

Fiber Sorghum harvesting - Demo-day of the mechanization available in the market

Sorbara (Modena, Italy), 14th September 2017

The main goal of AGROinLOG is the demonstration of Integrated Biomass Logistics Centres (IBLC) for food and non-food products, evaluating their technical, environmental and economic feasibility.

An IBLC is defined as a business strategy for agro-industries to take advantage of unexploited synergies in terms of facilities, equipment and staff capacities, to diversify regular activity both on the input (food, feed and biomass feedstock) and output side (food, feed, biocommodities & intermediate biobased feedstocks) thereby enhancing the strength of agro-industries and increasing the added value delivered by those companies.

As part of AGROinLOG project, demonstrations of innovative harvesting machinery will be performed in order to make stakeholders know about it, discuss about the feasibility and understand potential uses of the products.

In that sense AGROinLOG would like to invite you to the demonstration of Cressoni and Nobili machineries to show the process of conditioning, shredding and baling of Fiber sorghum used by COPROB group.

The COPROB group has undertaken a productive strategy towards the energy production from biomass. In the last few years, three biogas power plants of 0,99 MWe each were built by COPROB group, fed with residues from their own sugar beet production. Additionally, in collaboration with Enel Green Power, COPROB currently runs a combustion power plant of 12,5 MWe fed with herbaceous lignocellulosic biomass (straw, Fiber sorghum, etc.).

In recent decades, Fiber sorghum (*Sorghum bicolor* L. Moench.) has become one of the most interesting species for the production of lignocellulosic biomass aimed at the production of heat, electricity, and second generation biofuels. Due to the considerable amount of biomass produced [60 t/ha at 70% moisture content (w-% ar)], harvesting presents several drawbacks that weigh on the supply chain.

In Italy, two approaches are currently applied for harvesting Fiber sorghum: (1) the direct chopping of fresh product by means of a self-propelled forage harvester or (2) the harvesting of dried biomass after the conditioning and windrowing.

The harvesting of fresh product, although technically feasible, makes the whole value chain economically constrained to transport distances. The process of field drying is therefore used to overcome these limitations through two different type of work chains:

- Conditioning, windrowing, and baling or harvesting with self-loading trailer;
- Shredding, windrowing, and baling or harvesting with self-loading trailer.



In the course of the demo day, the mower conditioner Cressoni and the shredder Nobili mod. WS 320 BIO will be showed during Sorghum harvesting, followed by the baling process with a regular straw baler.



Figure 1 – Cressoni header



Figure 2 – Nobili shredder

The demo-day has been organized by CREA with the support of COPROB and the collaboration of CIRCE.

AGENDA			
September, 14th 2017 – Sorbara (Modena, Italy)			
Item	Time	Subject	Speaker
1	09:00 h	Presentation of AGROinLOG project	Dr. Fernando Sebastian, Coordinator of the EU project Agroinlog AGROinLOG CIRCE (Spain)
2	09:20 h	Technologies for Fiber sorghum conditioning, shredding and baling	Dr. Luigi Pari, Research leader CREA (Italy)
3	09:40 h	COPROB Cooperativa Produttori Bieticoli	Dr. Giampaolo Tommasi COPROB (Italy)
4	10:00 h	Coffee break	
5	10:30 h	Fiber sorghum conditioning demonstration <ul style="list-style-type: none"> - Conditioning (Cressoni header) - Shredding (Nobili WS 320 BIO) - Baling 	Cressoni and Nobili technologies on-field demonstration
6	12:00 h	End of the demo-day	

