

LIFE Low Carbon Feed - Climate Change Mitigation through an innovative goat feed based on agricultural waste recycling

LIFE16 CCM/ES/000088



Sustainability Plan (Business Plan, Environmental Plan and Social Plan) from LCFEED with Viability greater than 20% of the IRR

Responsible partner/s:	La Unió de Llauradors i Ramaders
Deliverable*:	Action C.4.

Development:

LCFeed's Business Plan contemplates the viability of a complete feed for ruminants based on citrus and rice straw.

The citrus and rice producing cooperatives are those that, based on their by-products, would be the most suitable for the manufacture of LCFeed feed, appropriating the added value of the product.

The manufacture of this feed represents the culmination of a process that should begin with the manufacture and commercialization of the ingredient LCCitrus. After 4 or 5 years, once the commercialization of LCCitrus is consolidated and the investment in the manufacture of that ingredient is amortized, the manufacture of LCFeed would begin for which an additional investment of €188,000 would be required.

The clients to whom the production of LCFeed would be directed would be feed distributors and cooperatives or associations of farmers, since they service of supplying feed to their associates.

The investment required to place this product on the market does not represent an entrance barrier. Due to the fact that it will be an agri-food cooperative that way already be in the market producing LCCitrus, the investment would mean less than €200,000. Starting from scratch, the investment for that same cooperative would reach €688,000.

The estimated production is 7,442 tons/year, making the business profitable. From there and considering the size of the market and the foreseeable territorial projection, and increase in sales/turnover is considered possible, which could exceed 10%.

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Results obtained:

INVESTMENT		FINANCE	
Installation investment	688.502,22 €	12 Month-Euribor	1,00%
Additional investment		Differential	1,50%
Total investment	688.502,22 €	Interes Rate	2,50%
Recoverable VAT (21%)	144.585,47 €	Loan term	7
Own funds (%)	0,00%	Vesting period (years)	1
Own funds (€)	0,00 €	Fee opening (%)	0,50%
Amount of financing	688.502,22 €	Fee opening (€)	3.443 €
Tax depretiation (years)	18	Instalment of the loan	108.436 €

ILLUSTRATION 1. INVESTMENT AND FINANCE TABLES

A 10-year projection has carried out, taking into account a prudent increase in the cost of raw materials, sales and operating expenses of 1%.

YEAR	TOTAL SALE	INSTALMENT OF THE LOAN	OPERATING EXPENSES	CASH-FLOW	CASH-FLOW AMOUNT	PAYBACK
0				-776.264,23 €		
1	2.052.093,02 €	17.212,56 €	1.804.970,41 €	226.467,55 €	226.467,55 €	-549.796,68 €
2	2.072.613,95 €	108.435,95 €	1.823.020,11 €	141.157,89 €	367.625,44 €	-408.638,79 €
3	2.093.340,09 €	108.435,95 €	1.841.250,31 €	143.653,83 €	511.279,27 €	-264.984,96 €
4	2.114.273,49 €	108.435,95 €	1.859.662,82 €	146.174,73 €	657.453,99 €	-118.810,24 €
5	2.135.416,23 €	108.435,95 €	1.878.259,44 €	148.720,83 €	806.174,82 €	29.910,60 €
6	2.156.770,39 €	108.435,95 €	1.897.042,04 €	151.292,40 €	957.467,22 €	181.203,00 €
7	2.178.338,10 €	108.435,95 €	1.916.012,46 €	153.889,68 €	1.111.356,91 €	335.092,68 €
8	2.200.121,48 €	108.435,95 €	1.935.172,58 €	156.512,94 €	1.267.869,85 €	491.605,62 €
9	2.222.122,69 €	0,00 €	1.954.524,31 €	267.598,38 €	1.535.468,23 €	759.204,00 €
10	2.244.343,92 €	0,00 €	1.974.069,55 €	270.274,37 €	1.805.742,59 €	1.029.478,37 €

ILLUSTRATION 2. IRR AND PAY-BACK CALCULATION TABLE

The Internal Rate of Return (IRR) stands at 23.42% and in the first 4 years the investment would be amortized, generating the total investment, from scratch, without economies of scale from the reuse of existing machinery and facilities or related investments.

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*Available on this website.

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Development:

LCFeed product business plan.

It is an environmentally sustainable product, a complementary feed for lactating goats, capable of reducing methane (CH₄) emissions in ruminant digestion compared to traditional feed. It differs from other commercial formulas by including pruning remains of the citrus crops of the Valencian Community and rice straw rich in fiber with high digestibility and moderate content of protein. This food is prepared at a low temperature to maintain its characteristics and is always supplied accompanied by quality fodder and water.

The target customers for this product are feed distribution companies. Its nutritional quality and its differentiation in the market ensure its contribution to the fight against climate change at a reasonable price.

Its manufacture and commercialization are not expected to start until 4 or 5 years from now once the commercialization of the LCCitrus product is consolidated.

The objective of the Social Improvement Plan is to promote a positive relationship between the company and the public/community in general. For this, actions that can strengthen the relationships of the company with the territory where the production plant would be located are analyzed and determined, in addition to enhancing the image of the company as "fair" and "transparent" through the empowerment and visibility of activities.

The Environmental Plan aims to serve as a management guide for environmental aspects, improving the efficiency of the company and defining how to achieve a reduction in greenhouse gases. It also seeks to highlight the existing opportunities to improve the company's image through a comprehensive green policy.

The Environmental Plan Assessment System has been defined which verifies each year the reduction of greenhouse gases in all company processes through the use of the carbon footprint calculation and life cycle analysis.

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Results obtained:

Tests carried out at Universidad Politécnica de Valencia have shown that this feed reduces methane emissions between 12 and 18%. At the same time, as its main components are pruning citrus leaves and rice straw, added value is given to those residues that are currently burned (mostly) in the fields, thus avoiding, for the second time, the emission of greenhouse gases (in this case CO₂)

It has been evaluated both by the UPV as well as farmers and manufacturers for its palatability, digestibility and potential price, its main ingredients being citrus leaves (up to 30%), rice straw (up to 19%) and barely.

CÓDIGO	INGREDIENTES	SOLUCIÓN	KG. ACUM.	PRECIO
62203	MR HOJA CITRICOS	30,000	300,000	120,000
62174	MR GUISANTE 22/11 PIENSUR	20,000	200,000	233,000
T0012	PAJA DE ARROZ	19,000	190,000	90,000
S0112	HABAS	19,000	190,000	261,400
00000	MR CEBADA NANTA GRIÑON	5,000	50,000	185,500
62151	MR MAGNAPAC PIENSUR	3,000	30,000	591,300
62158	MR MELAZA REMOLACHA NANTA GRI	2,000	20,000	196,800
S0201	CARBONATO CÁLCICO	1,000	10,000	29,000
S0203	SAL	0,350	3,500	88,000
S0202	FOSFATO BICÁLCICO	0,350	3,500	526,000
N7019	SMIX MAC.OVEJA/CABRA 3	0,300	3,000	3.450,000
		100,000	1.000,000	

ILLUSTRATION 3. LCFEED FORMULA

DIAGRAMA DE FLUJO DEL PROCESO DE PRODUCCIÓN DE PIENSO LOWCARBONFEED

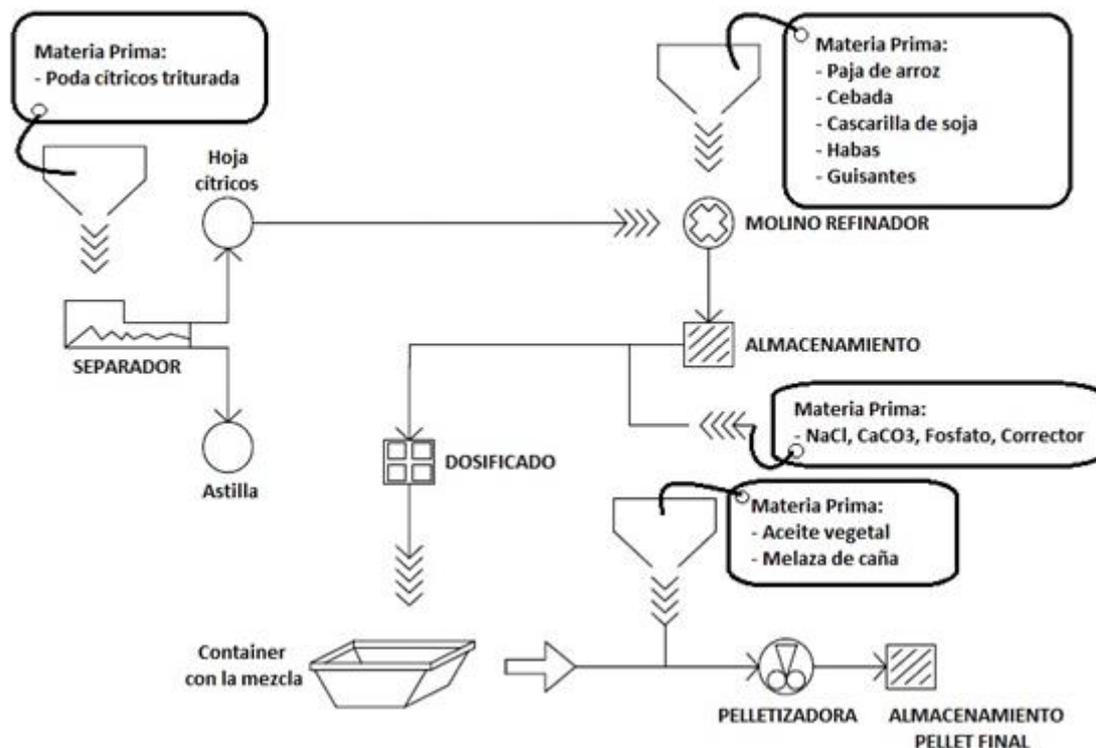


ILLUSTRATION 4. LCFEED PRODUCTION PROCESS FLOW CHART