We have 1001 reasons to invest in sorghum

Thierry LECAT

Western Europe Business Manager
ADVANTA seeds

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SWOT ANALYSIS

SWOT ANALYSIS: Strengths

Sustainable crop

- C4 plant: decarbonation tool
- Tolerance to dry and hot conditions
- Water efficiency
- Carbone use efficient: High digestibility: methane gas production is reduced
- Low input crop

Superfood

- High crude proteins content: 9%+
- Intermediate glycemic and rich in antioxidants
- Better digestibility (energy) for poultry with shorter gastro… tract
- Amino acid profile of sorghum compares favourably to corn and is close to the amino acid profile of soybean meal

Non GM crop

Lower **mycotoxins** risk for pig production proved in some countries such as Hungary (country with lot of risks // in 2022 and 2024 Sorghum high price because lower mycotoxin risks)

Main positive points

- Protein content > corn
- Phytase activity higher in Sorghum than in Maize (increases digestibility of Phosphorus and improve digestibility of amino acids)
- Fats in sorghum contain less unsaturated fat. Sorghum also has less linoleic acid and polyunsaturated fatty acid. A lower linoleic acid content allows quality of pork fat if processed
- Good digestibility of nutrients
- Absence of anti-nutritional factors (EU sorghum)
- An AA profile similar to corn or slightly higher depending on the grinding
- Lower mycotoxin risk

TABLE 1. TYPICAL NUTRIENT COMPOSITION (AS-FED)[1]

	SORGHUM	CORN
DRY MATTER, %	89.4	88.3
NET ENERGY, KCAL/LB[2]	1,186	1,202
CRUDE PROTEIN, %	9.4	8.2
CALCIUM, %	0.02	0.02
PHOSPHOROUS, %	0.27	0.26
DIGESTIBLE PHOSPHOROUS, %	0.108	0.088
CRUDE FAT, %	3.4	3.5
CRUDE FIBER, %	2.1	2.0
NDF, %	10.6	9.11
ADF, %	4.9	2.9
LINOLEIC ACID, %[3]	47.3	55.8
SATURATED FATTY ACIDS, %[3]	19.1	17.9
MONOUNSATURATED FATTY ACIDS, %[3]	29.5	23.8
POLYUNSATURATED FATTY ACIDS, %[3]	50.2	57.5

[1]Values are derived from NRC. 2012. Nutrient Requirements of Swine. 11th rev. ed. Natl. Acad. Press, Washington, D.C., unless otherwise indicated.
[2]INRA. 2014. EvaPig. EvaPig® was created, designed and developed by Jean Noblet (INRA, UMR SENAH), Alain Valancogne (INRA, UMR SENAH), Gilles Tran (AFZ) and AJINOMOTO EUROLYSINE S.A.S.
[3]Derived from Sotak et al. 2015.

https://www.sorghumcheckoff.com/wp-content/uploads/2021/11/2019_10_01_SwineFeedingGuide_NewLogo.pdf

SWOT ANALYSIS: Weaknesses

- **No xanthophylls pigments** vs corn
  (but exist natural pigments used by some partners for Laying Hem production)
- **Lysine** content : be careful between myth and reality…
- Low knowledge of real performance by processors
- Low knowledge by farmers and low motivation by traders and storage agencies
- Genetic performance not enhance at same level than corn

➔ **Fakes or myths information about quality & uses**

Myth or not

- **Sorghum has less energy than corn**
  Grain sorghum can completely replace all the corn, wheat or barley in all swine diets as the primary energy source.
  A net energy value of 99 % that of corn (INRA, 2014)
- **Tannin**
  Old varieties of grain sorghum contained relatively high amounts of an anti-nutritional compound called tannin.
  Now new genetics are with lower tannin contents: < 0,3% and an average at 0,21%
- **Very low lysine content**
  Not so low: just 12-15% less than corn…
- **Non GM:** Sorghum is not just a Non-GM and gluten-free grain for pets, it's also very nutritious. It's comparable to corn with higher protein and slightly lower fat content.
  Plus it's easier to digest when compared to other grains

https://www.sorghumcheckoff.com/wp-content/uploads/2021/11/2019_10_01_SwineFeedingGuide_NewLogo.pdf

https://www.sorghumcheckoff.com/wp-content/uploads/2021/11/2015_11_19_Goodband_NurseryPigs-1.pdf

https://www.sorghumcheckoff.com/wp-content/uploads/2021/11/2018_04_26_PoultryFeedingGuide_New-Logo.pdf

SWOT ANALYSIS: Opportunities

- Climate change and good societal image

  Low inputs,

  80% of European lands without irrigation system,

  organic, …
- Quality and interests of sorghum in different outlets

  Feed, Food & Bioenergy…
- Herbicid Tolerant Varieties (HTV) development (free Gmo)
- Diabrotica development (close to 40% of European lands contaminated) and diversification of crop rotation
- Nematod resistance
- Increase of Public Research program in EU (as in France with Inrae/Cirad + breeders (NitroSorg for proteins digestibility)… but also in Romania about sorghum studies for poultry and pig performances….

SWOT ANALYSIS: Threats

- **Availability**

- Ignorance about sorghum grain
  - low tannin
  - A perennial crop (panicles at maturity, leaves stayed green)

- No official commodity price: Negative arbitral index in Corn comparison, lower visibility by transformers & farmers

- Not enough competition in Europe as Corteva, Bayer etc… with strong Marketing

- Europe considered by USA and Australia as a clearing volume for sorghum

- Political troubles in Europe (Example Ukraine 70% sorghum surfaces on Eastern of country, conflict location) and World