1ST EUROPEAN SORGHUM CONGRESS

WORKSHOP

DYNAMISM IN INTERNATIONAL SORGHUM TRADE

THE SPECIFICS OF SORGHUM GRAIN IN ITALY

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BUCHAREST
3-4 NOVEMBER 2016

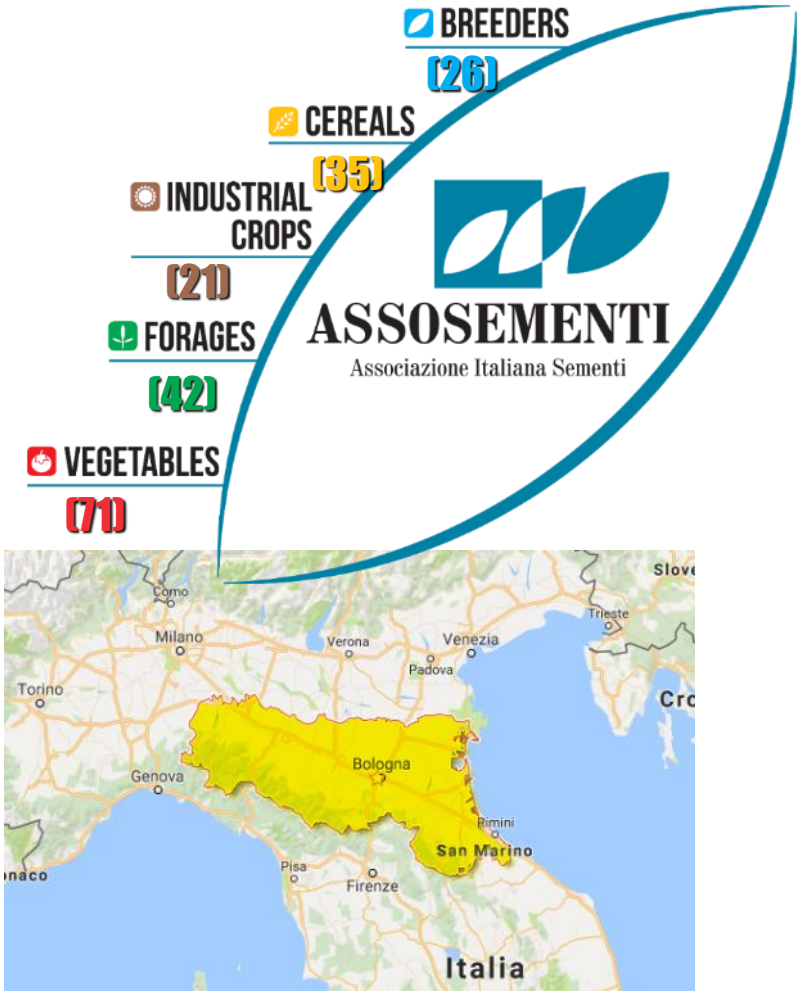
ASSOSEMENTI STRUCTURE

The history of Assosementi

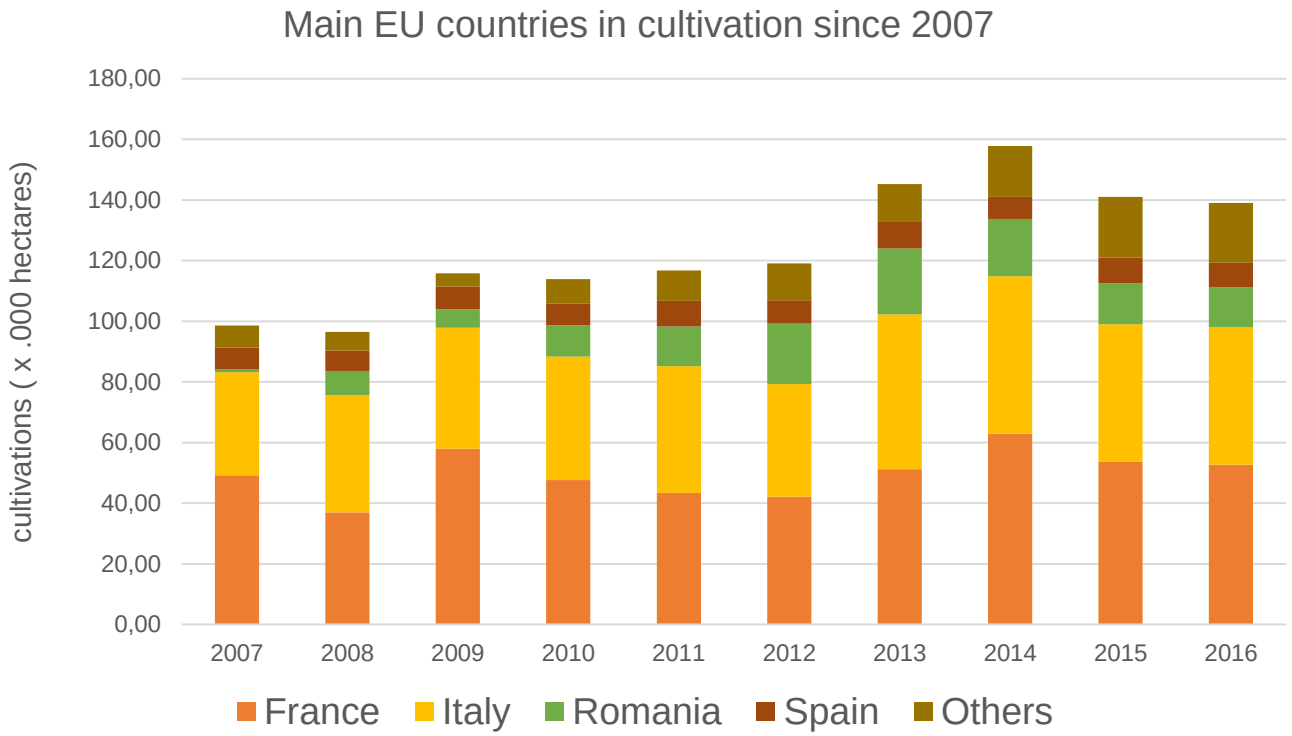
1946	Foundation of “Italian Seed Trade Association” (AISS)
mid '90s	the acronym was changed in AIS (“Associazione Italiana Sementi”)
2010	merging of AIS with Assoseme (Italian Breeders’ Association), AIS became "Assosementi"
2011	Assosementi acquired the status of legal entity under the Italian law

Assosementi headquarter

Assosementi’s headquarters has always been in *Bologna*, chosen due to the importance of Emilia-Romagna Region in seed production.



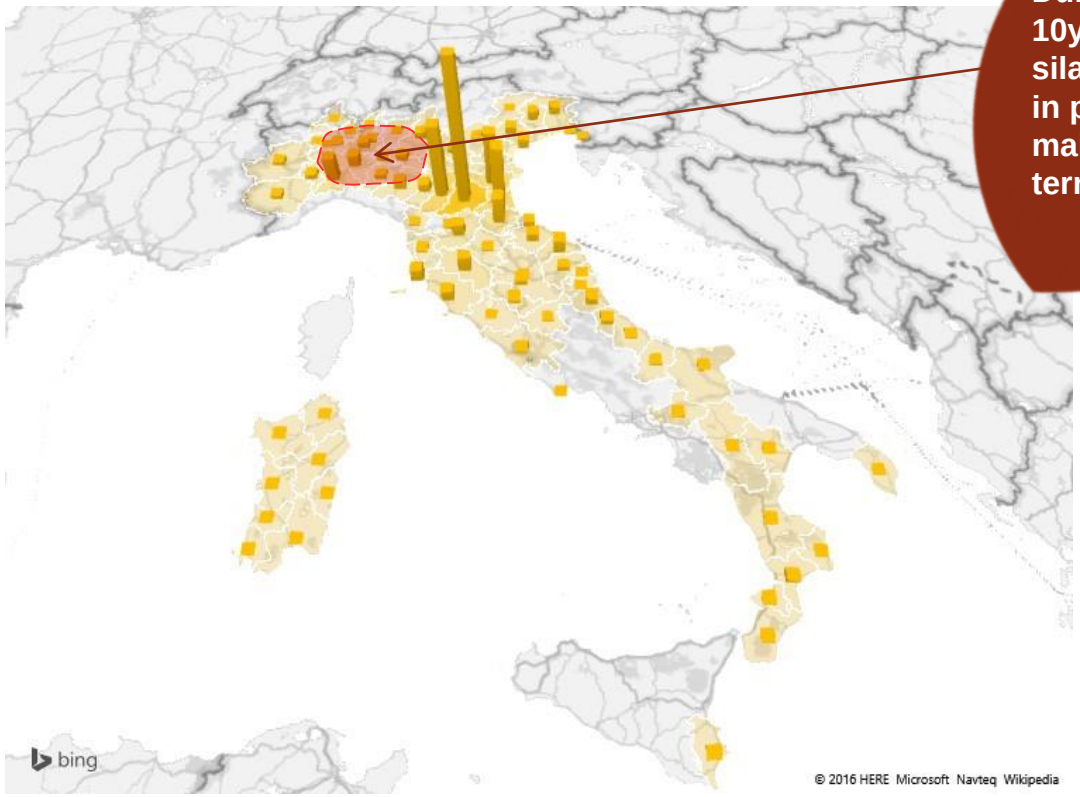
EU SORGHUM CULTIVATIONS (HA)



Source: EUROSTAT - National data

ITALY SORGHUM CULTIVATIONS (2015)

Provinces	Hectares
Bologna	10.123
Modena	5.145
Ravenna	4.250
Ferrara	3.783
Forlì-Cesena	1.940
Alessandria	1.701
Siena	1.094
Livorno	930
Ancona	930
Mantova	840
Pavia	820
Firenze	775
Grosseto	700
Reggio nell'Emilia	650
Venezia	649
Parma	610
Udine	600
Pordenone	600
Rovigo	573
Pesaro e Urbino	560
Teramo	540
Treviso	513
TOTAL	**45.375**



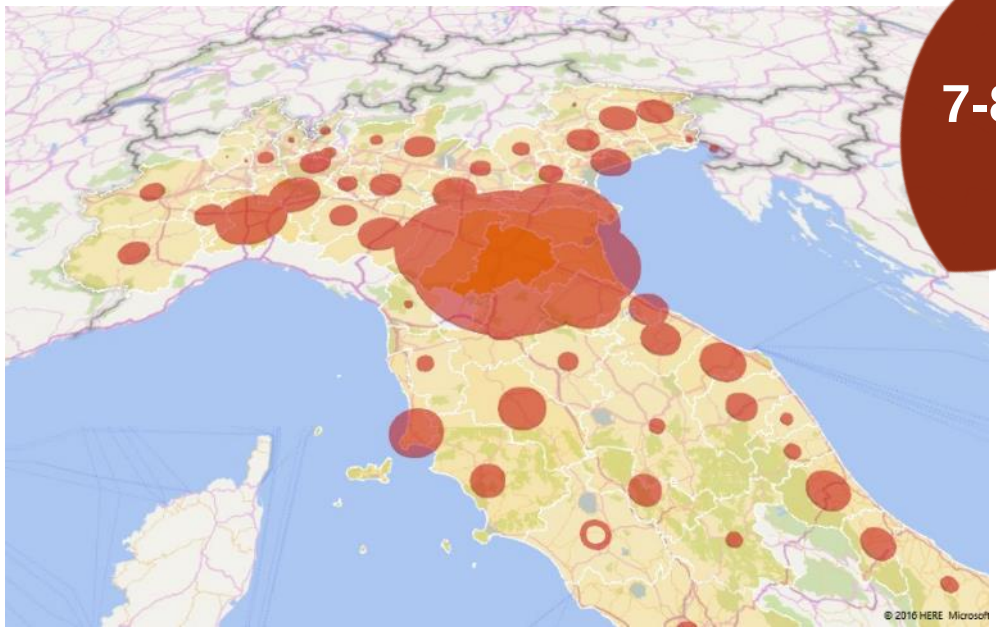
During the last 10y, sorghum silage increased in particular in maize vocated territories

Source: ISTAT - national data (2015)

During the last 10y, sorghum silage increased in particular in maize vocated territories

ITALY SORGHUM PRODUCTIONS

Provinces	Productions (dTon)
Bologna	796.871
Modena	385.875
Ravenna	297.652
Ferrara	313.989
Forlì-Cesena	97.000
Alessandria	110.557
Siena	34.150
Livorno	41.500
Ancona	33.330
Mantova	46.200
Pavia	59.500
Firenze	22.150
Grosseto	16.100
Reggio nell'Emilia	44.500
Venezia	42.834
Parma	42.350
Udine	42.600
Pordenone	42.600
Rovigo	44.694
TOTAL	**2.957.614**

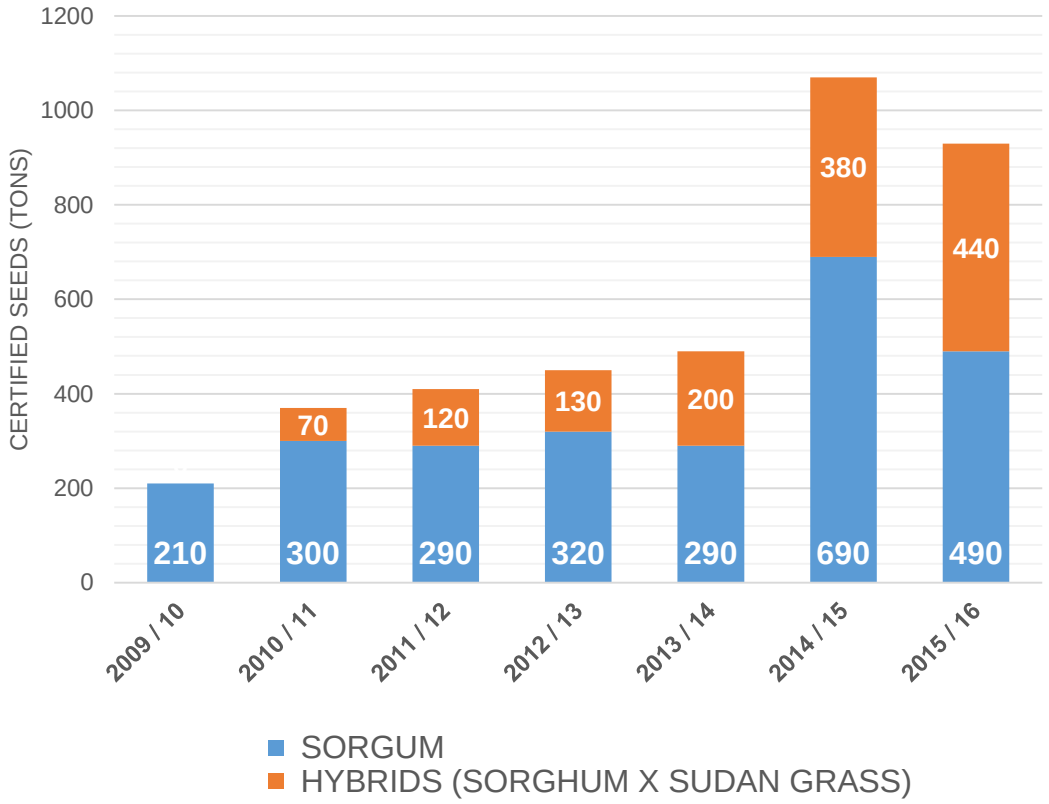


7-8 T/ha

- **Average yield** (grain): 7-8 Tons per hectare and up !
- Productive cycle: 100 to 110 days.
- Suggested investion: 35-40 plants/m^2 (grain) and 40-45 plants/m^2 (silage)

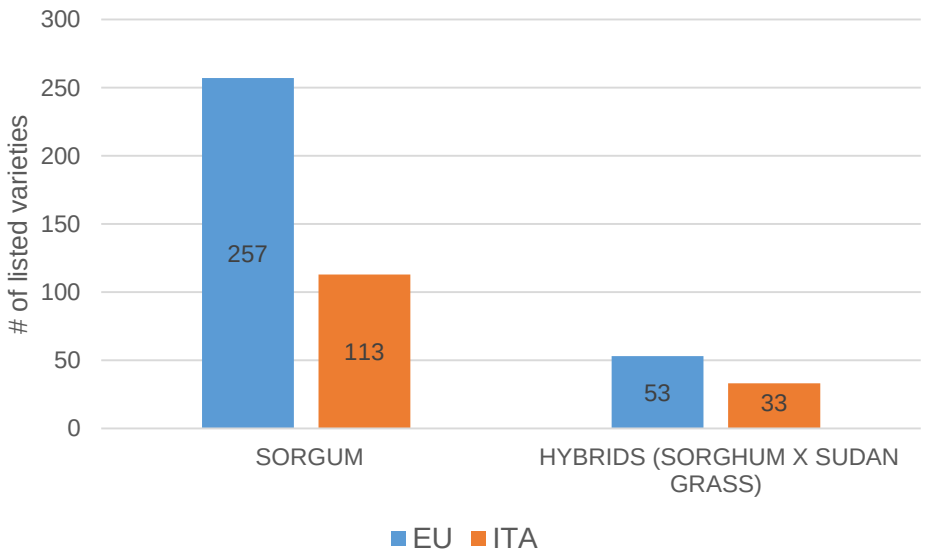
Source: ISTAT - national data (2015)

SEED PRODUCTION



Source: CREA-SCS, official seed certification body

REGISTRY LISTING



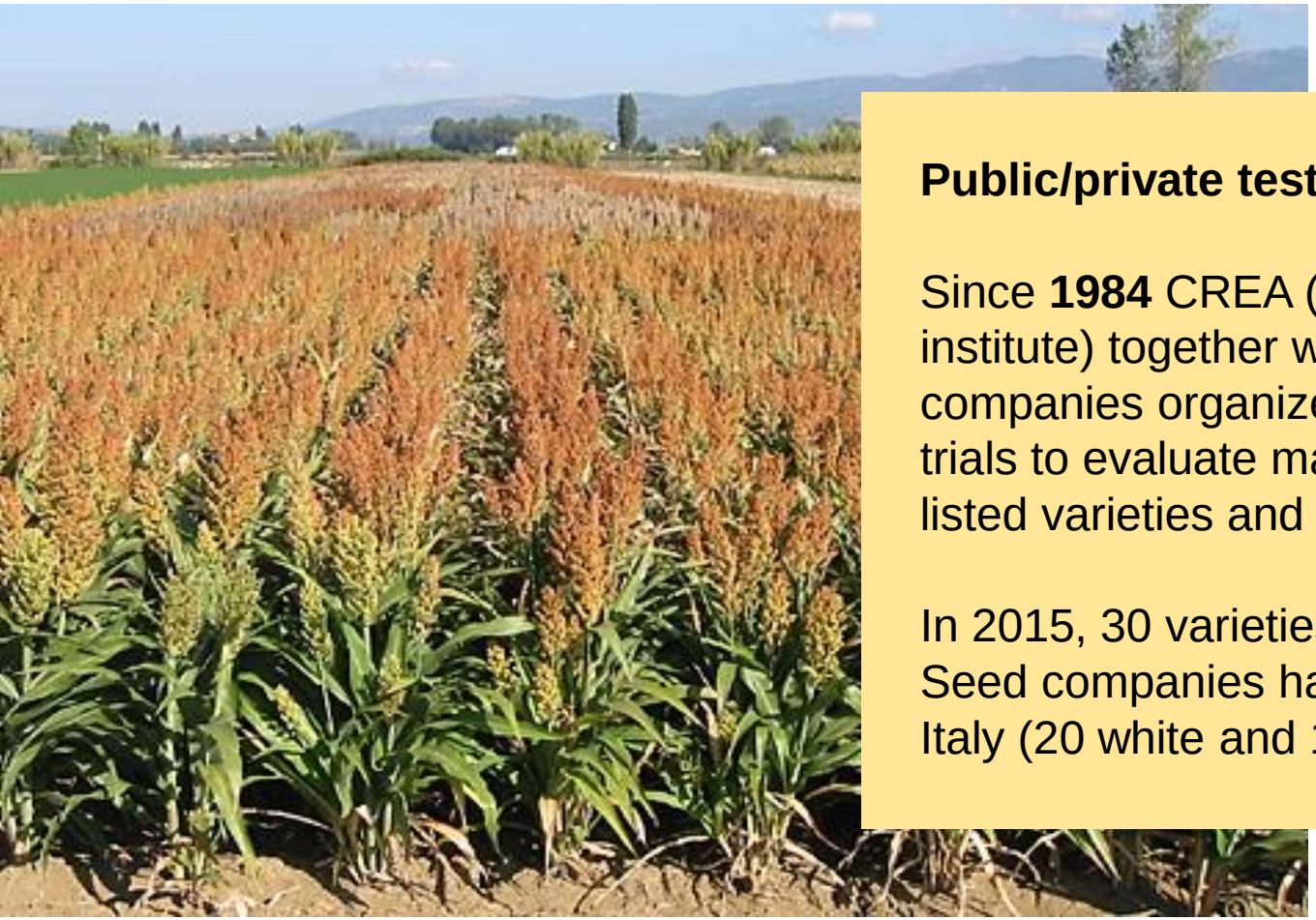
Source: MIPAAF (Ministry of Agricolture) and EU database

For both varieties and hybrids, Italy became an important country for listing and testing new materials.

In Italy, since 2013 an entirely new listing protocol for sorghum is in place. In addition to traditional criteria (grain and forage), new uses have been foreseen for both varieties and hybrids:

- *Mono and multi-mow forage*
- *Biomass for:*
  - *direct O2 combustion*
  - *ethanol production*
  - *biogas production*

NATIONAL TRIALS

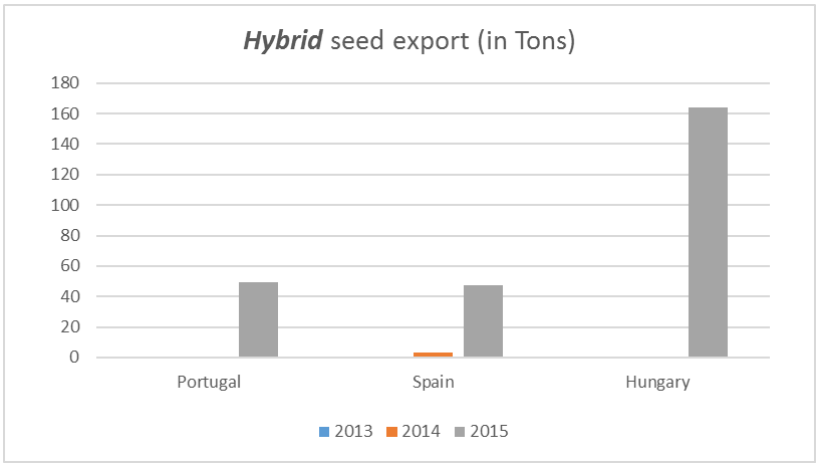


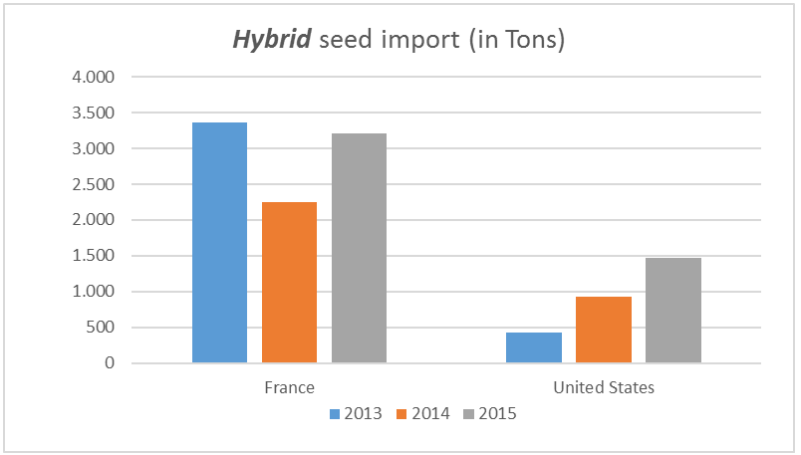
Public/private testing network

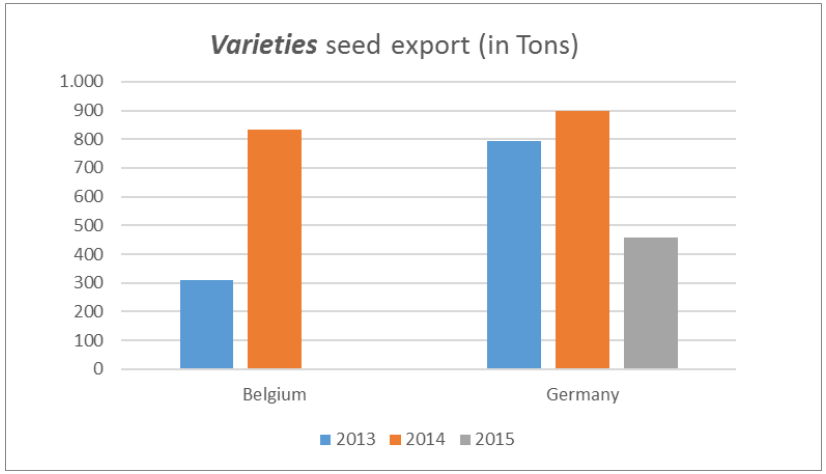
Since **1984** CREA (public research institute) together with private seed companies organize national field trials to evaluate marketed and neo-listed varieties and hybrids.

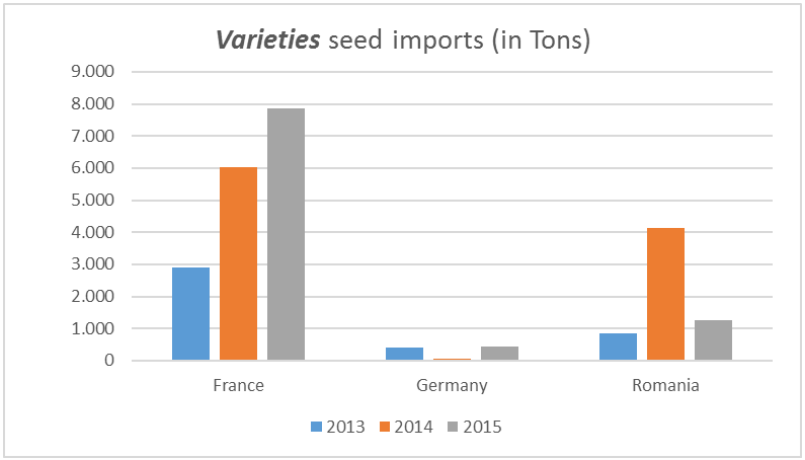
In 2015, 30 varieties submitted by 7 Seed companies have been tested in Italy (20 white and 10 red sorghum)

ITALY IMPORT & EXPORT (SEEDS)



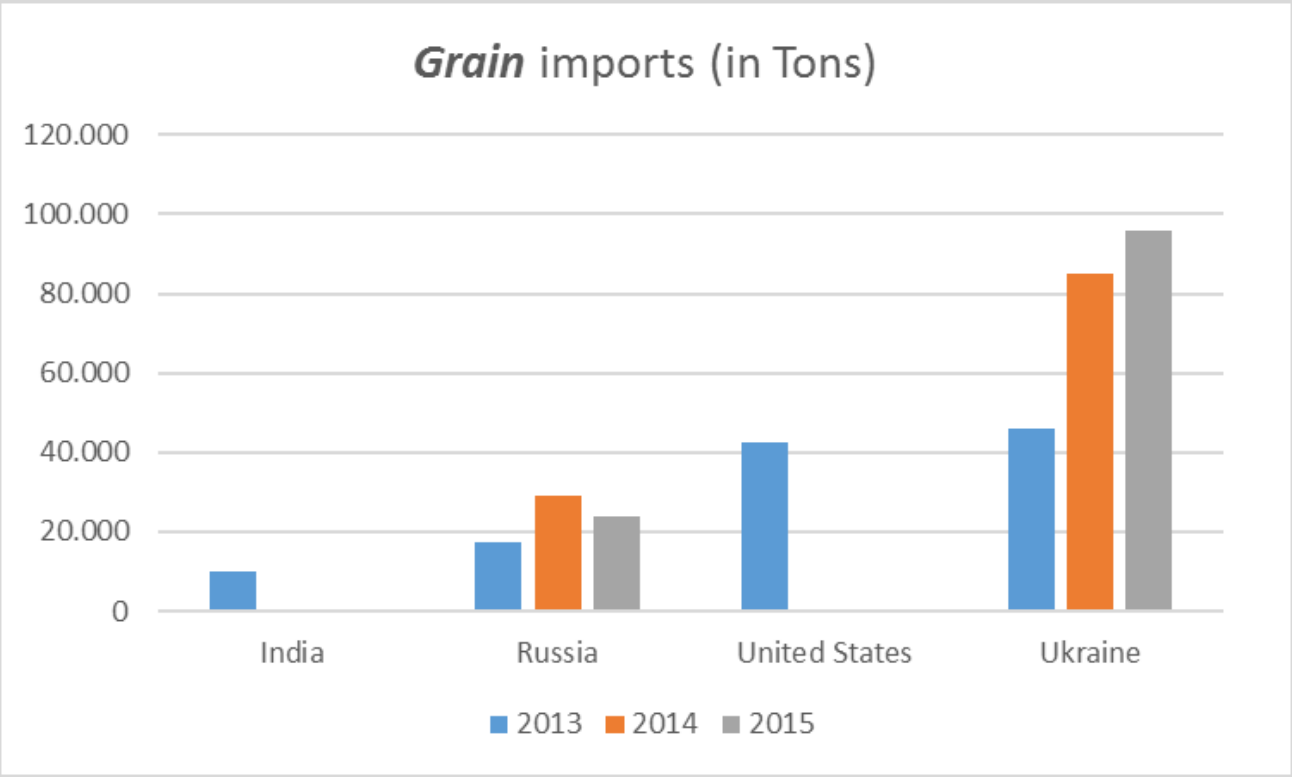






Source: ISTAT

ITALY IMPORT & EXPORT (GRAIN)



Source: ISTAT

OPPORTUNITIES – COSTS & REVENUES

Sorghum price (5y)

Maize price (5y)

Data and prices: www.borse.it website

The "balance point" between costs and revenues is about 125 dT for maize and 77 dT for sorghum (*)

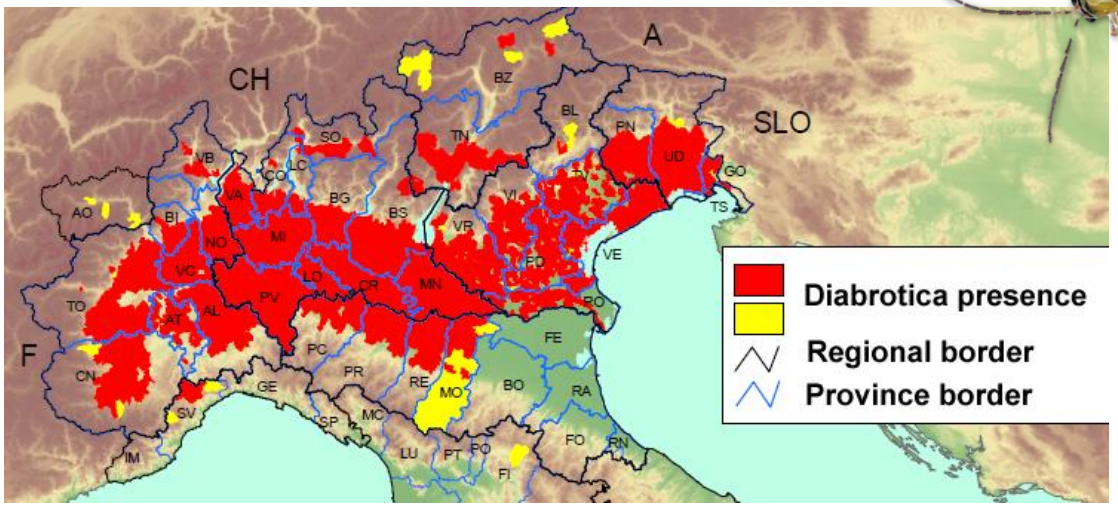
In general, costs per hectare are about 200-300 € lower than maize.

Compared to corn, quotations remain interesting!

(*) – Bologna Faculty of Agricolture Study (2010).

OPPORTUNITIES – PESTS

Non susceptible to **Diabrotica**



- **Since a decade, diabrotica has been established in northern Italy. Regular maize damages were reported.**
- **In sorghum to corn succession with high pressure from diabrotica virgifera, no concrete damage and presence of rootworm have been found.**
- **It can be sown from late April.**

Source: Regional phytosanitary Services enquiry (2010)

OPPORTUNITIES – AGRONOMIC ASPECTS

- **Low water input. This crop has limited needs: 150 to 300 mm of water, depending on soil granulometry (heavy/coarse texture)**
- **High °T tolerance. Especially in northern Italy, summers are more and more frequently characterized by high temperatures (!) for long periods (!!) . This crop generally performs better than maize in such conditions.**
- **Mycotoxins. Low risk.**
- **Potentially widely adaptive to northern Italy areas as well as in Center and Southern (although in these territories industrial processing chains are missing !)**

Source: Regional phytosanitary Services enquiry (2010)

OPPORTUNITIES – AGRONOMIC ASPECTS

- In general, sorghum competes favorably with corn in poultry, pigs and bovines farming.
- Varieties with low tannin content are a viable alternative to corn integral silage.
- According to data emerged by a study of veterinary faculty of Bologna, sorghum crude protein has been highlighted (9.4% of dry matter compared to 8.1% of the corn).
- Also in terms of starch the content is almost equal to maize (64.1%)
- In terms of energy sorghum shows best values, slightly, than maize in use in farming pigs: 3,900 kcal / kg versus 3,860.

OPPORTUNITIES – ANIMAL NUTRITION

- **Digestibility in many cases equivalent to maize**
  - **PIGS: 90% Sorghum against 91% Maize.**
  - **BOVINES: Nitrogen degradation, 43% S, 39% M**
  - **BOVINES: Starch degradation, equally 60% in S & M.**

THANK YOU !