

THE PROJECT

330

farmers

8-10

heads/farmer with

42

ton/farmer of annual milk production

1-10

milking cows

Brune de l'Atlas (local breed)

weighing **300 KG** and producing **4-5 L/day**

Holstein

weighing **650 KG** and producing **18-25 L/day**

Montbéliarde

weighing **725 KG** and producing **15-25 L/day**

PROJECT TEAM



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BYPRODUCTS VALORIZATION

TO REDUCE FEED COSTS & INCREASE FARMERS' AUTONOMY



- A **50%** increase of milk production per cow
- A **30%** of feed cost reduction
- An improvement of **byproducts availability**



To valorize:

- **Agro-industrial byproducts** (e.g. tomatoes pulp and olive pomace)
- **Agricultural byproducts** (e.g. cereal straw)



Today, **up to 10%** of the farmers of the project have introduced these new practices
Implementation process

H'LIB DZAIR IN ALGERIA



THE COUNTRY

39.7 million inhabitants

3,500,000 tons/year of milk production

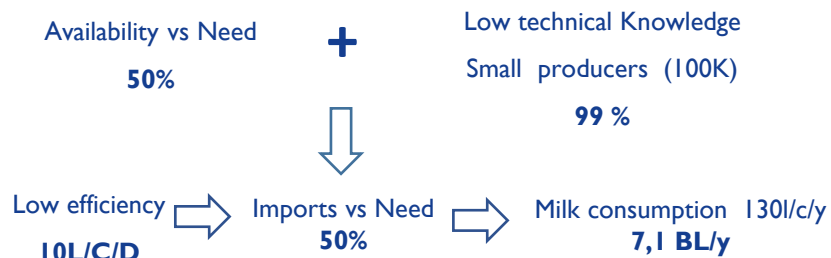
4,000,000 tons/year of dairy importation

ICONIC PRODUCT







LOCAL DAIRY FARMS

Key figures on local context:



FEED AVAILABLE LOCALLY

Currency conversion: 1 € = 120 DZD

Fodder/Byproducts	Energy value	Protein value	Rumination power	Digestibility	Cost (Local currency/ KG DM) DM: Dry Matter
Oat hay	Medium	Weak	Excellent	Medium	50 DZD/KG
Alfalfa hay	Medium	Excellent	Excellent	Excellent	55 DZD/KG
Corn silage	Excellent	Weak	Weak	Good	15 DZD/KG
Vesch Oat	Medium	Medium	Good	Good	14 DZD/KG
 Cereal straw	Weak	Weak	Good	Weak	40 DZD/KG
 Olive pomace	<i>Depends on fat content</i>	Weak	Good	Weak	3 DZD/KG
 Tomatoes pulp	Medium	Very good	Good	Good	3 DZD/KG
 Beer dreche	Good	Excellent	Good	Weak	4 DZD/KG

Byproducts:



Agricultural



Agro-industrial

DAIRY FARMING OPERATING SYSTEM DESCRIPTION

Average from project farms reality

- FARM DESCRIPTION

Total area of farming operation: 04 m² per cow

Total surface dedicated for feed production: 800,000 ha (for cattle and small ruminant)

Total surface for cattle pasture: insignificant / zero grazing

Total feed production per year: 03 million Tons

- CATTLE DESCRIPTION

Milking cows: Brune de l'Atlas – Holstein - Montbéliarde

Weight: 250-300 KG (Brune de l'Atlas) – 600-700 KG (Holstein) – 650-800 KG (Montbéliarde)

Yield per milking cow: 4-5 L per day (Brune de l'Atlas) – 18-25 L per day (Holstein) – 15-25 L per day (Montbéliarde)


Total herd: 8 to 10 heads per farmer

Total milking cows: 1 to 10 per farmer



Total milk production per year: 42 ton per farmer

A focus on **water, from H'lib Dzair field data** : “Free access to water is key to improve the milk production and the cow’s health. In the same way that the diets need to be balanced, water must be provided in sufficient quantity (free water is the best) and in good quality. An underconsumption of water has impact on production: if you reduce by 20% the water available, the production will decrease by 7.6%, and by 16% if you reduce by 40% the availability of water. You can thus loose until 02liters of milk/cow/day.

EXAMPLE OF FEED RATION VALORIZING LOCAL BYPRODUCTS:

FEED RATION 1	
For a cow which produces: 15 KG/Day of milk	
FEED	KG DM per day
Oat hay	4.5 KG
Maize silage	6 KG
 Olive pomace	3.2 KG
Concentrated feed	4 KG

Cost: **598 DZD/KG**

FEED RATION 2	
For a cow which produces : 15 KG/Day of milk	
FEED	KG DM per day
 Tomatos pulp	5.2 KG
Oat hay	5.6 KG
 Straw	1.8 KG
Concentrate feed	3.1 KG

Cost: **427 DZD/KG**

See more in Appendix (p6)

Byproducts:



Agricultural



Agro-industrial

BYPRODUCTS: KEY PROJECT INPUTS

The context:

To find local feed alternatives in order to reinforce the autonomy of farmers in terms of feed (reduction of availability) and also to improve farms' yields.

Milking cows have important needs in fodder. Feed management represents up to 90 % of the farming costs so from the beginning of the project we worked on an action plan on feed. A good feed management helps to reinforce the autonomy of farmers but also, it improves the efficiency and the yield of the farms.

The idea:

To valorize agro-industrial (e.g. olive pomace and tomatoes pulp) and agricultural (e.g. cereal straw) byproducts.

A lot of agro-industrial byproducts are available in the regions of the project: beer byproducts, tomato pulps, olive-pomace. In the Extreme Est of Algeria, tomatoes pulp is frequently used during dry periods (in august) to reinforce the fodder ration. It is conserved as silage.

Olive-pomaces are also good industrial byproducts which come from olive oil extraction. They can be introduced in a feed ration with a supplement in nitrogen.

Global implementation results of the project:

▪ **A 50% increase of milk production per cow**

This practice helped to pass from 10 liters per cow to 20-25 liters of milk per cow in some farms which implemented these practices.

▪ **A 30% of feed cost reduction**

Feed rations valorizing byproducts can be more than 30% cheaper than standard ration (e.g. the feed ration n°2 in page 3 is 39% cheaper than a standard ration).

▪ **An improvement of byproducts availability**

The impact:

Today, up to 10% of the farmers of the project have introduced these new practices in terms of feed

Today, 10% of the farmers of the project are using byproducts because it really depends on the availabilities of byproducts locally.

The challenges:

- To valorize local byproducts of Algerian good industry (circular economy)
- To secure full year byproducts procurement with the improvement
- To make P&L dairy farmers increase

The dissemination of these practices:

- Existing means of communication:
 - **Trainings** with a focus on the added-value of byproducts (cost benefits, secure procurement, secure procurement feed & business)
 - **Field visits**
 - **Newsletters, Website, Facebook Community**
- Ambitions:
 - **App** (to be developed at the end of 2017)

“Feed management is a key element for our small farmers: we are lacking of farmers and farmers cannot earn their living with their work so they are really vulnerable. We have to make local feeds available and provide to farmers a technical support in order to increase efficiency.”

BILLEL HADJAL, Project Manager

ACKNOWLEDGEMENT:

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APPENDIX

EXAMPLE OF FEED RATION VALORIZING LOCAL BYPRODUCTS:

FEED RATION 3	
For a cow which produces : 15 KG/Day of milk	
FEED	KG DM per day
 Tomatoes pulp	4.8 KG
Maize silage	6 KG
Oat hay	1.8 KG
Concentrate feed	1.8 KG

Cost: **472 DZD/KG**

MULTINUTRITIONNAL BLOCK (under test):

Feed Components	Formulations (%)		
	1	2	3
Urea	3	2	5
Molases (cement)	10	10	10
Wheat bran	20	15	
Shredded cereal straw		15	25
Olive pomace	20	15	
Cactus fruit	30	30	
Tomatoes pulp			45
Quicklime	10	10	10
Salt	5	2	3
CMV	2	1	2

Cost: **56 DZD/KG**

**TO BE CHECKED: INPUTS CONFORMITY
WITH DANONE STANDARDS**