

Semismma

THE ASSESSMENT
OF THE ECONOMIC
IMPORTANCE OF AZOLES
IN EUROPEAN
AGRICULTURE:
WHEAT CASE STUDY

September 2012

Objectives and methodology

The study evaluates the economic importance of azole active substances in European agriculture

- *What would happen in the EU-27 markets if azoles were not used anymore?*

Methodological approach:

- case study: **wheat**
based on the outcomes of ADAS and Horta agronomic studies
- **balance sheets** and **target indicators** calculation:
 - *demand satisfaction rate*
 - *self sufficiency*
- **scenario analysis**
- **sensitivity analysis**

Objectives and methodology

SCENARIO ANALYSIS: process of analysing possible future events by considering alternative possible outcomes and their implications

"Reference" scenario

estimated on the basis of **current trends** of the main wheat market drivers - yield, area, production, trade balance, consumption:

- in the **SHORT TERM (2013)**
- in the **LONG TERM (2020)**

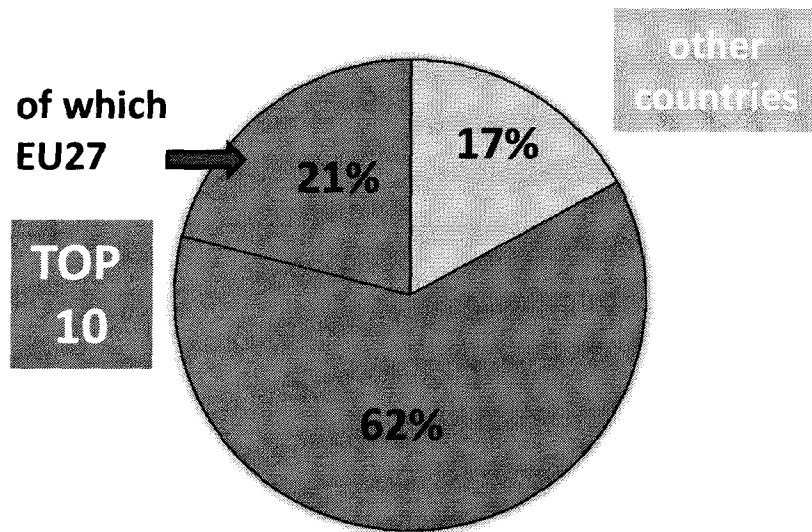
"No azoles" scenarios

estimated supposing that **azoles are not used** any more

- **SHORT TERM** impact assessment (2013): **loss of azoles**
- **LONG TERM** impact assessment (2020): **loss of azoles**
+ fungicides resistance

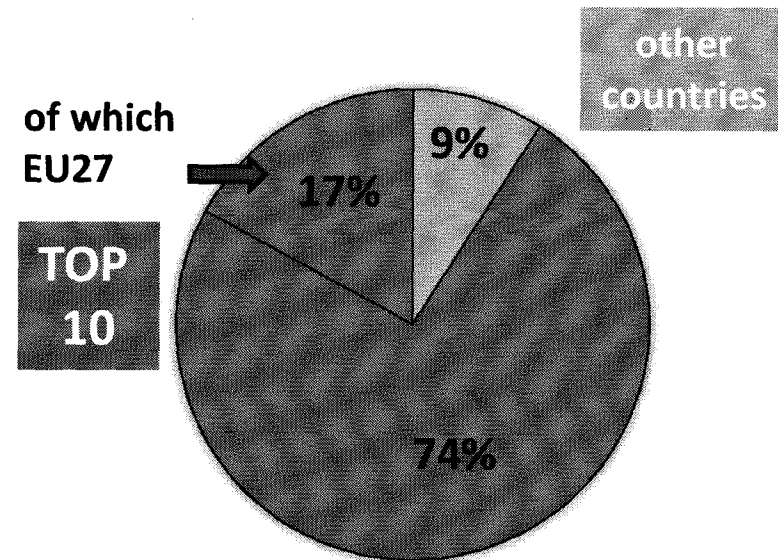
The importance of European wheat (2010)

WORLD PRODUCTION (651.1 million tons)



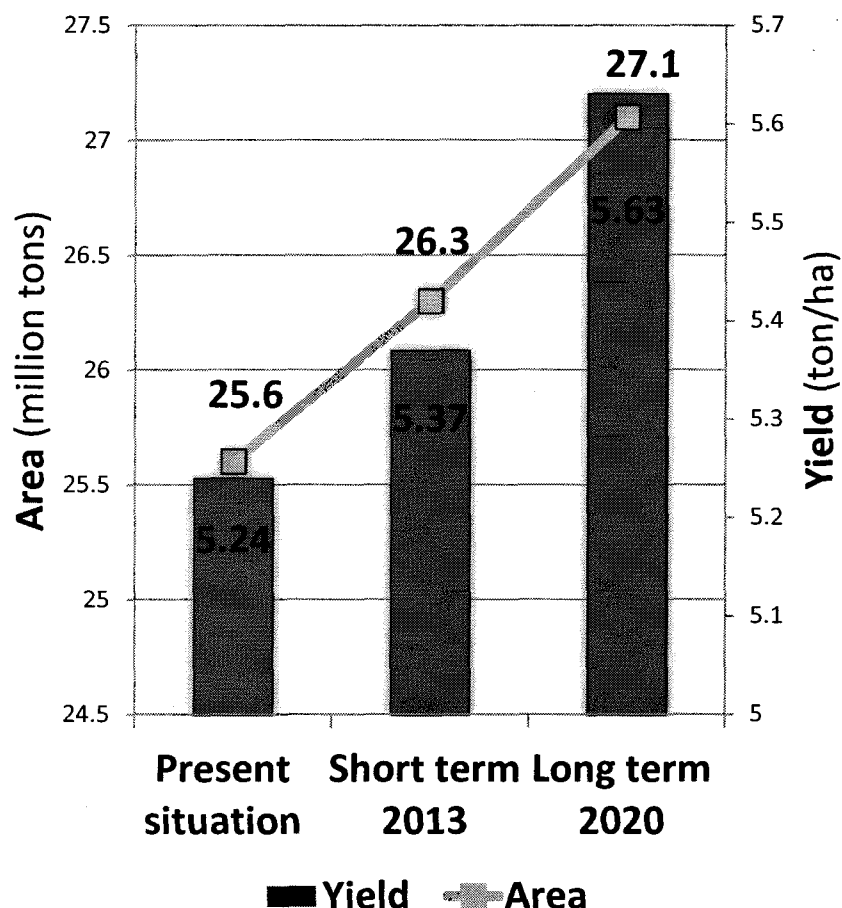
- EU is the **first world wheat producer**
- EU harvested area is not very large:
 - 11.6% of global area
- But it has a **very high productivity**:
 - EU yield: 5.3 (ton/ha)
 - world yield: 2.9 (ton/ha)

WORLD EXPORT (132.9 million tons, 20% of production)



- EU is the **second largest exporter**:
 - 17% of world trade
- **Striking 5 years EU export increase**:
 - EU: +60%
 - world: +15%

REFERENCE SCENARIO: estimated production trends



- The reference scenario is estimated on the basis of current trends of the main market drivers, i.e. including azoles.
- **Area harvested** and yields are expected to increase significantly:
 - area: +2.4% (2013); +5.6% (2020)
 - yield: +2.5% (2013); +7.4% (2020)
- **Wheat production** is estimated to increase accordingly:
 - + 5.0% in the short term (2013)
 - +13.4% in the long term (2020)
- The **EU would maintain its present position in the world market** in terms of:
 - production
 - export
 - self sufficiency

Source: Nomisma elaborations on Eurostat, European Commission and FAO data

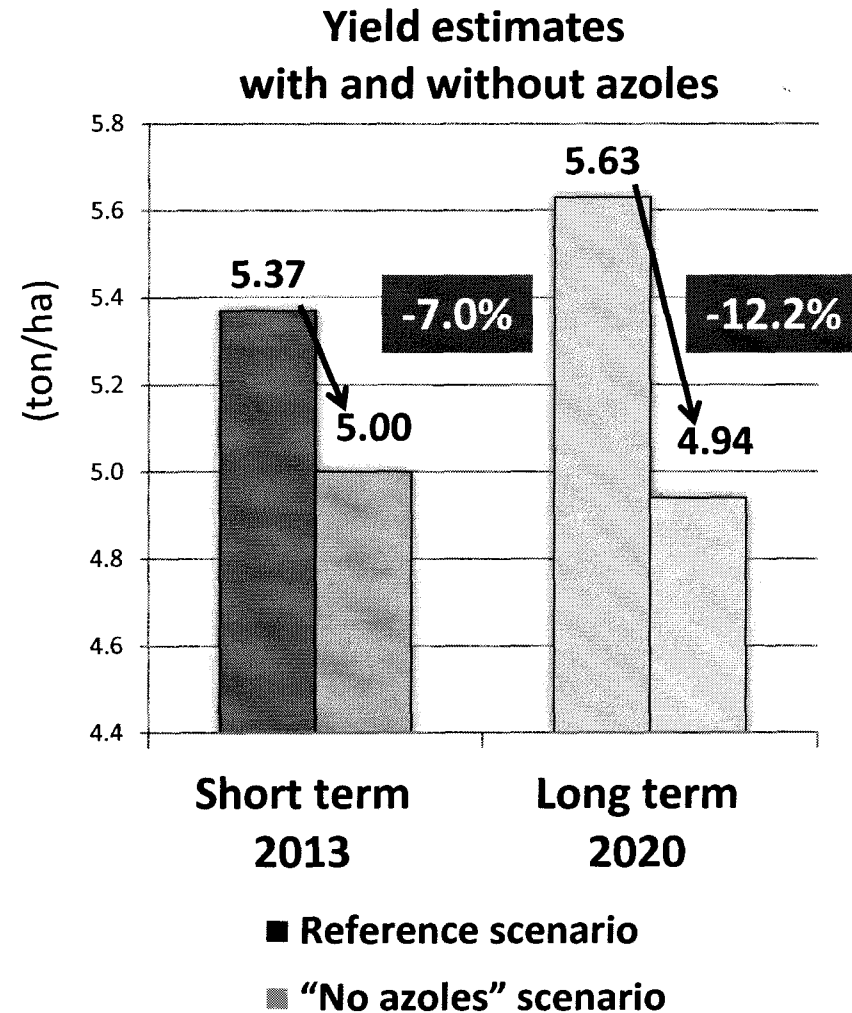
REFERENCE SCENARIO: EU balance sheet (million tons)

	Present situation (avg 2006-10)	Short term (2013)	Long term (2020)
Production (A)	134.4	141.1	152.4
Net trade (B)	10.8	9.1	12.6
Domestic availability (C=A-B) = Internal Demand	123.7	132.0	139.8
Demand satisfaction rate	100.0%	100.0%	100.0%
Self-sufficiency degree (A/C)	108.7%	106.9%	109.0%

Source: Nomisma elaborations on Eurostat, European Commission and FAO data

The azoles contribution to wheat productivity

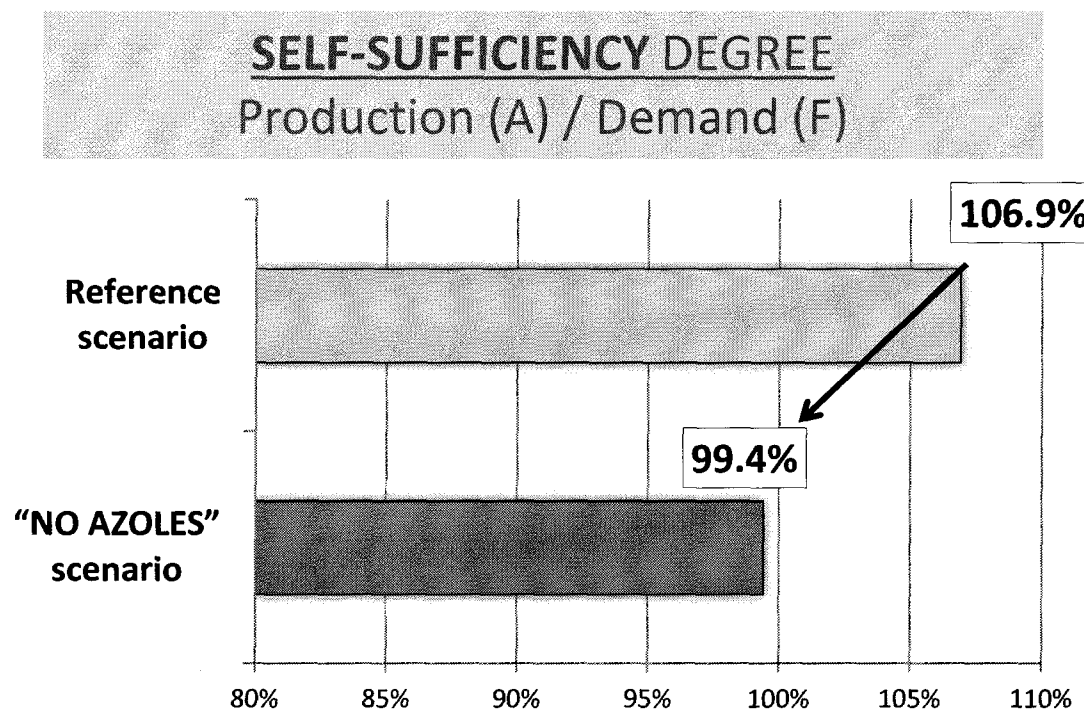
- Recent **agronomic studies** (Blake et al., 2011; Salinari et al., 2011) show that fungicides, and namely azole compounds, contribute substantially to sustain wheat yield
- If azoles are not used, **crop productivity will decrease** due to the following reasons:
 - in the **short term** lower protection efficacy would increase **crop losses** at the field scale;
 - in the **long term** additional crop losses are expected due to the reduced options for managing **fungicide resistance**.



Source: Nomisma elaborations on ADAS and HORTA data

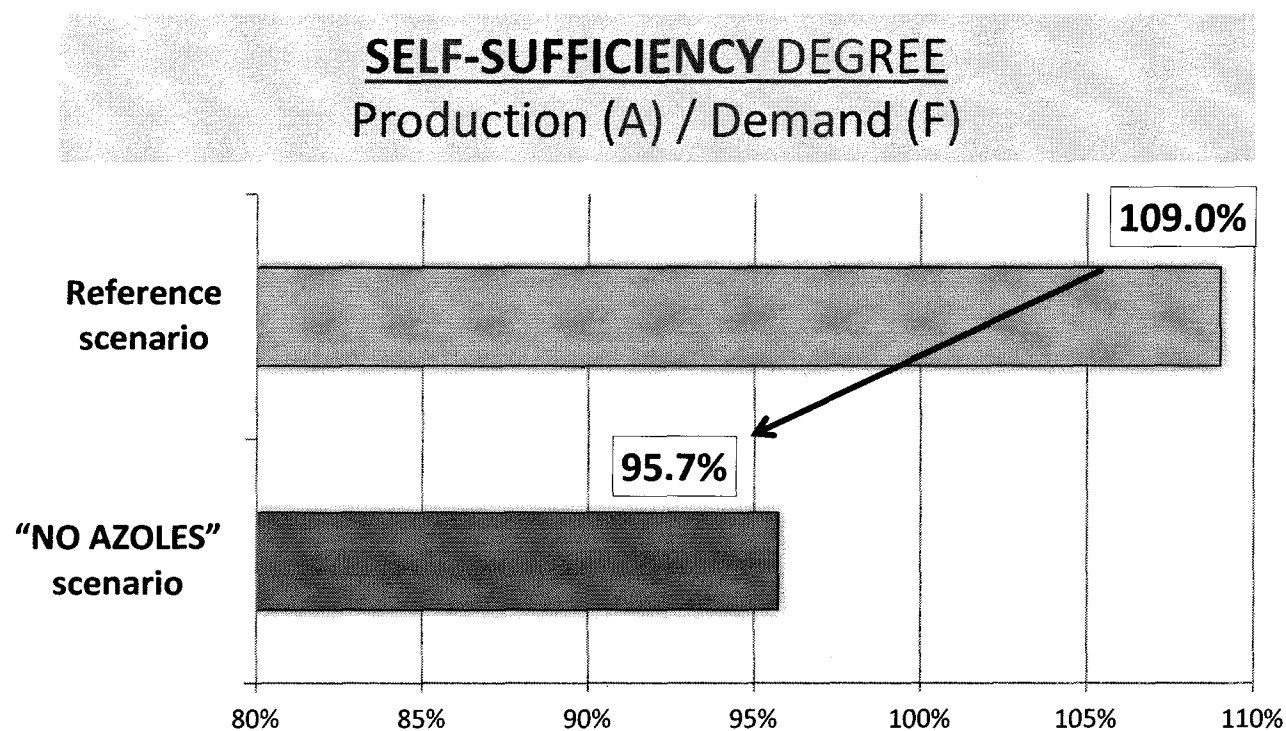
SHORT TERM impact (2013)

BALANCE SHEET 2013 (million tons)	Reference scenario	"No azoles" scenario
Production (A)	141.1	131.3
Domestic demand (F)	132.0	132.0



LONG TERM impact (2020)

BALANCE SHEET 2020 (million tons)	Reference scenario	"No azoles" scenario
Production (A)	152.4	133.8
Domestic demand (F)	139.8	139.8



YIELD impact

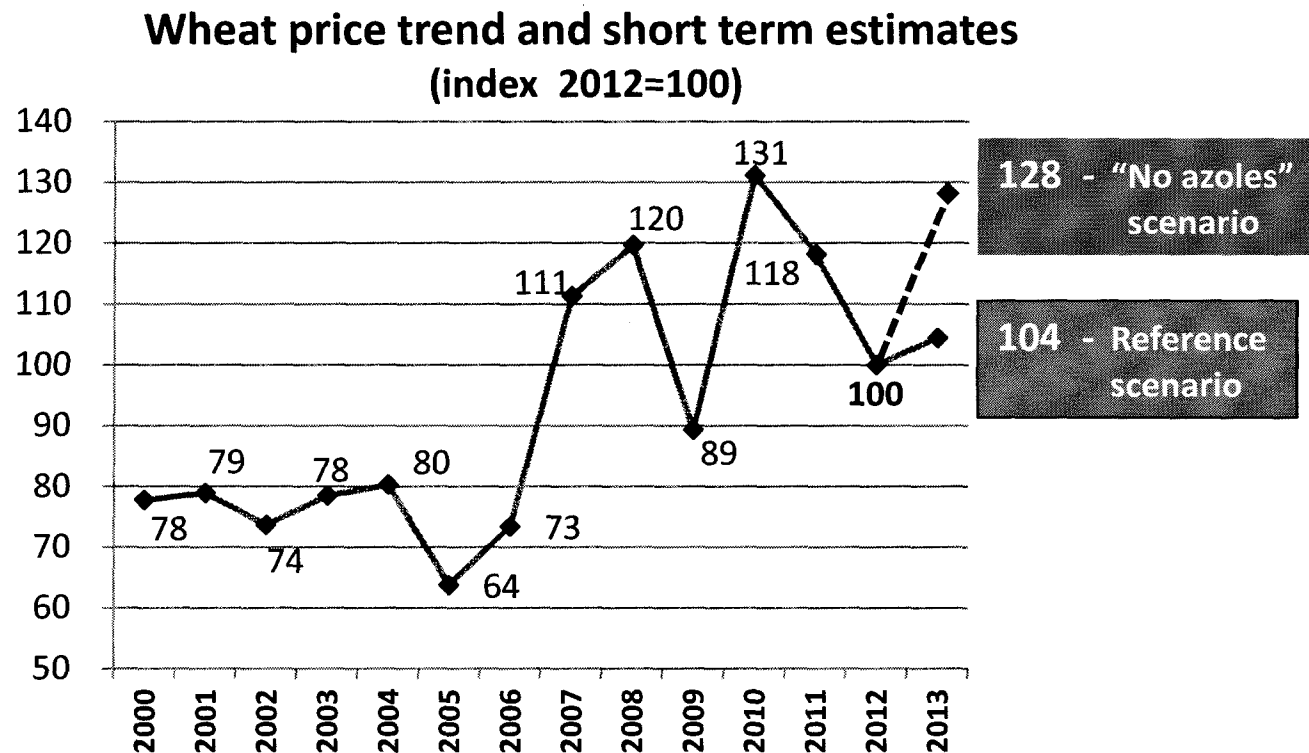
- **Without the availability of azoles, production has been estimated to decrease significantly:**
as compared with the reference scenario:
 - **9.8** million tons in the short term;
 - **18.6** million tons in the long term.

PRICE impact

- **High price levels** and increased price **volatility**
became a major public concern because of their negative effects:
 - ✓ on importing countries and low-income consumers
 - ✓ on decision-making for buyers and sellers
and on producers investment and innovation capability
- **Wheat prices are determined by supply-demand conditions**,
both in the domestic and in the international markets:
 - over a **short time period**, supply shocks strongly affect price levels
 - in the **long run**, they are determined by structural trends that in turn affect
production decisions

PRICE impact in the SHORT TERM

- The short-term **estimated price response to the loss of azoles** is noteworthy:
 - **+28%** as compared to current price (2012)
 - **+23%** as compared to the short term reference scenario (2013)

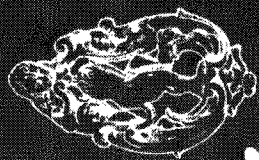


PRICE impact in the LONG TERM

- In the long term, **the main uncertainties relate to which extent agricultural production will be able to meet increasing demand** (both food and non-food)
- In the past, **technological progress** was faster than population and income growth, leading to a long-run relative decline in commodity prices
- **Tight market conditions and price pressures** in recent years due to:
 - strong world population growth
 - restrained yield improvement (technological progress, CAP, etc.)
- **Wheat prices are anticipated to be more volatile than in the past by 2020** and they are projected to average well above the historical mean (about 35% more than the 1990-2012 average).
- As a consequence, **the drop in wheat production ensuing the supposed loss of azoles** is expected to lead to both to:
 - an **increase in price levels**
 - and to **greater price volatility** over time.

Concluding remarks

- ❖ **The economic relevance of azoles in the European Union is considerable, as their hypothetical loss would have significant relapses on both the domestic market and international markets.**
- ❖ **Without azoles there would be a drop in domestic production, leading to a considerable deterioration of the EU wheat balance sheet**
- ❖ **The EU could cease to be a net exporter at world level and will become a net importer, bringing into question the possibility of the other big wheat suppliers to be able to satisfy the increasing global demand.**
- ❖ **This would increase the current uncertainty concerning food security, and could particularly lead to increases in both prices and price volatility.**



Nomisma

NOMISMA PROJECT STAFF

[redacted] (project leader),

[redacted],

[redacted]

[redacted]

