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Milk recording of dairy goats

Hugues Caillat

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Milk recording of dairy goats

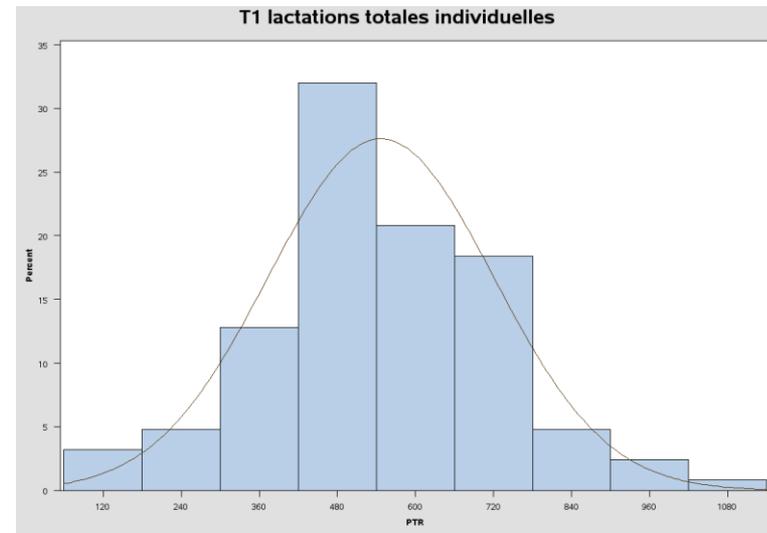
Hugues CAILLAT
Experimental Unit Forage Environment Ruminants
Lusignan/Poitiers - France

❖ 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 millions of liters

Delivred

→ 1st region :
Poitou-Charentes

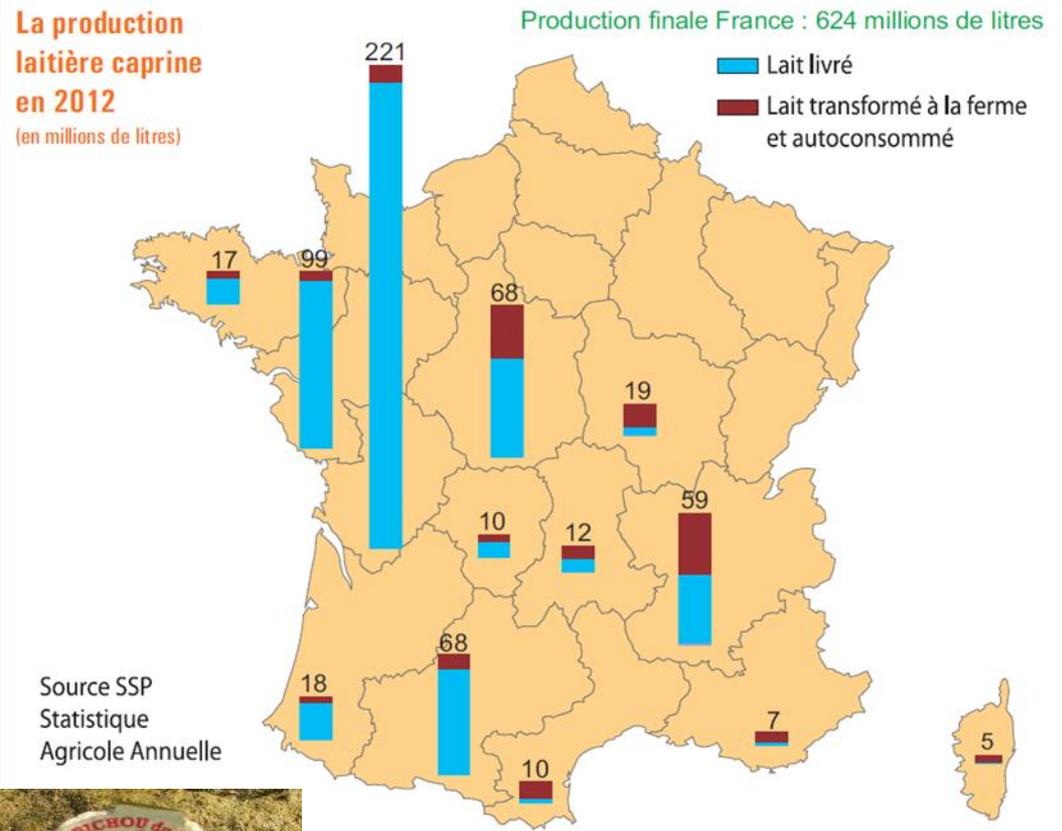
Processed into cheese

→ Rhone-Alpes and

→ Centre

14 certificated cheeses

La production
laitière caprine
en 2012
(en millions de litres)



❖ 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 numbers and milk recording data :

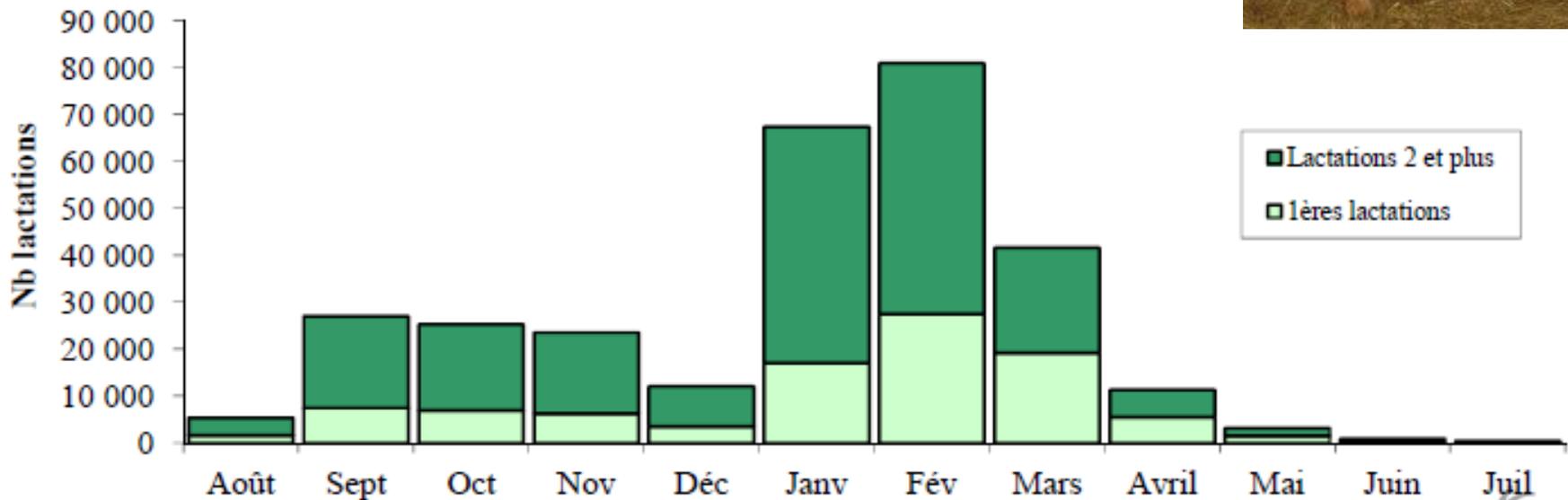


❖ The French dairy goats production

✓ 2 main periods of kidding



Répartition des lactations selon le mois de mise bas



✓ 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

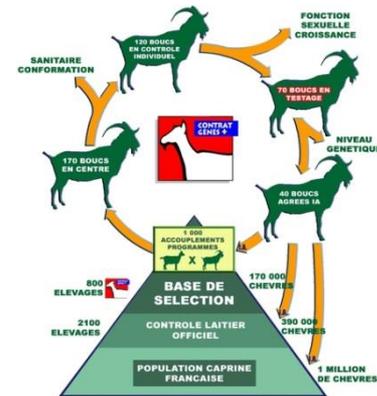
❖ Components of the selection program

- Objectives and selection criteria

- Selection scheme

- Milk recording, animal identification, DNA data...

- Genetic evaluation

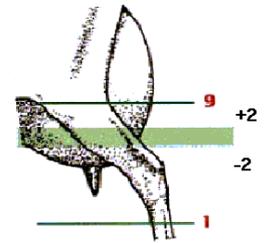


❖ Components of the selection program

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

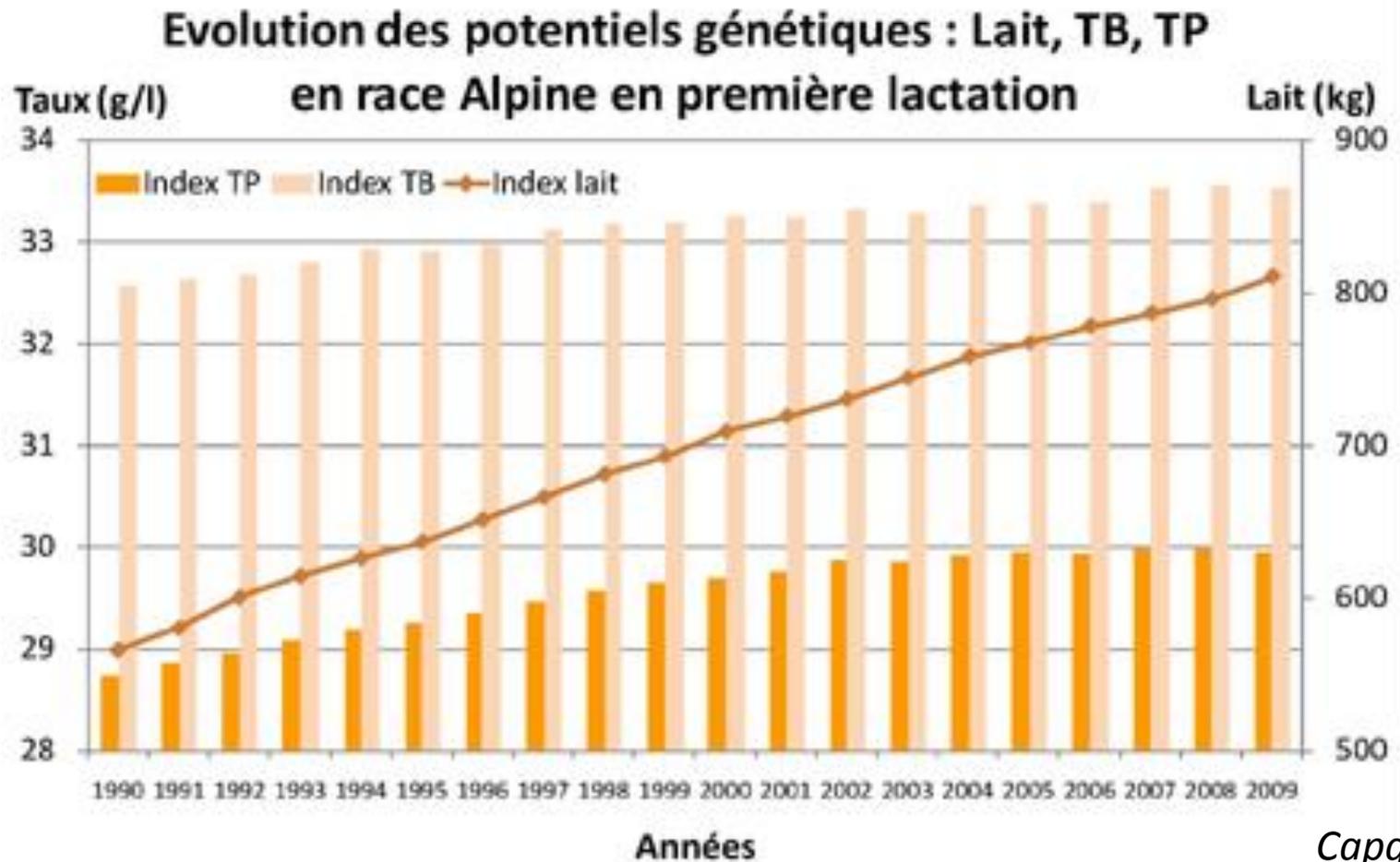
❖ Objectives and selection criteria

- Milk yield
- Protein, Fat (contents)
- Morphology : udder profile, udder floor, rear udder, rear attachment
- *New in 2012 : cell count score*



UDDER FLOOR POSITION

❖ Objectives and selection criteria



Capgenes, 2012

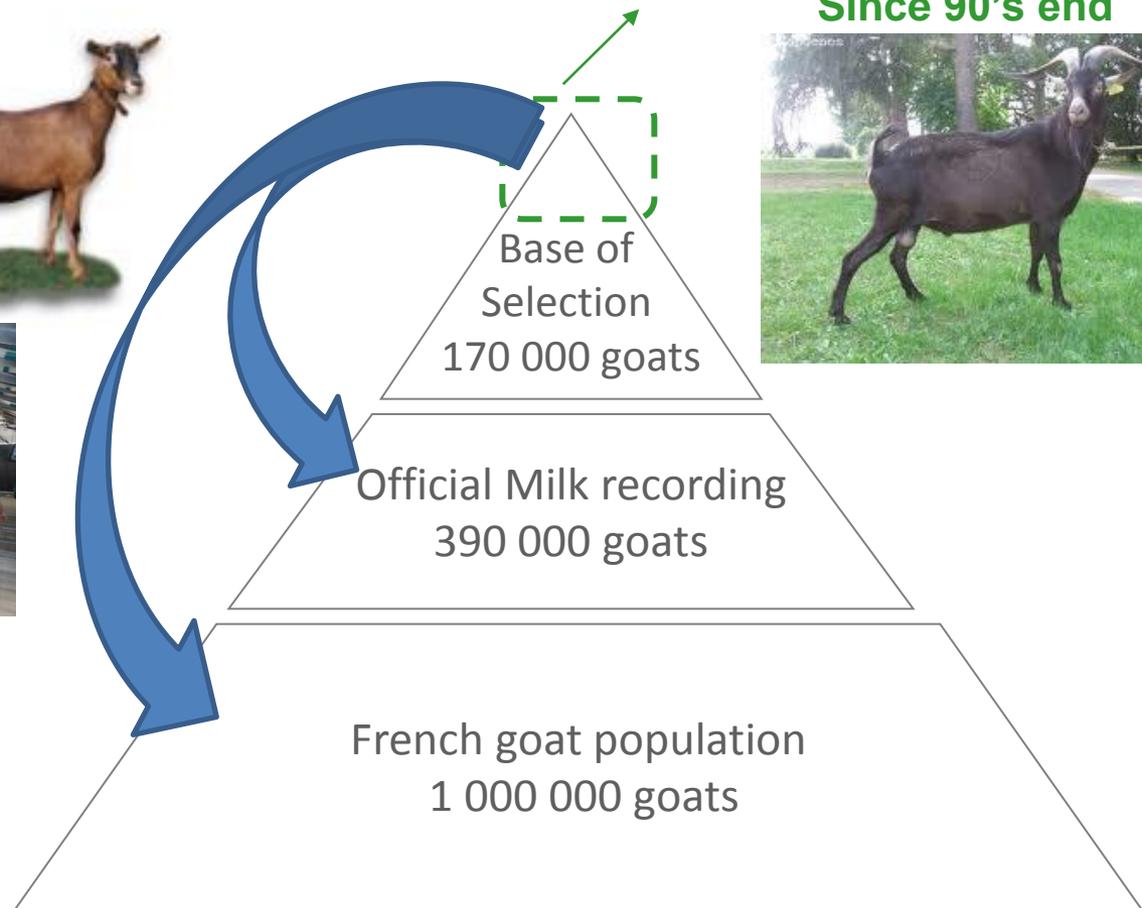
❖ Components of the selection program

- 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



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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**



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

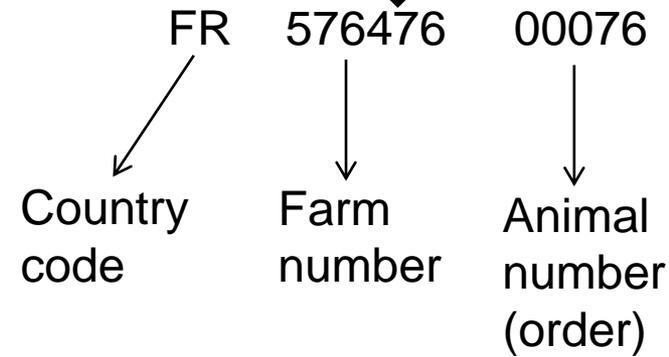


Ear tag for kids < 6months

2 types of permanent identification for breeding animals



Eartag + pastern tag



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



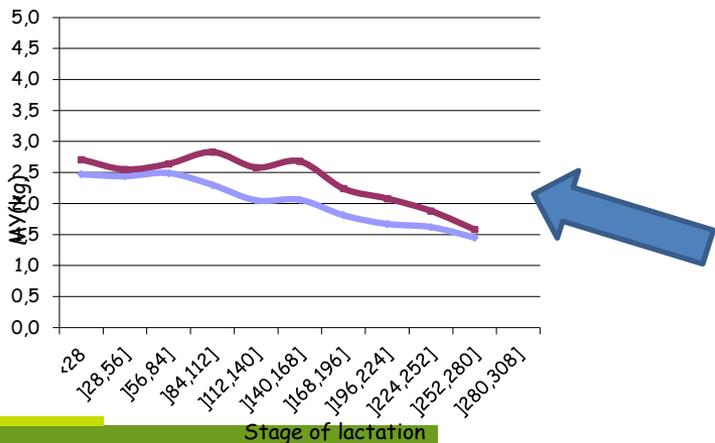
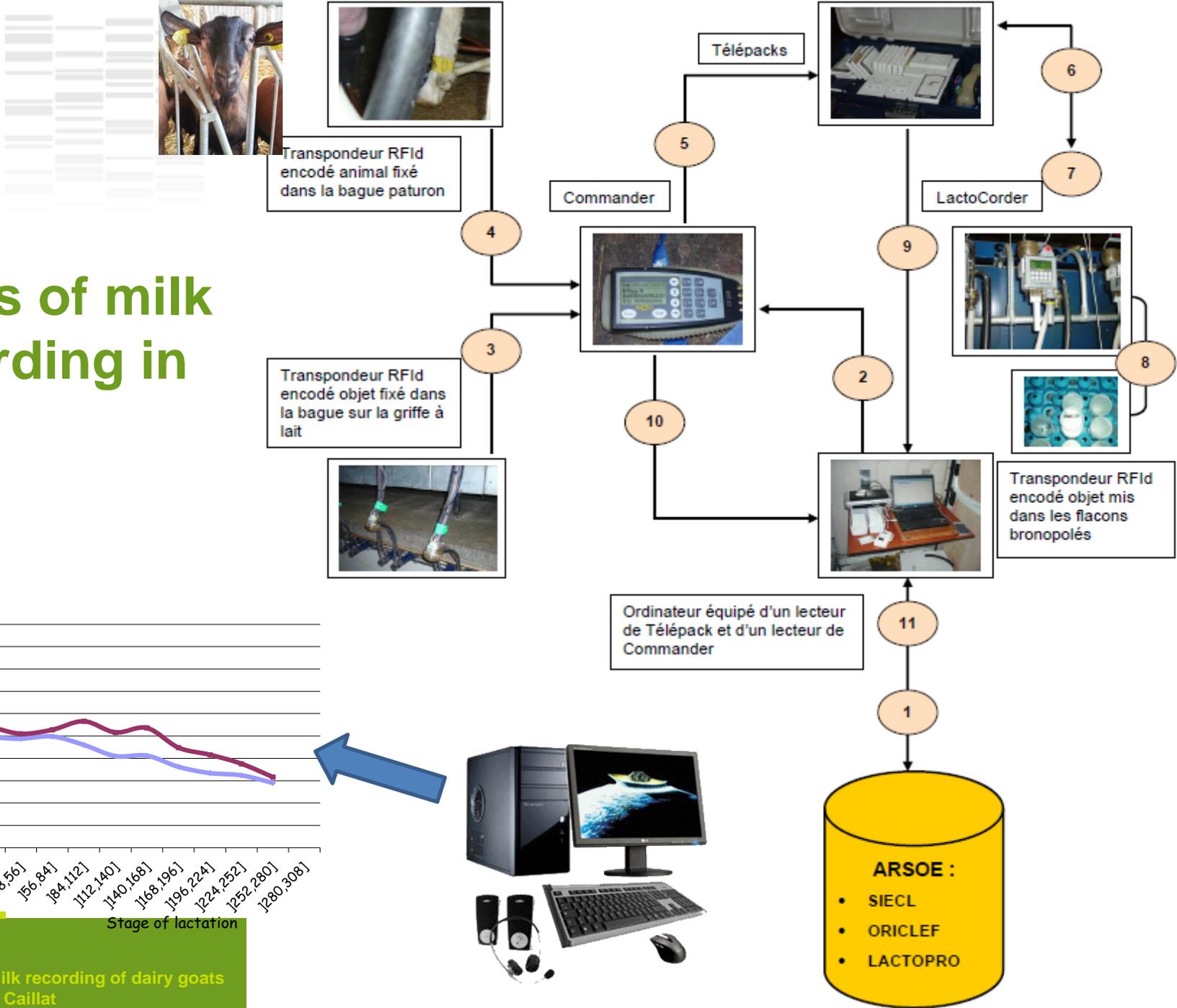
INRA-Gely II test
(INRA Bourges)

→ Derivative test



Lactocorder®
(in farm + INRA Poitiers)

❖ Steps of milk recording in farm



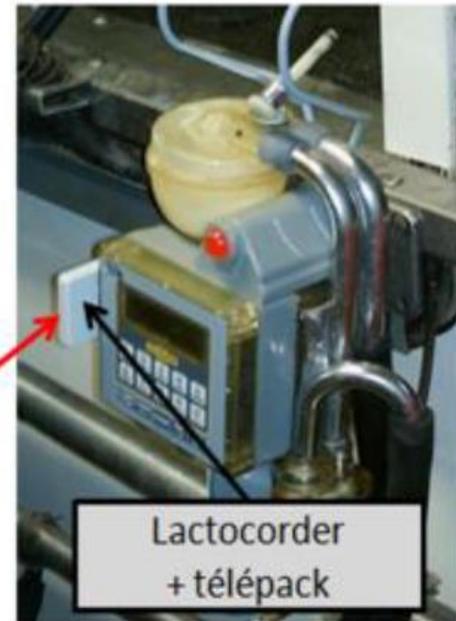
❖ Chaining informations with lactocorder®



Identifiant animal



Identifiant objet



Lactocorder
+ télépack



Commander

Video

❖ Unloading data after milking



LactoCorder® - Programme d'évaluation: France

Fichier Data- TéléPack Evaluation Réglages Utilitaire Outils Aide

LactoCorder®
Logiciel PC
LACTOPRO
Version 6.0.26

Transfert de données

- Evaluation
- Préparation
- Illustration

Sous licence pour: France

LACTO CORDER

Sous licence pour: France

ESC Quitter F1 Aide F2 Données d'élevage F3 Données de mesure F4 Evaluation F5 Nettoyage F6 Statistique F7 Exporter F10 Menu

FR 00:08 02/11/2013



❖ Data of lactocorder software : 1 line / goat

LactoCorder® - Programme d'évaluation: France

Fichier Data- TéléPack 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 e	AK	EM kg	M	
*	15177139169	000013238516	00000092	LOKI	n.	n.v.	n.v.	0	5096234817	012FC25F41	000000002214	03.07.99	06:07	M	n.	n.	0	0	0	00	n.v	11	12	1
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ESC Quitter

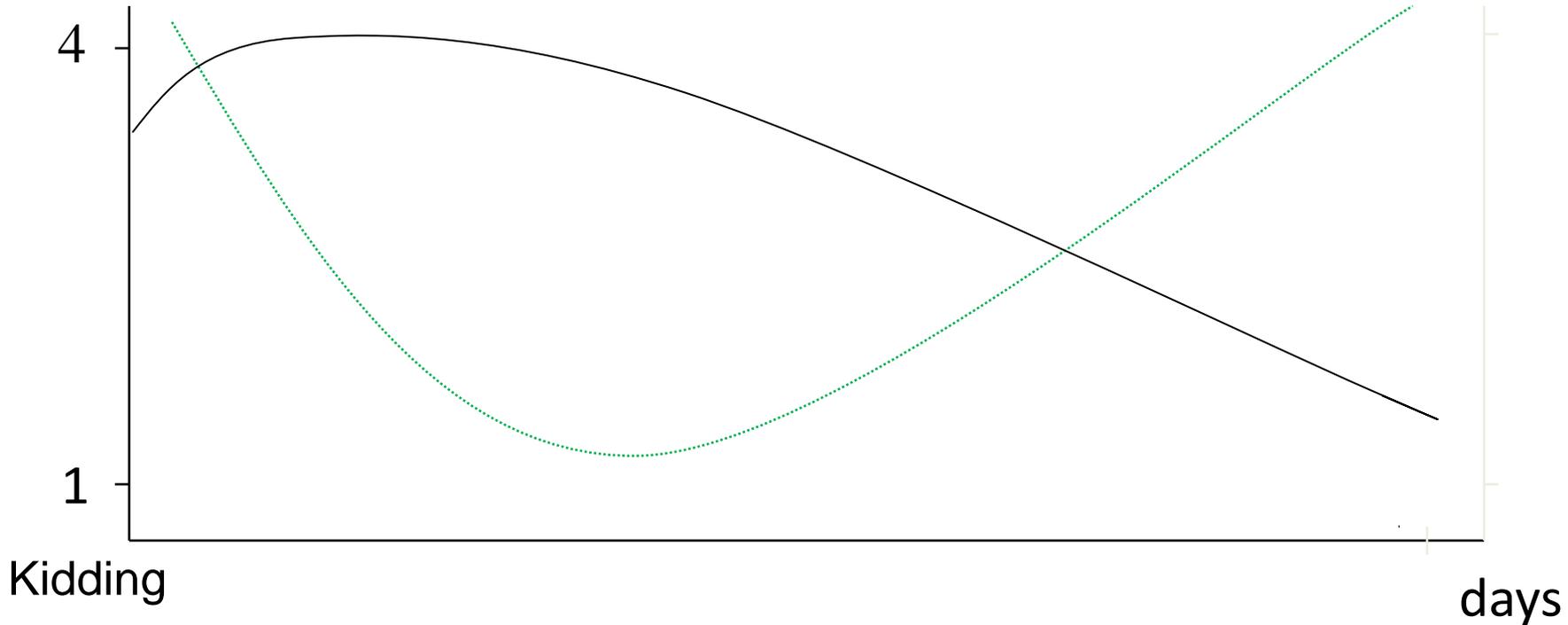
F1 Aide F2 Tri + F3 Tri - F4 Graphique F5 Graphique S/M F6 Statistique F7 Exporter F8 CpSpéc F9 Imprimer F10 Menu

FR 11:20 01/11/2013

❖ Milk production - Traits

- Milk Yield (kg/d)

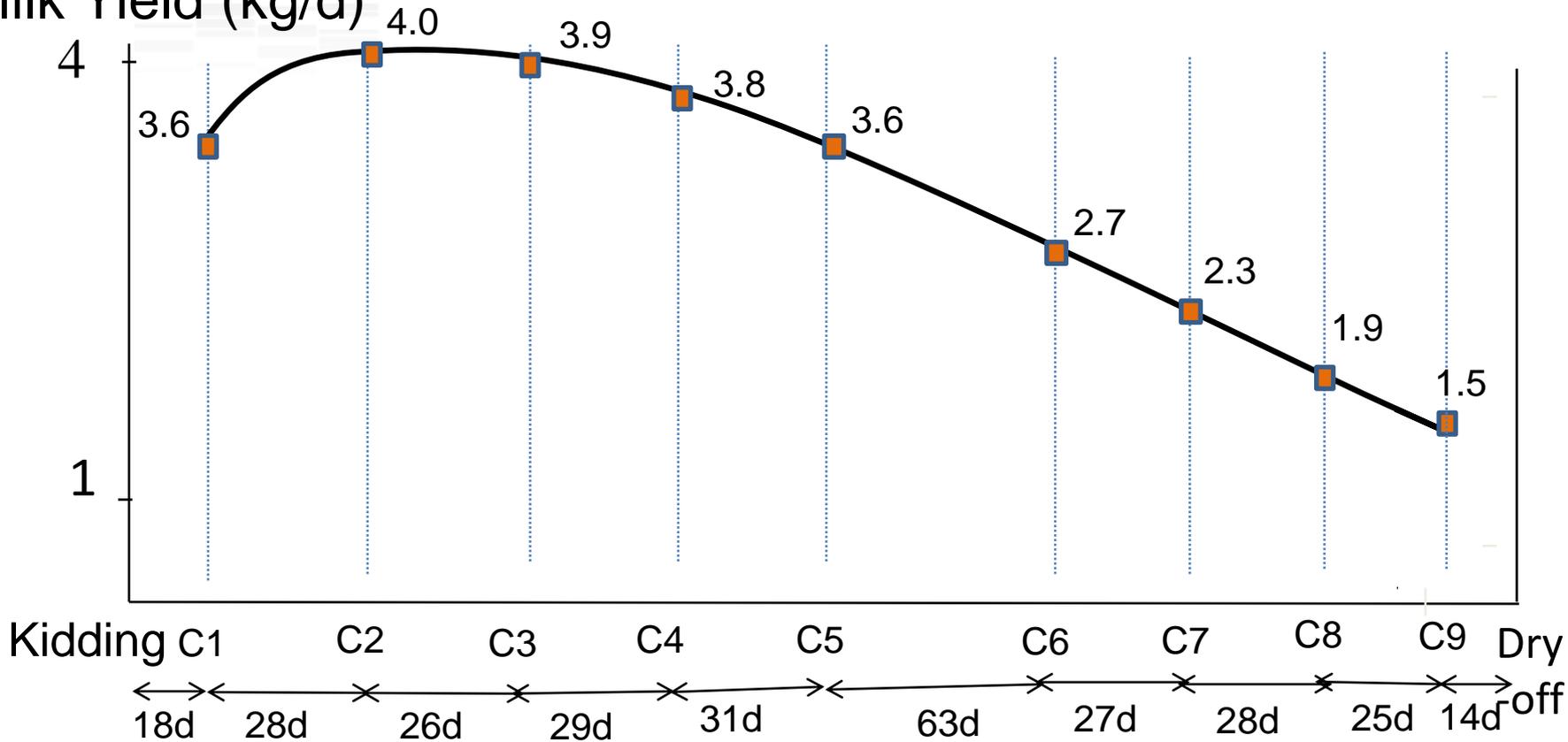
Solid Contents g/kg



Daily production : milk recording

❖ Official Milk Recording

- Milk Yield (kg/d)

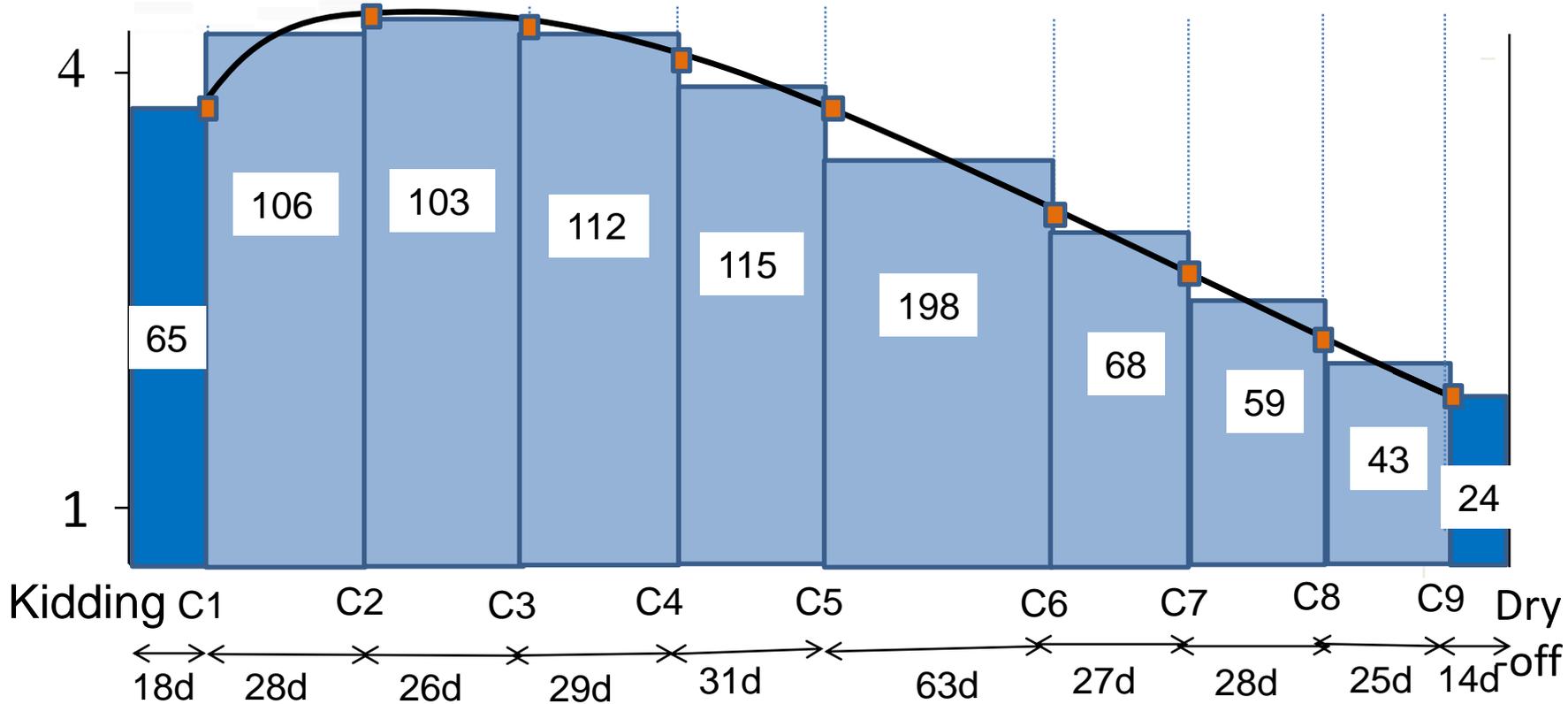


Daily production + quality (fat, protein, cells)

➔ about 1 control/month (evening/morning)

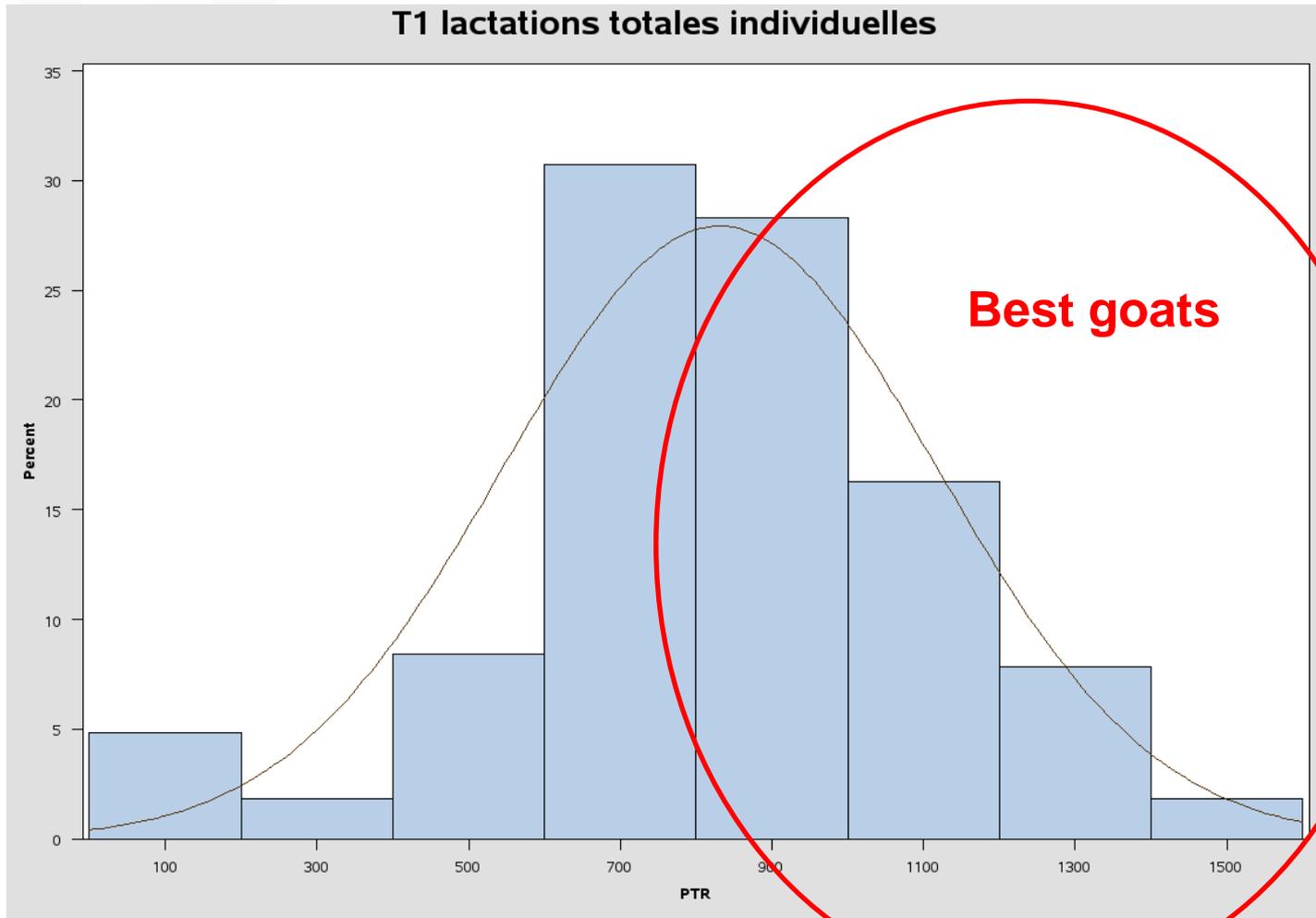
❖ Milk production – Fleischmann method

- Milk Yield (kg/d)

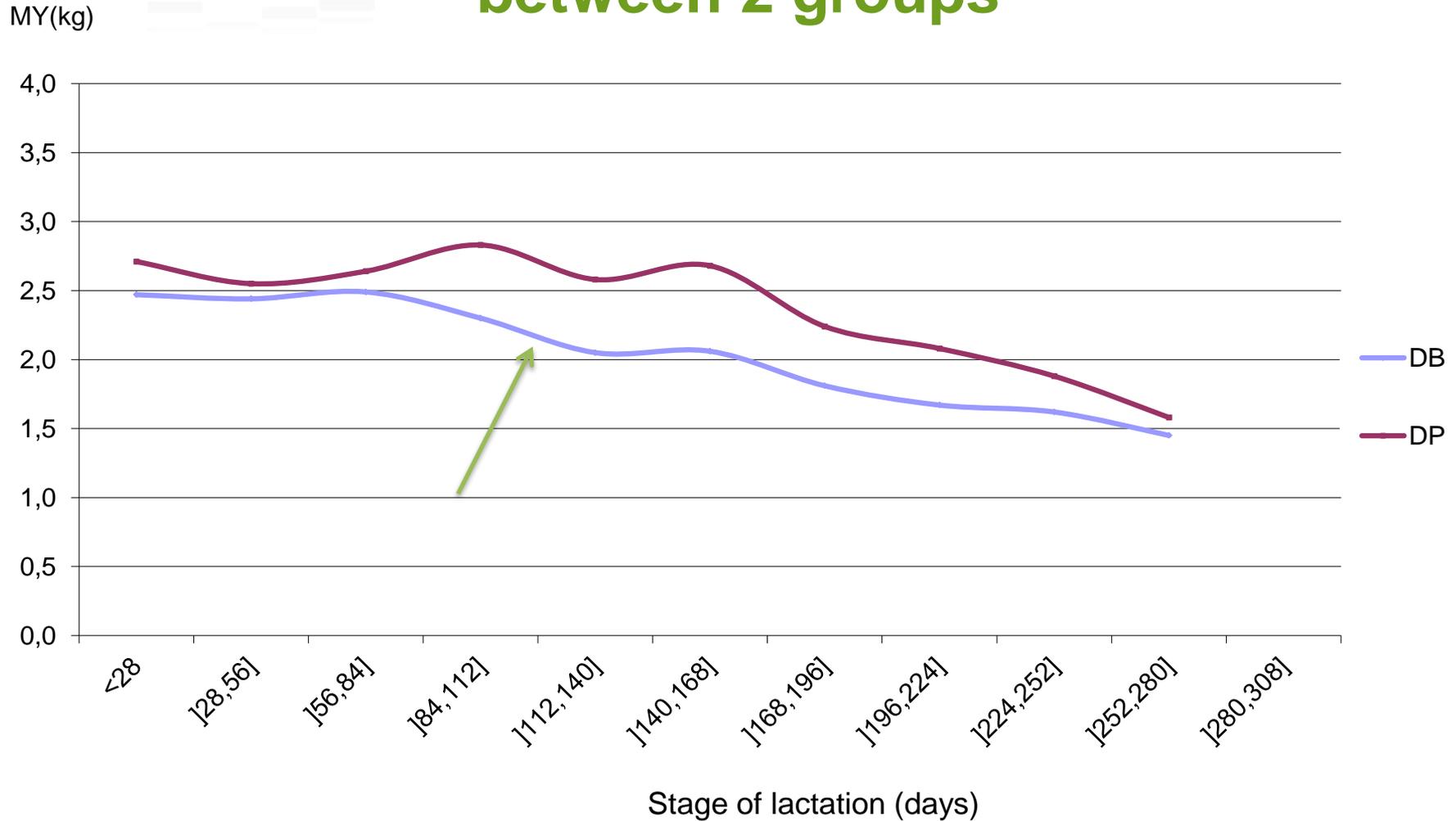


Total lactation: area under the curves → 891kg

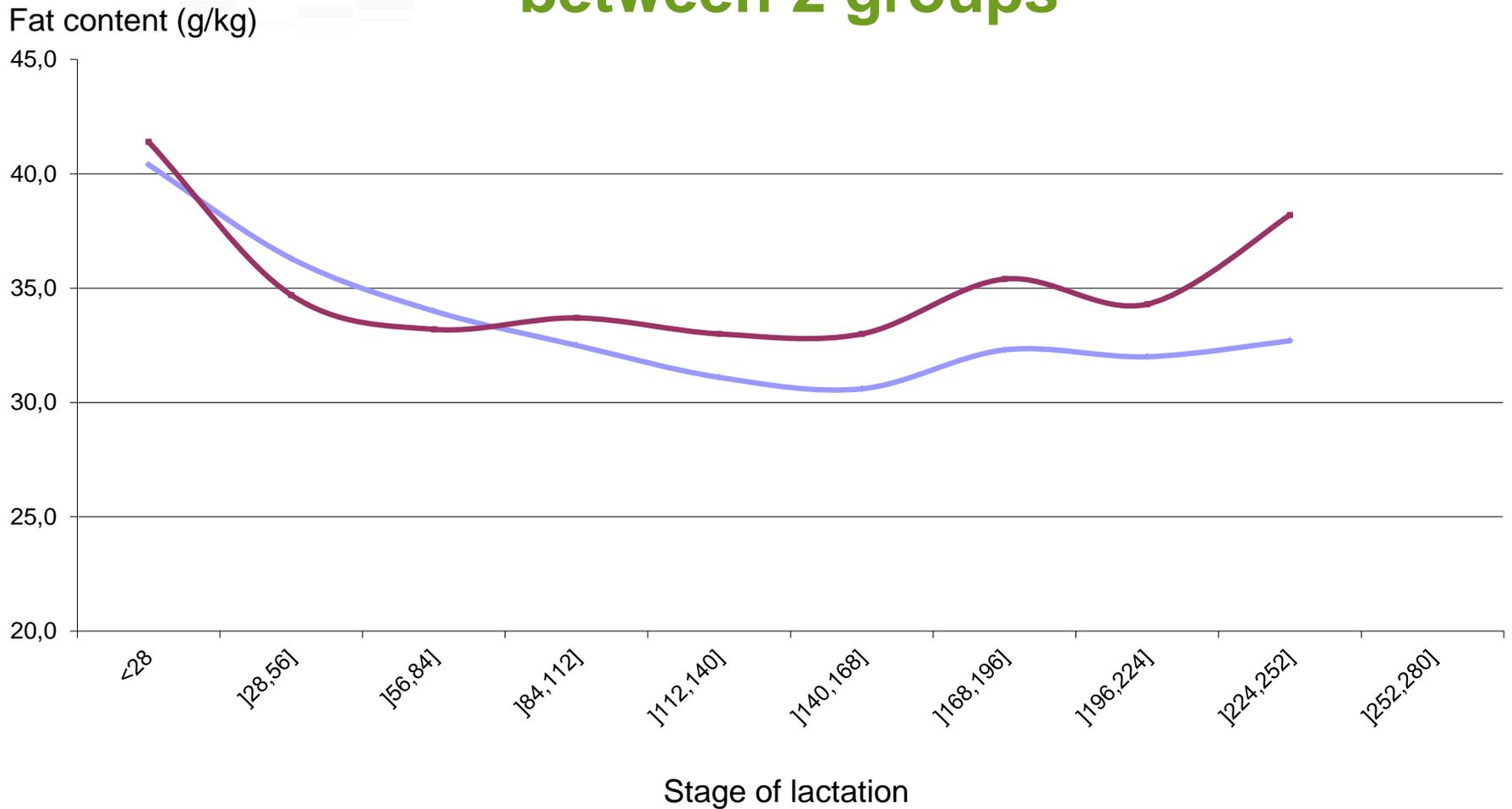
❖ Results : rankings goats on annual lactation



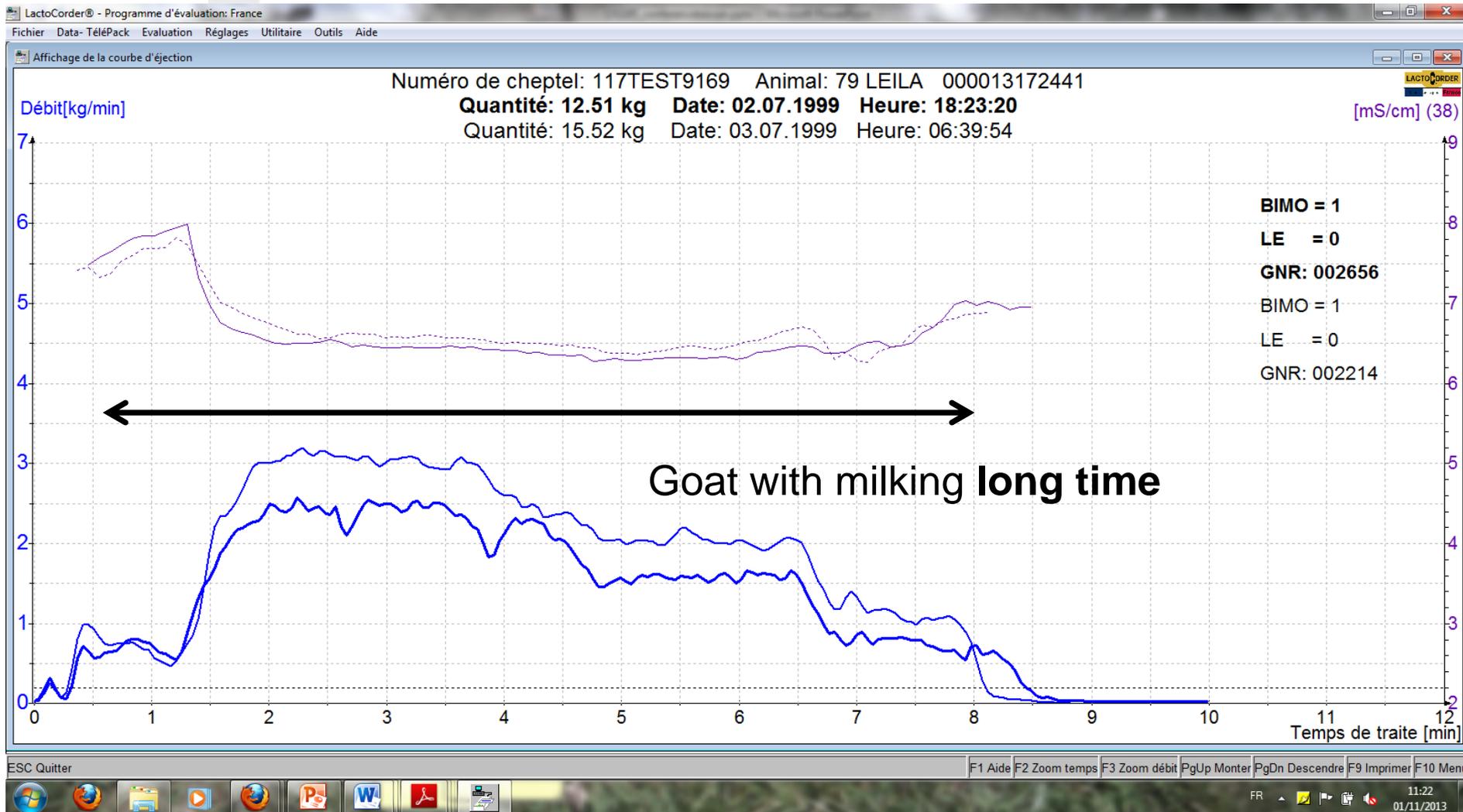
❖ Results : comparison of lactation between 2 groups



❖ Results : comparison of lactation between 2 groups



❖ Results : Milking flow kinetics of goats



* *Example in dairy cow*

❖ 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)
- Possible solution 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