CONTRIBUTION TO THE COMMENTS ON DEOXYNIVALENOL, T-2 and HT-2 TOXIN IN FOOD
GLM (ITALIAN WORKING GROUP ON MYCOTOXINS) POSITION

Consideration on the suggested possible maximum levels for deoxynivalenol, T-2 and HT-2 toxins proposed by European Commission (DG SANTE) – September 2020.

1st October 2020

PRESENTATION CONTENTS

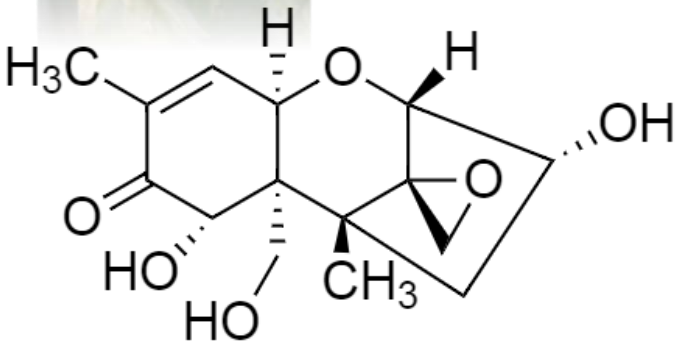
1. Introduction
2. Data presentation of the deoxynivalenol contamination in Italian wheat and maize samples
3. Discussion and perspective
4. Position of the GLM (Italian Working Group on mycotoxins)

1. INTRODUCTION

- In Italian cereal production deoxynivalenol is the main mycotoxin in small cereals.

- Conversely, T-2 and HT-2 toxins are infrequent and with limited concentrations.

- Therefore, **the considerations presented refer exclusively to deoxynivalenol.**



1. INTRODUCTION

Since the application of Regulation (EC) 1881/2006, all the subjects of the cereal supply chains have implemented **measures** and adopted **tools** to mitigate DON contamination in cereals produced in Italy:

- Adoption of integrated, preventive and direct **defense management strategies**;
- Selection of **tolerant varieties** to the ear rot caused by *Fusarium* spp.;
- **Monitoring** of lots in the field and upon arrival at the storage center;
- Innovative mechanical **cleaning** systems, and in particular adoption of optical sorters;
- Milling processes aimed at **separating** more effectively the **most contaminated fractions**;
- Repeated and **careful checks** on lots at every level of the manufacturing process;
- Setting up of regional territorial **alert systems** through **on-site checks** and **forecasting models.**

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Stipulation of **production Disciplinary** to mitigate mycotoxin contamination

1. INTRODUCTION

- Therefore, with reference to the production of *Fusarium* toxins, **the ability of the cereal supply chains to contain and manage emergencies is now much greater** than that prior to the introduction of the Regulation.

- However, despite the greater ability to control, **cereal productions are still highly exposed to high contamination by mycotoxins** and in particular by deoxynivalenol (DON). In fact, the **meteorological factor** remains crucial for the production of mycotoxins.

2. DATA PRESENTATION

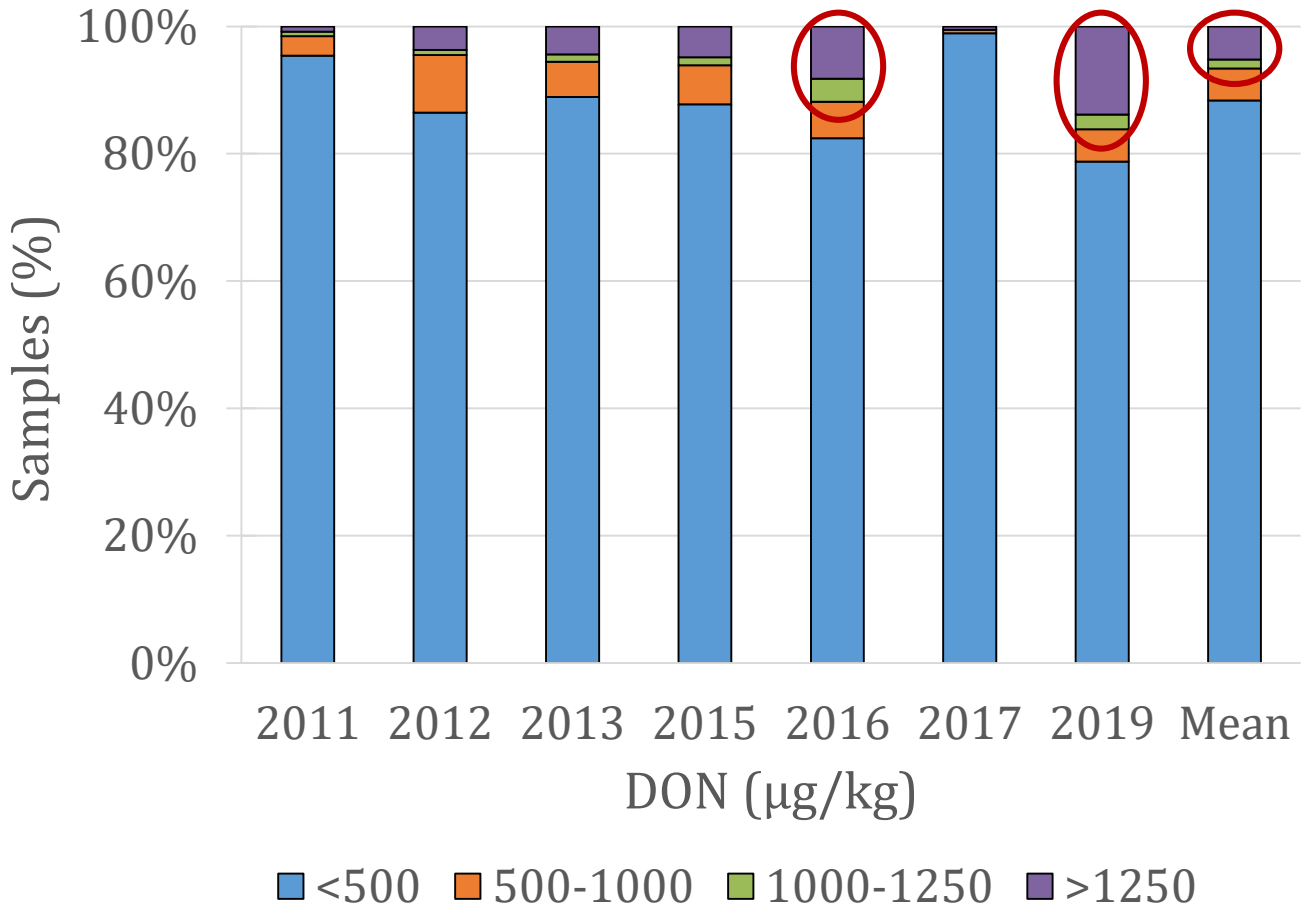
This causes a great variability of contamination in the different years and in the different areas, as evidenced by the National Monitoring Network of MIPAAF-CREA

Common wheat

Maize

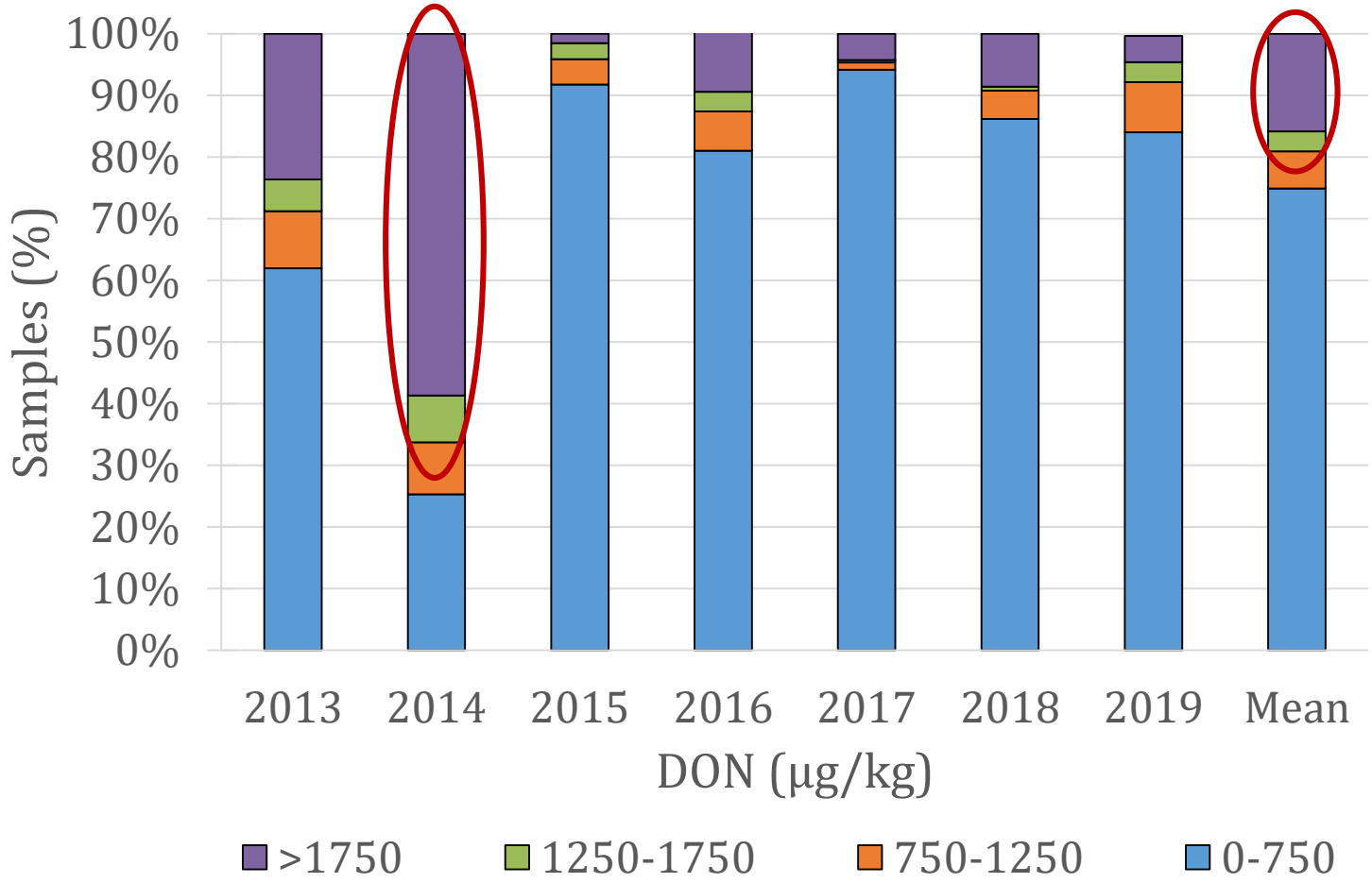
2. DATA PRESENTATION

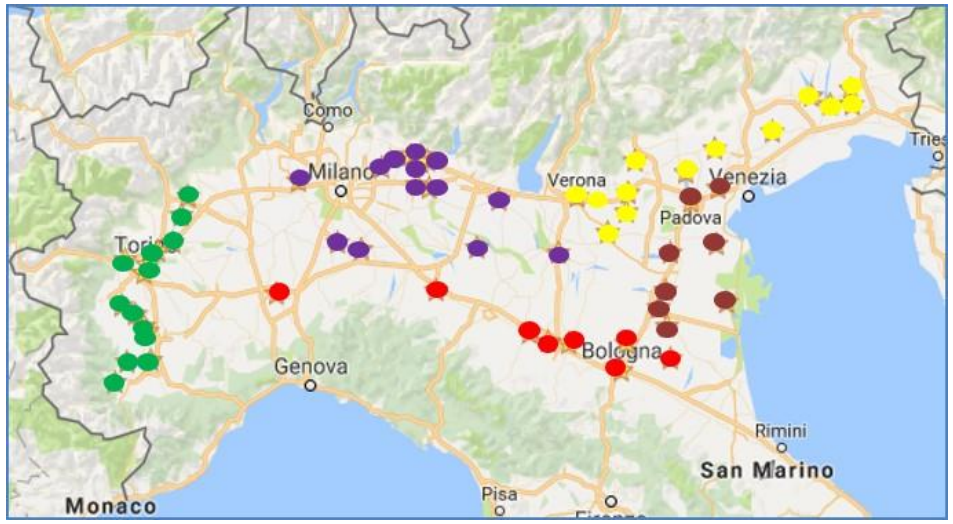
Common wheat: distribution of DON concentration in lots of grains sampled from the National varieties survey (1832 samples from 20:22 sites). From MIPAAF-CREA (2020)



2. DATA PRESENTATION

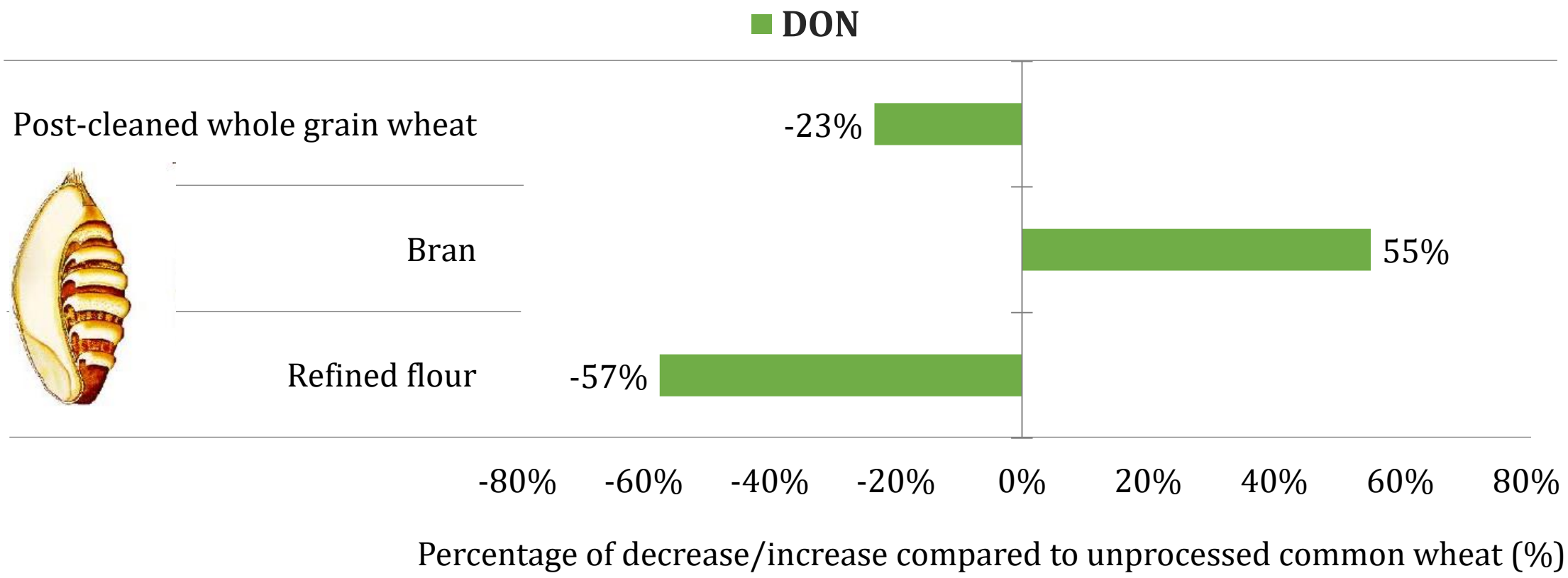
Maize: distribution of DON concentration in lots of grains sampled on storage centers (2328 samples from 42:59 centers/year). From MIPAAF-CREA (2019)





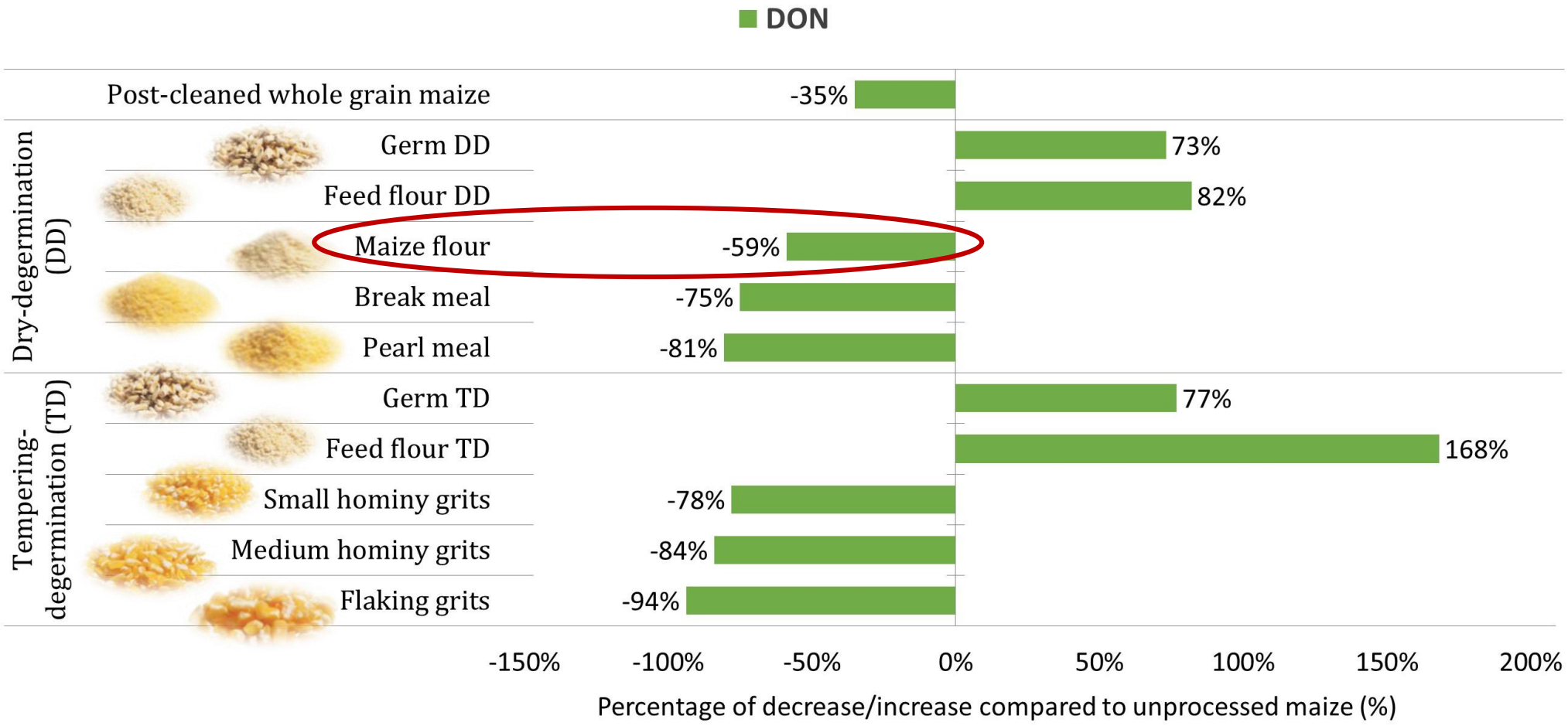
2. DATA PRESENTATION

Percentage of decrease/increase compared to the unprocessed common wheat due to the redistribution of DON in the milling fractions of 4 common wheat lots. (Regione Piemonte, 2020)



2. DATA PRESENTATION

Percentage of decrease/increase compared to the unprocessed maize due to the redistribution of DON in maize milling fractions of 3 maize lots. (ISS, 2019)



3. DISCUSSION AND PERSPECTIVE

The **frequency with which critical situations are encountered remains very high** for both wheat and maize. There is mainly due:

- To **more adverse meteorological trends**;
- To the **unavailability of wheat varieties and maize hybrids** with high tolerance to the ear rot caused by *Fusarium* spp.;
- To the **limits of effectiveness of fungicide treatments** and of the various preventive practices;
- To the **costs of the cleaning plants**, both for construction and for the high product waste generated.

3. DISCUSSION AND PERSPECTIVE

Several and increasing points of concern are added to the supply chains, mainly due to:

- The **difficulties of introducing** genetic engineering techniques (New Breeding Techniques) and **varieties resistant to the ear fusariosis**;
- The **increasingly stringent regulations** on the use of technical means in agriculture and for storage;
- The increasing environmental difficulties caused by the **Global climate change**;
- The increasingly reduced economic margins for all subjects in the cereal supply chains, which make the use of **strategies and means to the control of mycotoxin contamination less and less sustainable**.

3. DISCUSSION AND PERSPECTIVE

The introduction of Regulation (EC) 1881/2006, has actually led to the introduction in supply contracts of DON contamination values between 50 and 70% of the maximum limits.

A **further reduction** would have similar consequences, with the **subsequent risk of placing a higher number of lots out of food use**, generating very significant economic risks.

4. POSITION OF THE GLM

Although we are aware of the need to further reduce the content of contaminants for a better sanitary quality of food:

- ***We are convinced that a further reduction of the maximum levels for deoxynivalenol, T-2 and HT-2 toxins in the grain (unprocessed cereals), in the cereals placed on the market and in milling products, is not currently sustainable either from a technical or market point of view.***
- ***The further reduction of the contaminant content will be feasible in perspective if tools and operating solutions are available for compliance with new stricter limits.***

4. POSITION OF THE GLM

Therefore, ***it is requested to reassess the introduction of the new limits, leaving the operators of the supply chain, sector organizations and research the necessary time to study new measures and tools to assess the impact of the maximum levels proposed by the European Commission (DG SANTE) - September 2020 and consequent practical solutions also in light of the climatic evolution and the growing agro-environmental constraints imposed by the European Agricultural Policy.***

THANK YOU FOR THE ATTENTION