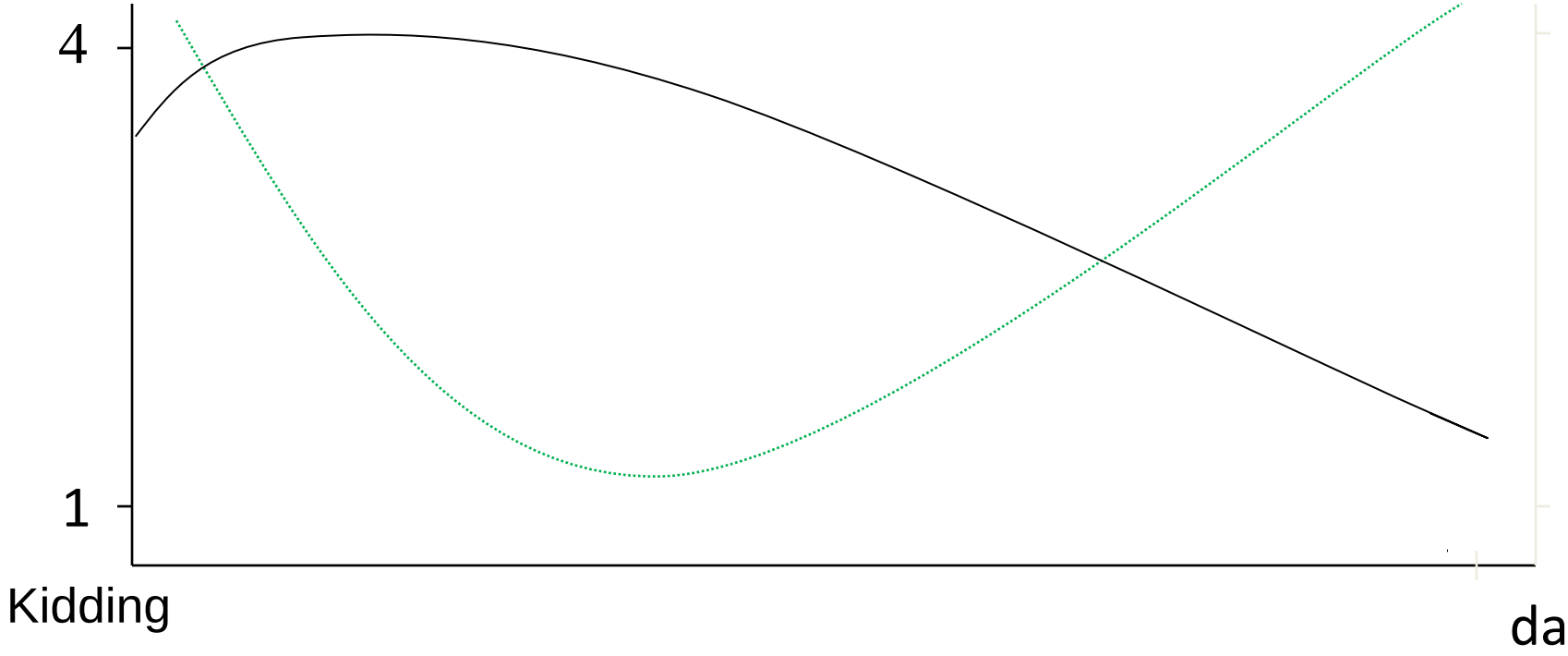
❖Milk production - Traits

- Milk Yield (kg/d)

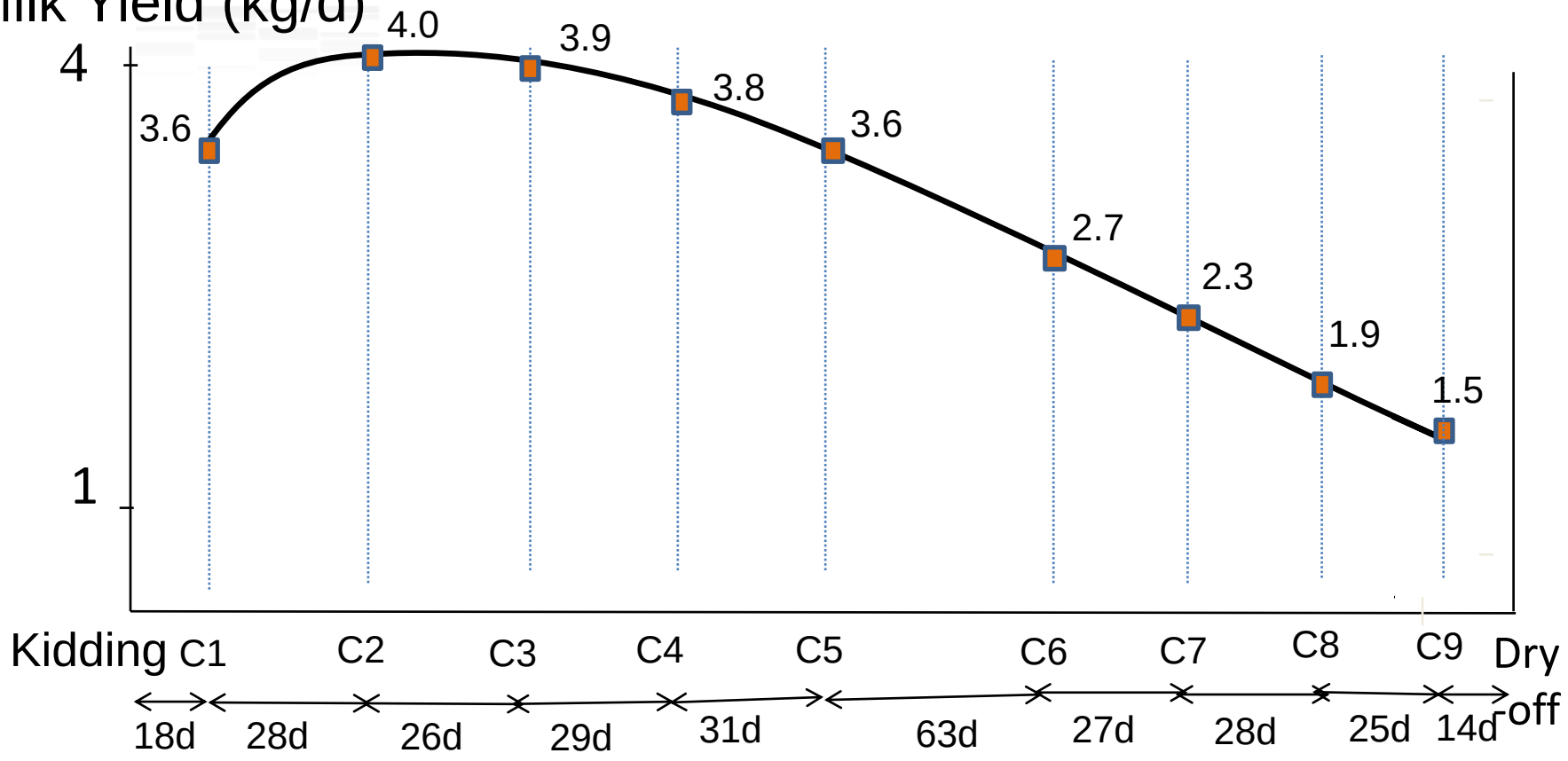
Solid Contents g/kg



Daily production : milk recording

❖ Official Milk Recording

- Milk Yield (kg/d)

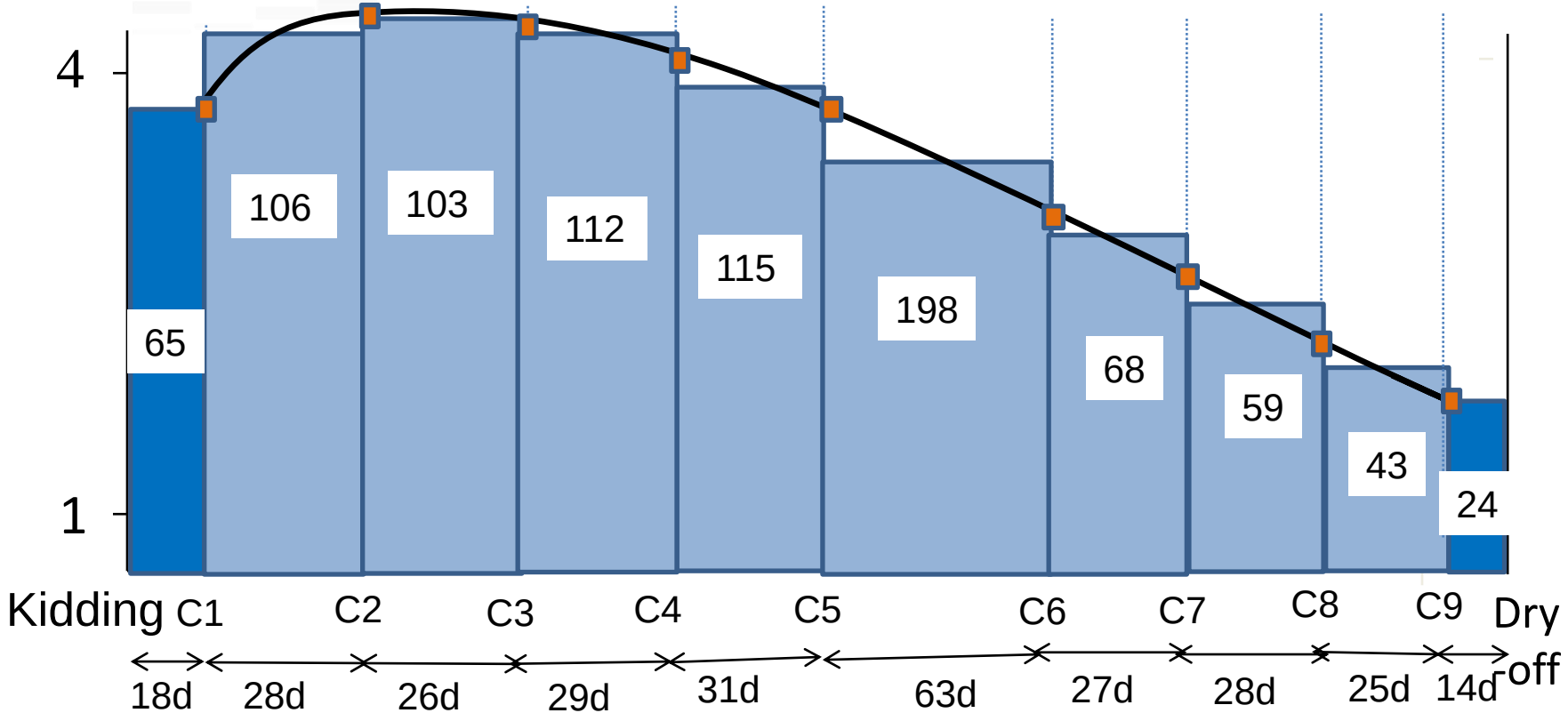


Daily production + quality (fat, protein, cells)

➔ about 1 control/month (evening/morning)

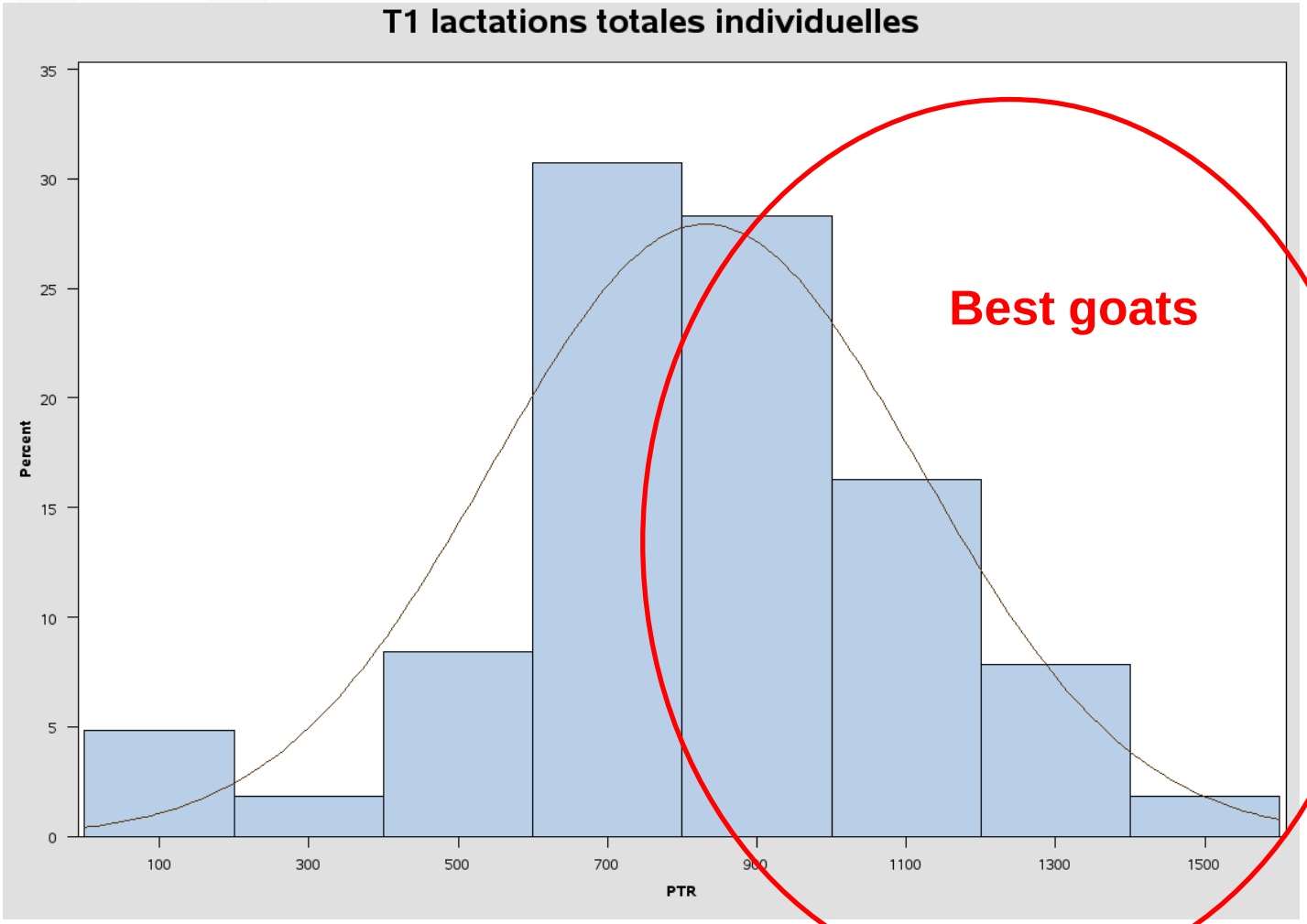
❖Milk production – Fleischmann method

- Milk Yield (kg/d)

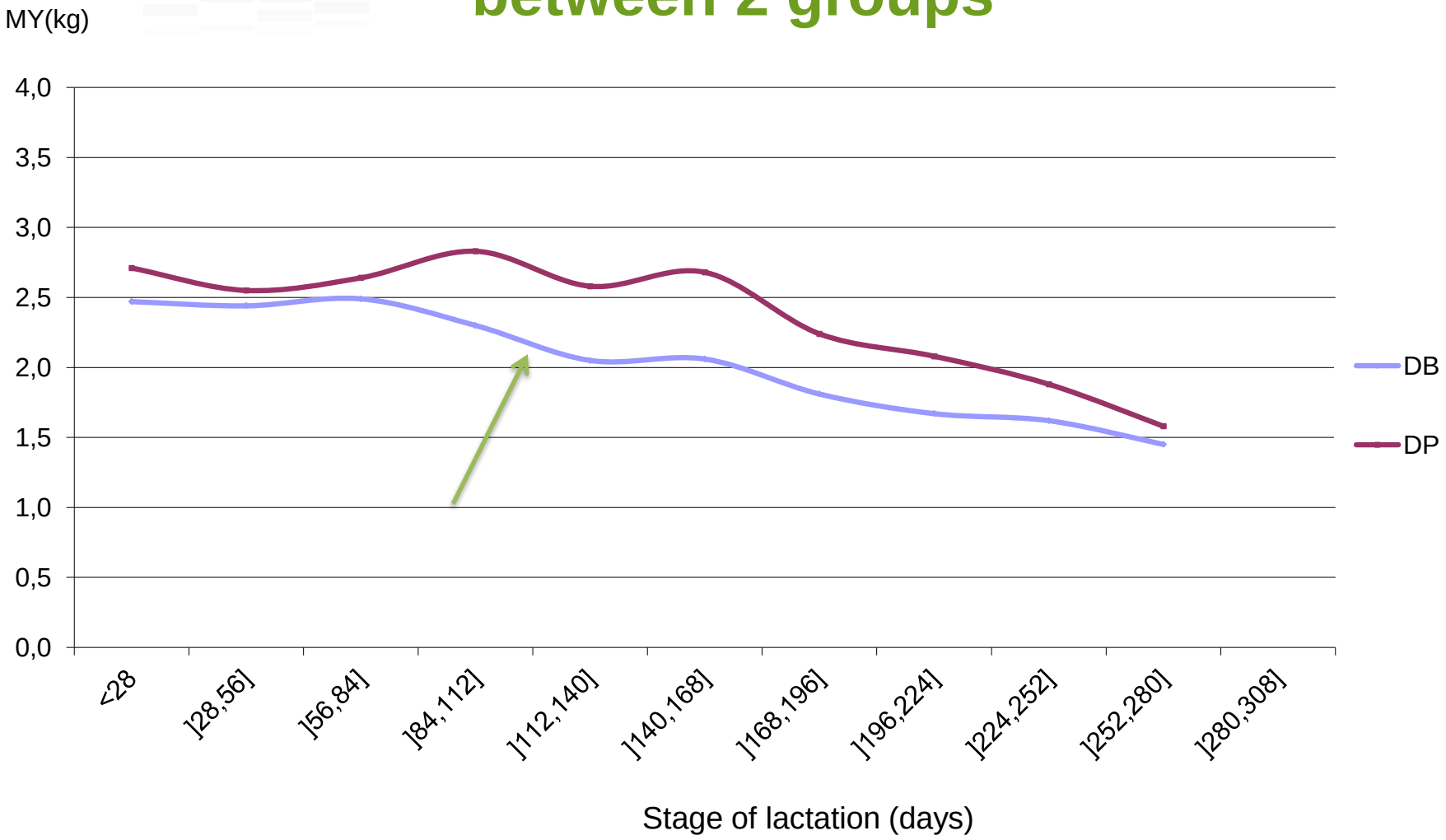


Total lactation: area under the curves ➔ 891kg

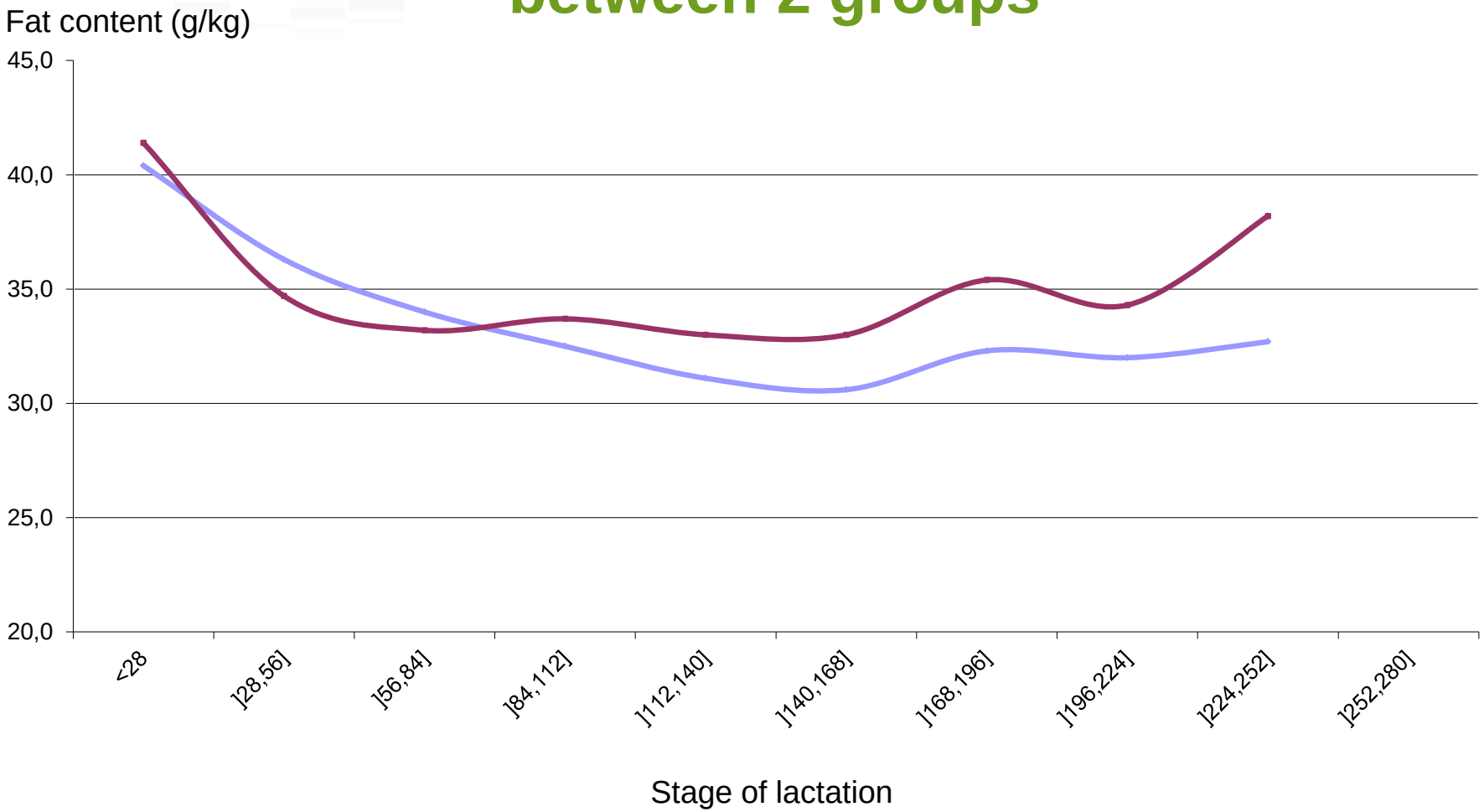
❖ Results : rankings goats on annual lactation



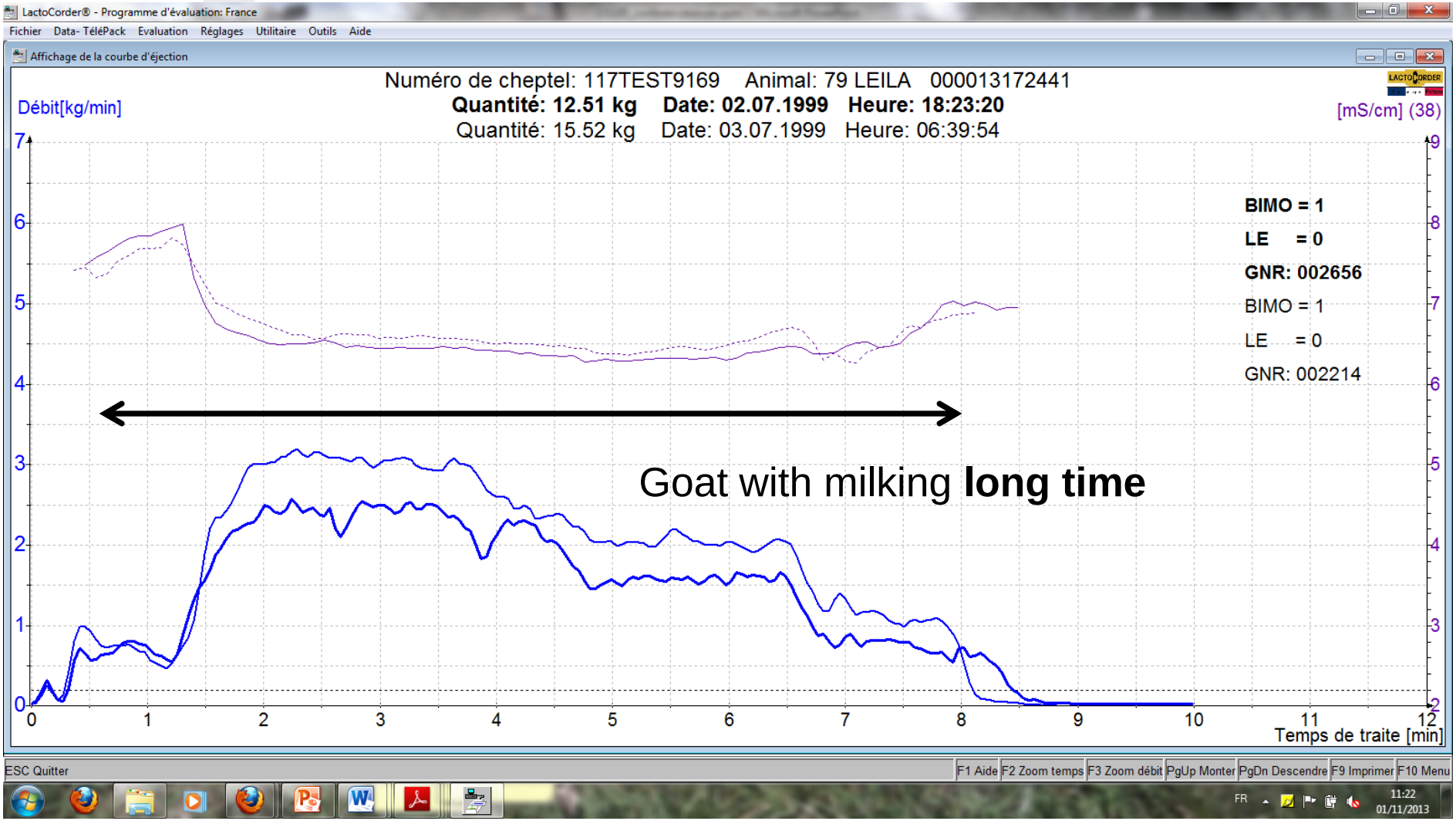
❖ Results : comparison of lactation between 2 groups



❖ Results : comparison of lactation between 2 groups



❖ Results : Milking flow kinetics of goats



** Example in dairy cow*

❖ Results : Milking flow kinetics of goats

** Example in dairy cow*

❖ Typical problems in dairy goat programs (1/3)

- Several independent breeders' associations (by breed ?):

- Low impact

- Costly Management (birth dates, reproduction, genealogy, organization of shows and events at a small scale)

• <u>Possible solution</u> for small breeds is to make a single goat association. Selection objectives can be kept separated for each breed

According to the words of Dr. Manfredi (INRA Toulouse)

❖ Typical problems in dairy goat programs (2/3)

- Lack of milk recording: heterogeneous production efficiency; selection limited to type traits

- Possible solutions:

- Identify the responsible for official milk recording

- Search for funding (can milk plants put a bonus on milk price of recorded herds ?)

- Study simplified methods of milk recording (with Research Institutions)

According to the words of Dr. Manfredi (INRA Toulouse)

❖ Typical problems in dairy goat programs (3/3)

- Genetic schemes closed (within farm)

- Problems: limited genetic progress and risk of inbreeding

- Solutions :

  Open the male side: natural mating (buy/exchange bucks with necessary sanitary control) and artificial insemination

According to the words of Dr. Manfredi (INRA Toulouse)

❖ Conclusion

For efficient animal breeding, efficient milk recording is necessary!

HOW?

- Animals **identification** : *pedigree, performances,…*
- (Electronic) **Milk recorder** and **samples** : *simple but efficient*
- **Data base** : *storage and recovery*

Thanks for your attention