INRA SCIENCE & IMPACT

Food Agriculture Environment

INRA division : Anim. physiol. & farming systems

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ITAB Fédérer les expertises, développer les techniques

Institut Technique de l'Agriculture Biologique

AB AGRICULTURE BIOLOGIQUE

A new technical referencing system for Organic Rabbit Farming in France

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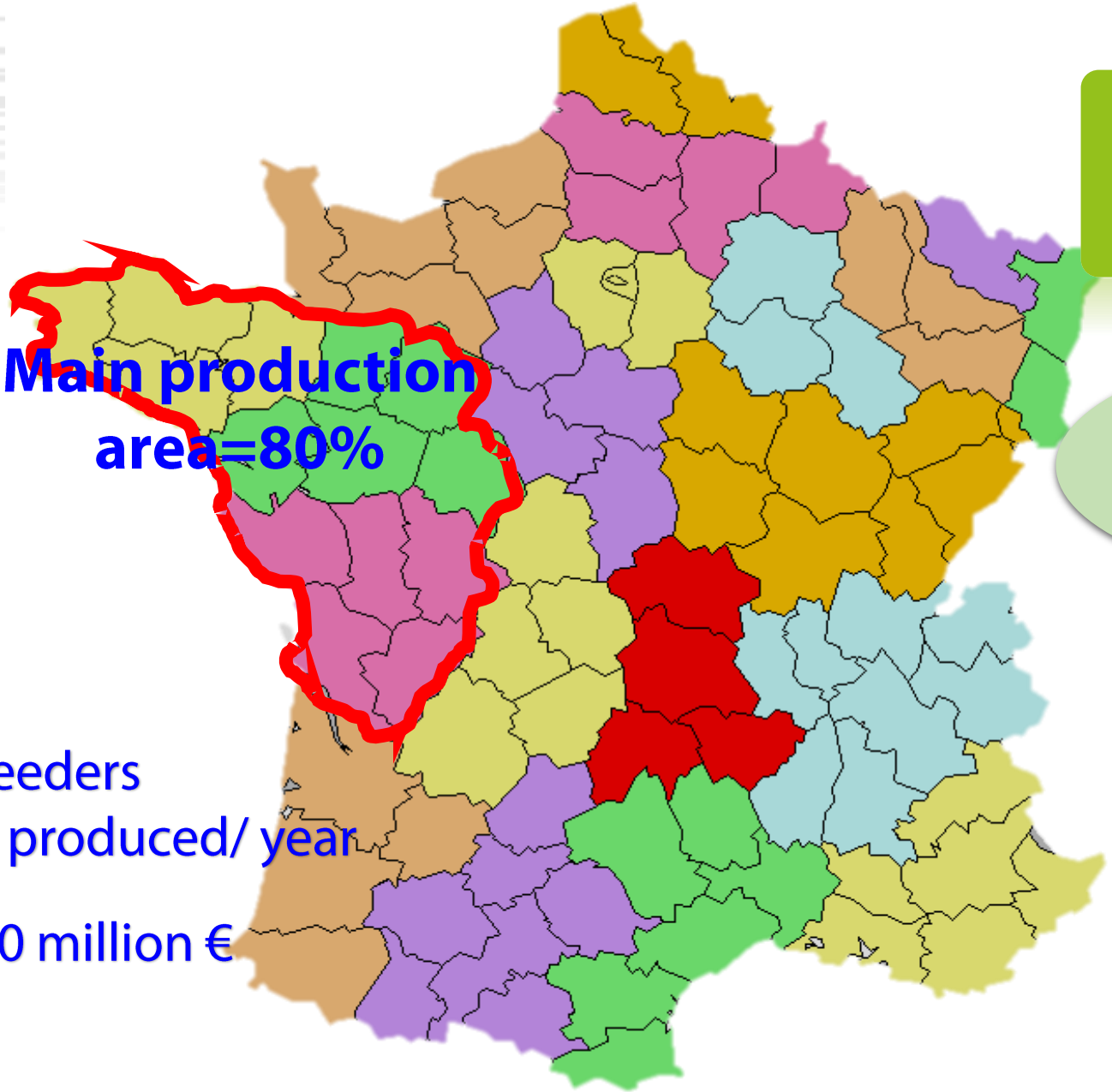
Context of Rabbit farming : two very different systems

"battery breeding" = intensive standard system

- Main stream system
- Pelleted feed
- 100% indoor
- Prophylaxy with antibiotics

Organic farming – outdoor and link to the soil!

- Minor system, but emerging
- Feed linked to the farm and the soil => rabbit is an herbivore
- No chemicals for health treatments



50 breeders
20-25 000 heads
produced / year
≈ 450 000 €

1000 breeders
48 millions heads produced/ year

Rabbit meat ≈ 500 million €

Challenges in Organic Rabbit Farming

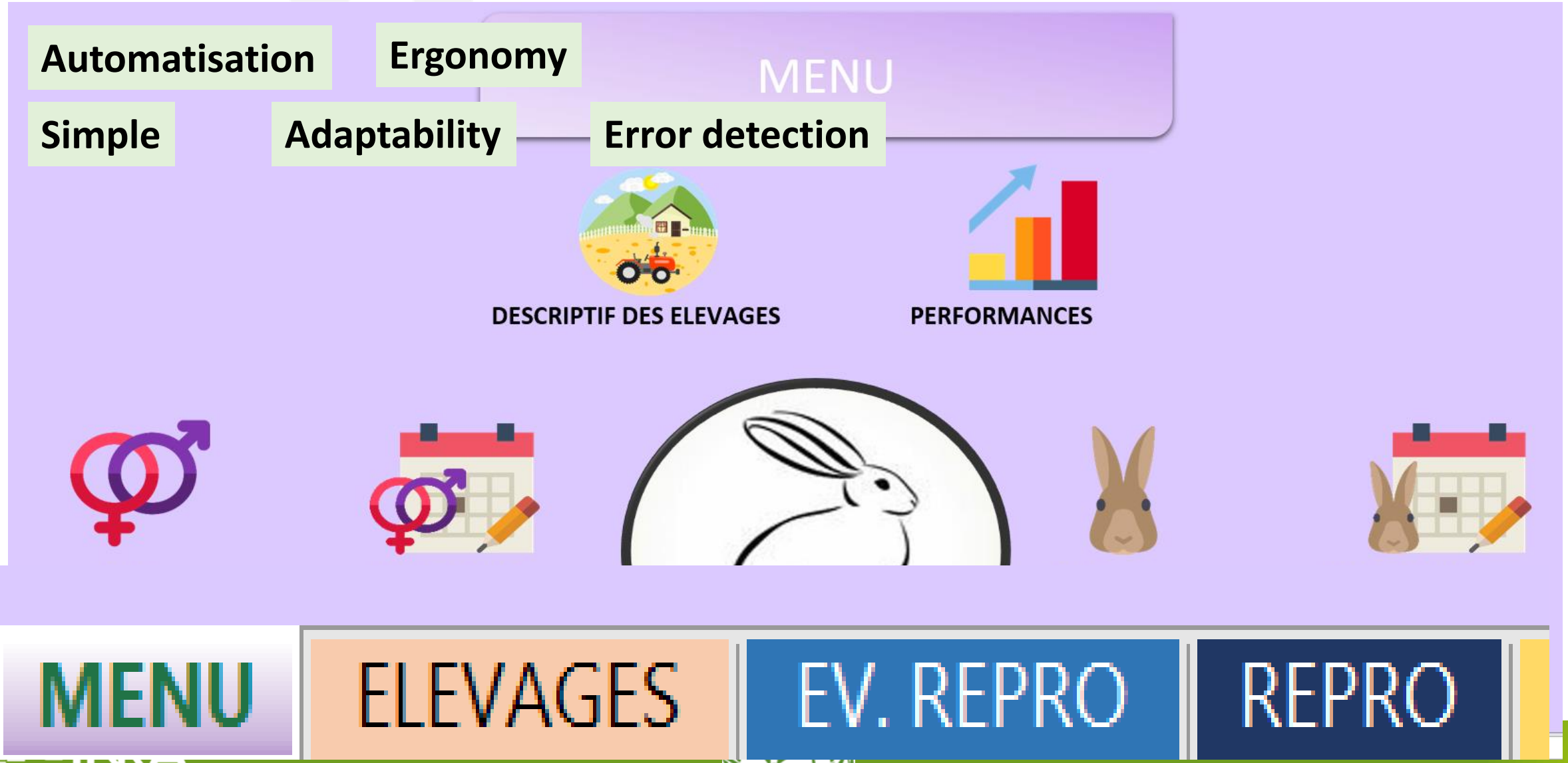
- ❖ No reliable technical references => constraint to development and new installations
- ❖ Little knowledge about feeding and health management: parasitism etc.

Objectives

Acquire technical references from the field

Contribute to the emergence of Organic Rabbits Farming, or on pasture.

First step: creating an **Excel program** to collect data from Organic rabbit breeders



- data collection (laborious)
- Homogenization and cleaning of data according to strict rules
- 9 farms surveyed, 6 farms with data over a long period

	Première SA	Fin Prod	Présence	Nb SA
	01/08/2017	01/08/2017	0	1
	04/08/2017	04/08/2017	0	1
	04/08/2017	04/08/2017	0	1
017	12/10/2016	06/11/2016	25	2
	20/06/2017	20/07/2017	30	1
016	19/04/2016	19/06/2016	61	3
015	09/07/2015	13/09/2015	66	2
016	18/12/2015	22/02/2016	66	2
	13/06/2017	19/08/2017	67	2
	14/04/2016	29/06/2016	76	2
ND	ND	ND	25/02/2017	20/07/2017	145	4
ND	ND	ND	16/06/2015	27/01/2015	24/06/2015	148	3
ND	ND	ND	30/06/2015	20/02/2015	20/07/2015	150	4
ND	ND	ND	19/07/2015	28/01/2015	05/07/2015	158	3
ND	23/02/2016	ND	ND	23/02/2016	09/08/2016	168	3
ND	23/02/2016	ND	08/09/2016	23/02/2016	10/08/2016	169	3
ND	ND	ND	16/02/2015	01/11/2014	22/04/2015	172	3
ND	ND	ND	ND	11/01/2017	03/07/2017	173	4

Période : de	01/01/2015	à	31/12/2017

Identifiant elevage	Tous les élevages			A		
Indicateurs	**V**	**N**	**σ**	**V**	**N**	**σ**
Femelles eq Jours (A)	**199,0**	-	-	**57,7**	-	-
Total femelles (B)	**583**	(719)	-	**237**	(324)	-
Mâles eq Jours (C)	**44,0**	-	-	**9,8**	-	-
Total mâles	**104**	(133)	-	**21**	(31)	-
Ratio Femelle eqJ/Mâle eq J	**4,5**	(A) / (C)	-	**11,3**	(A) / (C)	-
Mâles entrants	**55**	(133)	-	**10**	(31)	-
Mâles achetés	**0**	(5)	-	**ND**	(0)	-
Prix mâles achetés (€/lapin)	**ND**	(0)	ND	**ND**	(0)	ND
Mâles gardés	**5**	(5)	-	**ND**	(0)	-
Temps de production mâles (jours)	**463**	(101)	312	**509**	(21)	300,855
Taux renouvellement mâles (%)	**52,9**	(133)	-	**47,6**	(31)	-
Femelles entrantes	**381**	(719)	-	**206**	(324)	-

19	Taux renouvellement mâles (%)	**52,9**	(133)	-	**47,6**	(31)	-	**69,2**	(14)	-	**48,0**
20	Femelles entrantes	**381**	(719)	-	**206**	(324)	-	**28**	(59)	-	**19**

MENU | ELEVAGES | EV. REPRO | REPRO | EV. LAPINS | LAPINS | PERFORMANCES | QUALITE DONNEES

Prêt

130 %

Characteristics of the reproduction unit (6 farms over 3 years, 2015-2017)

	Mean	*Variability*
Flock size (n=6)		
Females (av. nb./y.)	33.2	
Males (av. nb./y.)	7.3	
Ratio female/male	4.5	
Productive time and mortality of breeding does		
Production time, females, d.	374	*±281*
Production time, males, d.	463	*±312*
Renewing rate, females, % y.	65	*range : 16-**93***
Mortality rate, females, % y.	21	*range: 6-59*
Culling rate, females, % y.	12	*range: **0-72***

Performances of **reproduction**

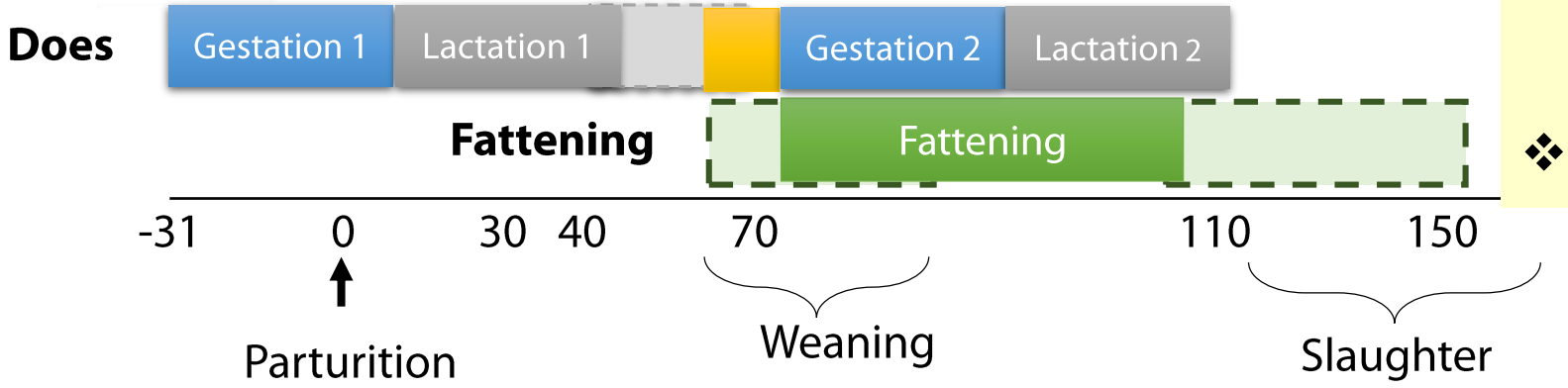
	Mean	*Variability*
Mating nb /y/ ♀	4.8	*2.6-7.3*
Fertility rate (♀), %	60	*30-73*
Parturition nb/♀/y	2.7	*0.8-3.8*
Delivery interval (days)	112	*91-138*
Nb birth alive / delivery	8.0	*7.7-8.2*
Nb birth alive /♀/y	25.3	*17.5-34.8*

Performances at **weaning**

	Mean	*Variability*
Total nb (3 years, 6 farms)	1052	
Age at weaning, days	61	*41-68*
Weaned nb/delivery	6.2	*4.5-6.7*
Weaned nb /doe/y	18.7	*1.3-26.8*
Survival rate before weaning, %	73.8	63-82

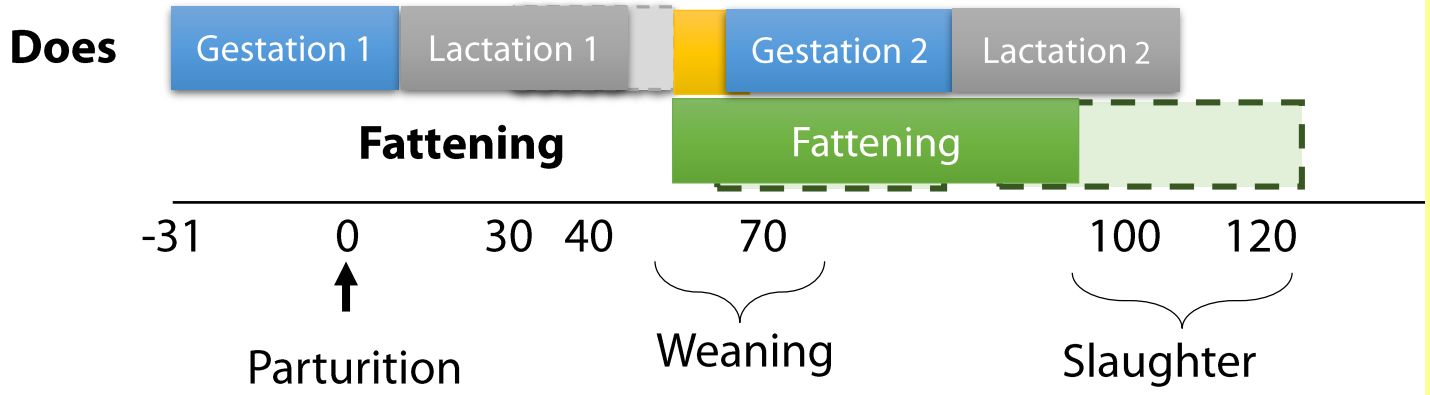
Conclusions : modest performances **but very diversified systems** and significant technical progress in breeding management

extensive management



- **Reproduction** : 3 litters of 6 weaned rabbit per year
- **18-20 weaned /doe/y**

May be turned in a bit less extensive



- **Reproduction** : 5 to 6 litters of 6 weaned rabbit per year
- **Growth ≈ 25 g/d to reach 2.3 kg at 100d**
- **30-35 weaned /doe/y**

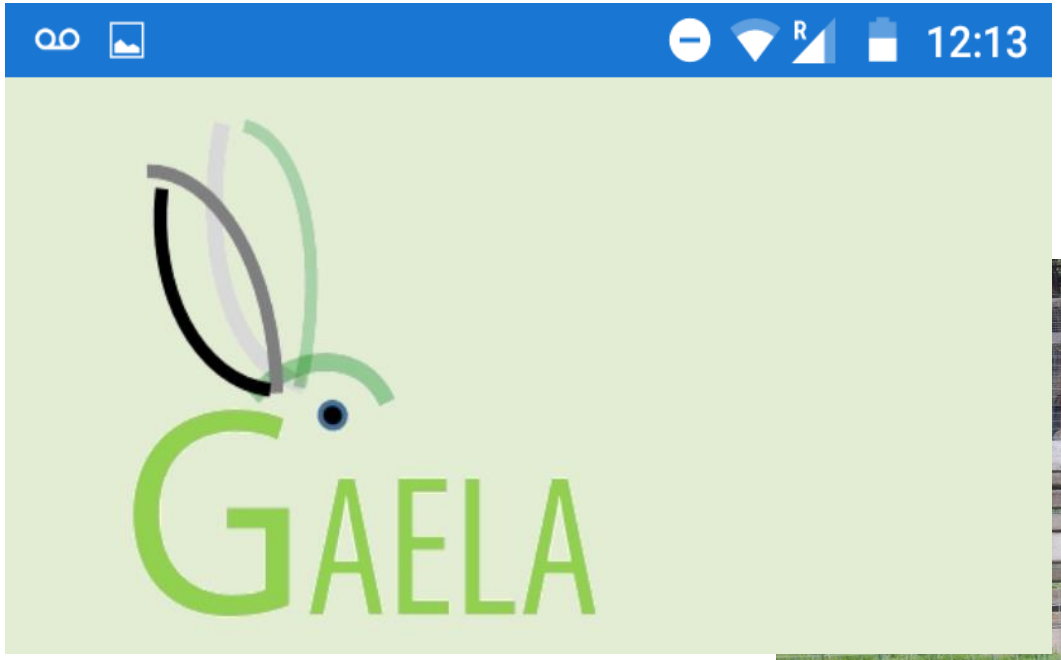
Perspectives

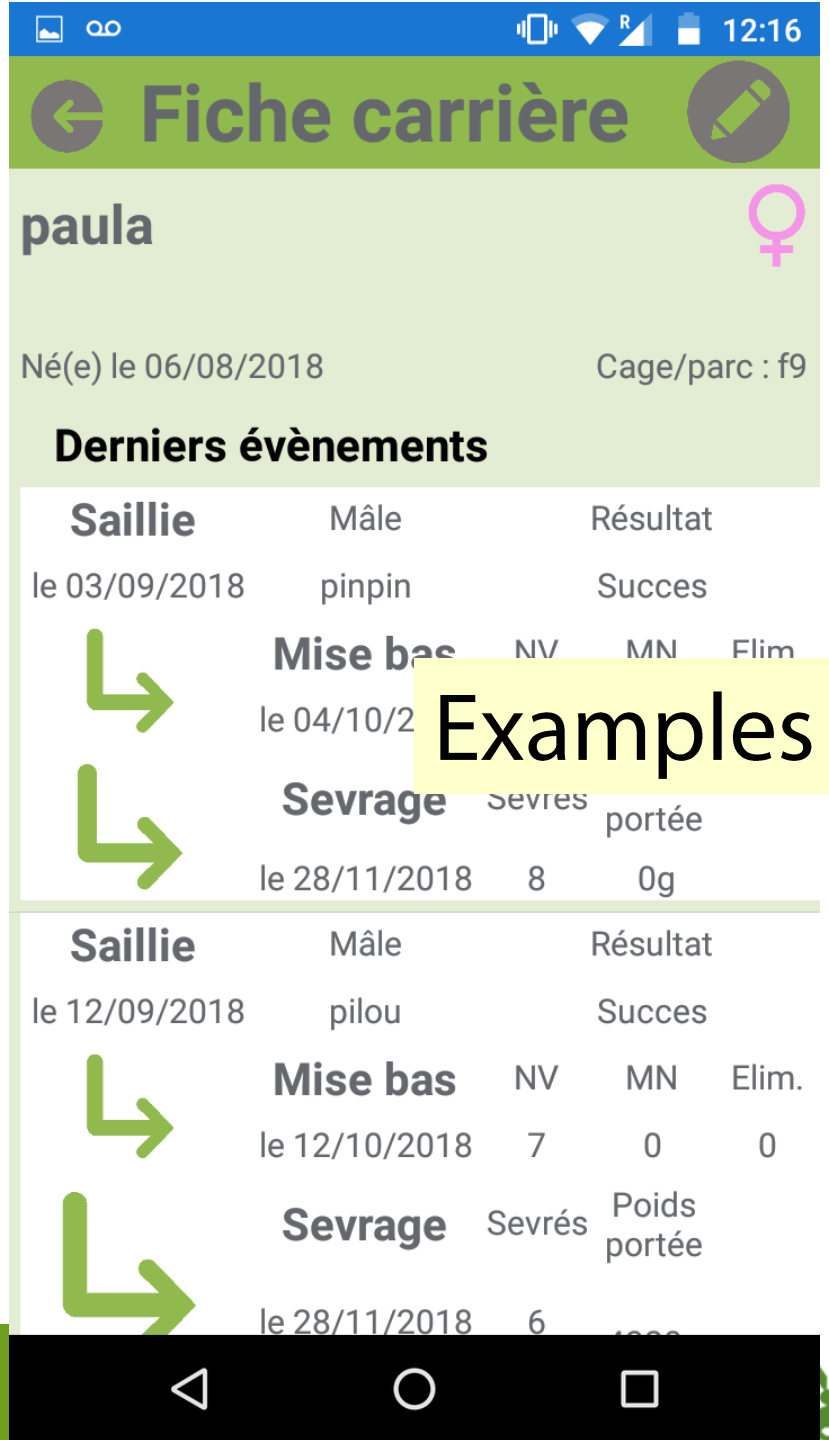
Smartphone application : GAELA

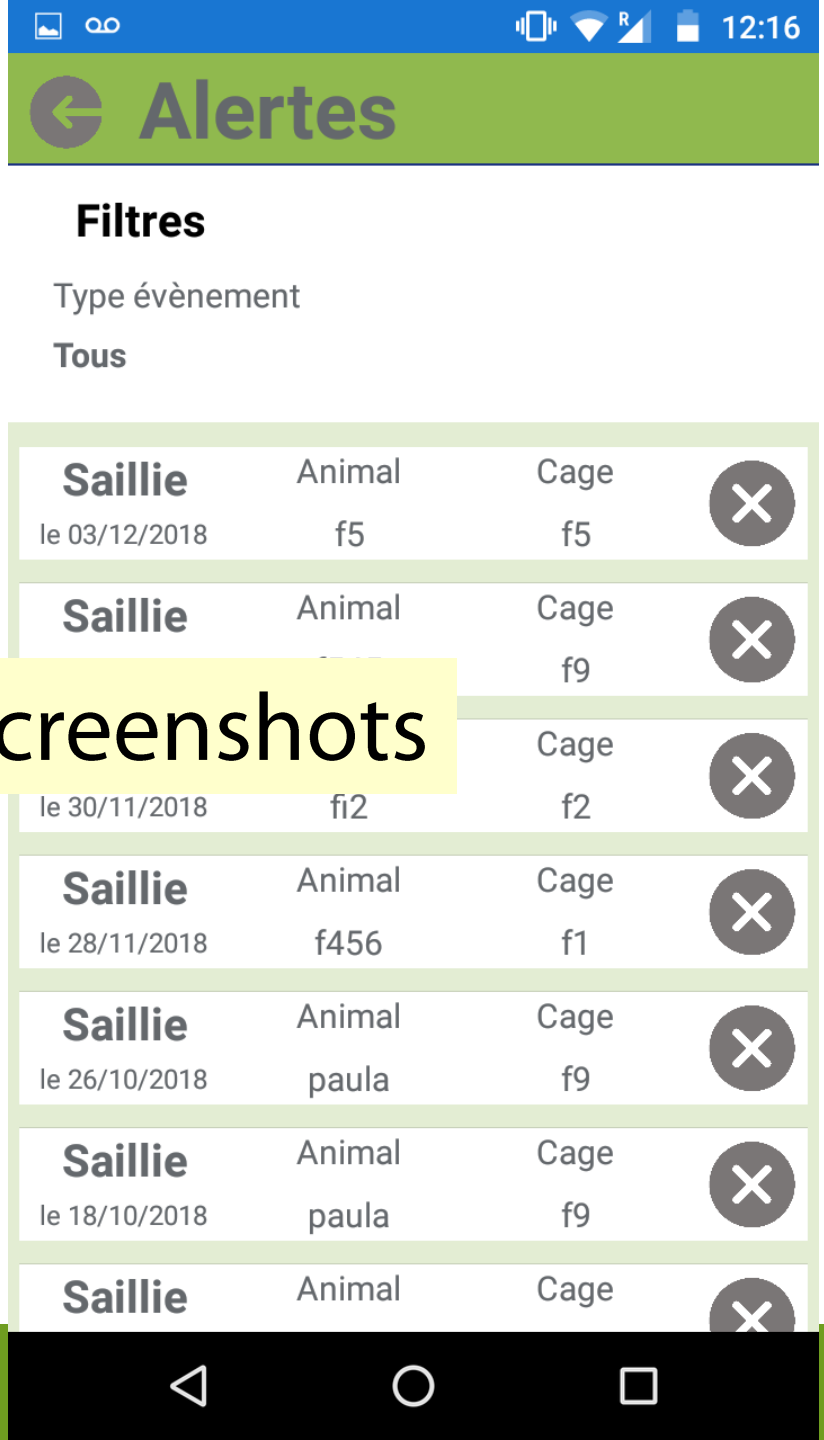
Support software for breeding management and allowing a direct and unique input of management data of a rabbit breeding

Summer 2019 : test version in some farms

Autumn 2019 : start spreading in farms







Examples of screenshots

Newspaper article:
"L'éleveur du lapin" ,
sept 2010

♦ André Lebrun, Ille-et-Vilaine

Le **lapin bio** : une production où beaucoup reste à **inventer**

Farm with 2 persons full time:
one with organic rabbit & one
for organic milk production

The largest ORF in France (founded in 2015)
About 100 movable cages for does
100% rabbit production with 2 full time people

Mixt system:
Reproduction unit = movable cages
Fattening = paddocks

Genetic : HYCOLE (French hybrid NZW x Cal)
Family = 14 females + 2 males

Semi-intensive reproduction rythm :
aim=> Interval part to part = 50d
Weaning = 50d

4 fattening paddocks of 700m² + wirenet on the top (predation)

Slaughter workshop <u>at farm</u> (2016; value 40 000€), following UE regulation.

"money come back" scheduled on 8 years.

200 rabb. Slaugtered / month

(one day per week: Monday ; .

Tuesday= packaging & delivery

[15 rab./h].

Other farmers choose "pastured rabbits" but **without** organic labelling

Web site of a farm (north of France) having rabbits on pasture (without organic label)

http://volailles-peniguel.com/lapinsdeprairies/

Historique du projet

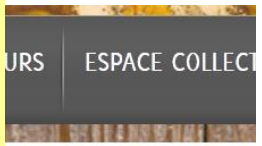
Il n'était pas envisageable de produire du lapin à échelle industrielle.

Bon nombre d'amis se sont montrés enthousiastes et confiants. De très nombreux témoignages l'ont confortés dans l'idée que de plus en plus de consommateurs recherchent des produits vrais « comme faisait ma grand-mère ! », **ils veulent manger de l'authentique et pas de l'antibiotique**...

Jean-Charles élevait déjà des lapins pour sa consommation personnelle et connaît donc quelques ficelles ...

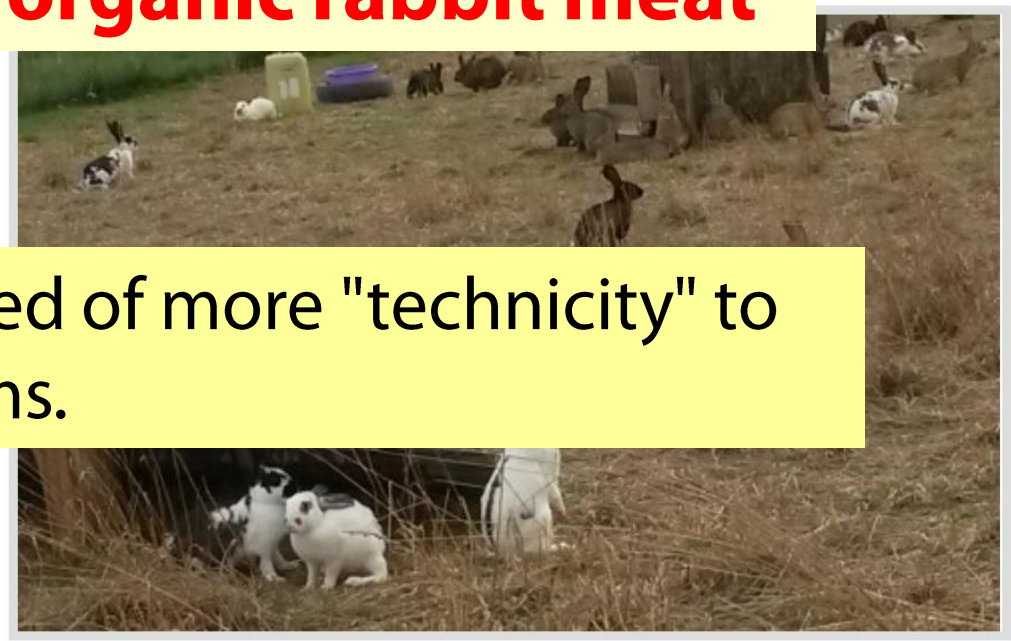
Puis il participe à un voyage d'étude avec des éleveurs de lapins bio. Ce stage l'aide à faire son choix dans la filière dite **lapin naturel** : les contraintes et cahier des charges du label BIO, pour trouver tout simplement une prairie compatible, s'avéraient trop compliqués. De plus les coûts de productions sont plus qualitatif notable. La filière "lapin naturel" représente le meilleur compromis BIO.

Professionals are organising ,
at least in France : associations, cooperatives
Technicity is developping : public services in France, websites, etc.



Le Lapin Bio. Une production trop

High market demand for organic rabbit meat



In brief : an emerging "job", need of more "technicity" to manage these pastured systems.

Commandez l'agenda
FNAB 2016

A l'occasion de la création de l'Association des éleveurs de lapin bio de France, Symbiose revient sur un production marginale mais qui offre des débouchés.

Thank you for your attention

HOWEVER : some scientific publications on pastured rabbit systems: Grass intake and growth according to pasture abundance

animal

Martin *et al.*, 2016. Herbage intake regulation and growth of rabbits raised on grasslands: back to basics and looking forward. Animal 10, 1609-1618.

Joly *et al.*, 2018. PASTRAB - a model for simulating intake regulation and growth of rabbits raised on pastures. Animal 12, 1642-1651.

Legendre *et al.*, 2019. Herbage intake and growth of rabbits under different pasture type, herbage allowance and quality conditions in organic production. *Animal, 13, 495-501.*

Papers in congresses :

WRC , EAAP (2017, 2018, 2019)

Management of parasitim for pastured rabbits

Legendre et al., 2017. How high is herbage intake of organic rabbits grazing fescue or sainfoin? In: EAAP (Ed.), 68th EAAP conference, Wageningen Press, Tallin, Estonia, p. 755.

Legendre H., 2017. Sainfoin as a replacement of alfalfa: nutritive value and performances in the rabbit. In: EAAP (Ed.), 68th EAAP conference, Wageningen Press, Tallin, Estonia, p. 749.

Legendre et al., 2018. Pastured organic rabbit farming: growth of rabbits under different herbage allowance and quality. In: EAAP (Ed), 69th EAAP conference, 27-30 aug., Dubrovnik, Croatia, p158.