
***Fusarium* toxins in unprocessed maize and maize products (feed, maize oil)**

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Austrian Agency for Health and Food Safety
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Methods

parameter	extraction	clean up	derivative	separation	detection
B-Trichothecenes Deoxynivalenol (DON) , Nivalenol, Fusarenone X, 3- AcetylDON, 15-AcetylDON	Acetonitrile/water	Mycosep	TMS	GC (2 columns)	EC
Zearalenone (ZON)	Acetonitrile/water	IAC	-	RP-HPLC	FL
Fumonisin B1, B2	Acetonitrile/methanol/ water	IAC	OPA	RP-HPLC	FL

Fusarium toxins in unprocessed maize (2004-2006)

N: 2004=155, 2005=98, 2006=94

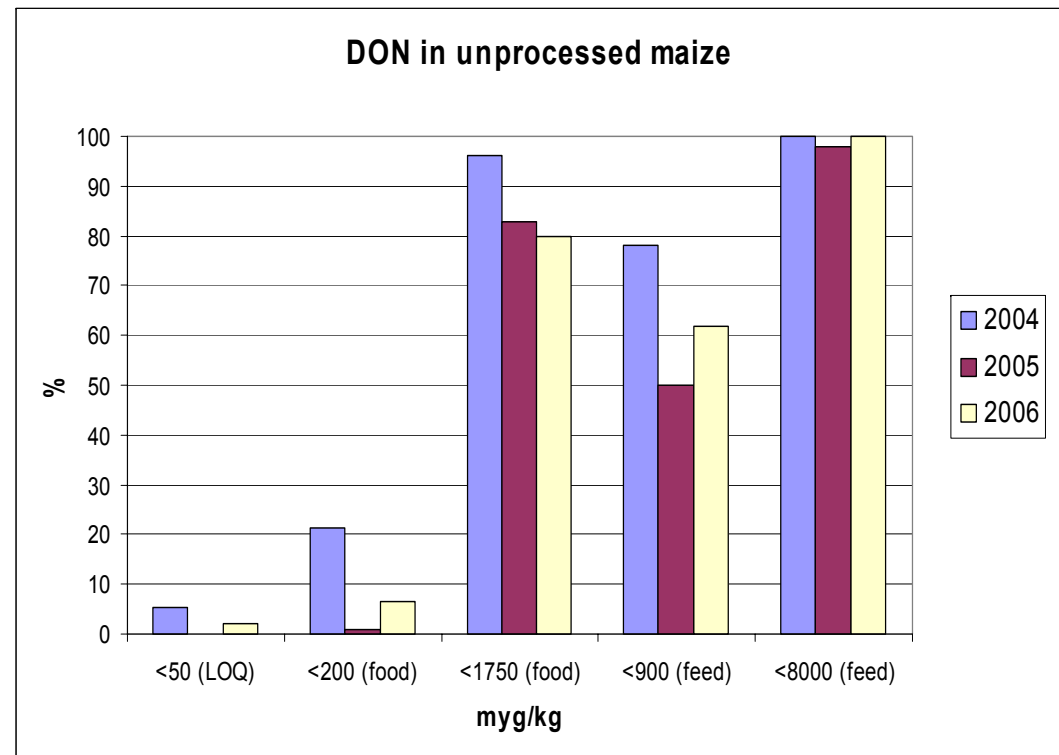
Range: <50 – 6000 ppb

1750 µg/kg EU maximum level for unprocessed maize (shall apply from 1-7-2007)

8000 µg/kg EU guidance value for feed materials (cereals and cereal products)

200 µg/kg EU maximum level for cereal-based foods for infants and young children

900 µg/kg EU guidance value for complete feedingstuffs for pigs



N.B.: data from 2006 are provisional!

***Fusarium* toxins in unprocessed maize (2004-2006)**

N: 2004=155, 2005=98, 2006=97

Range: <20 – 1215 ppb

200 µg/kg EU maximum level for unprocessed maize (shall apply from 1-7-2007)

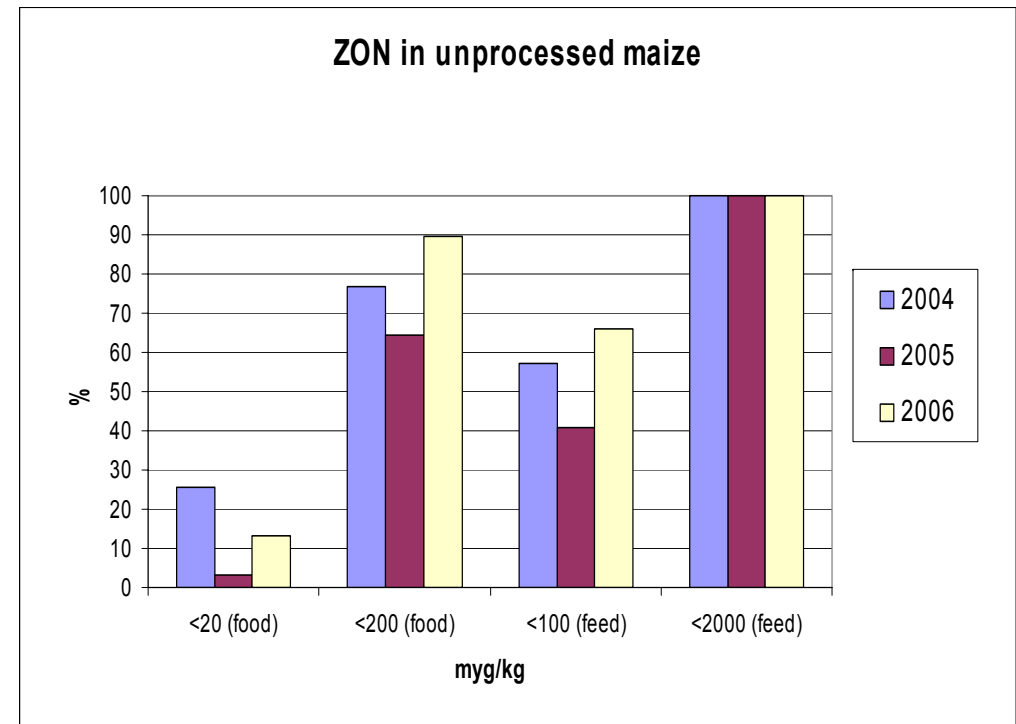
2000 µg/kg EU guidance value for feed materials (cereals and cereal products)

20 µg/kg EU maximum level for cereal-based foods for infants and young children

100 µg/kg EU guidance value for complete feedingstuffs for piglets and young sows

N.B.: data from 2006 are provisional!

DON-ZON: $r=0,6$ (n=174)



***Fusarium* toxins in unprocessed maize**

N = 198

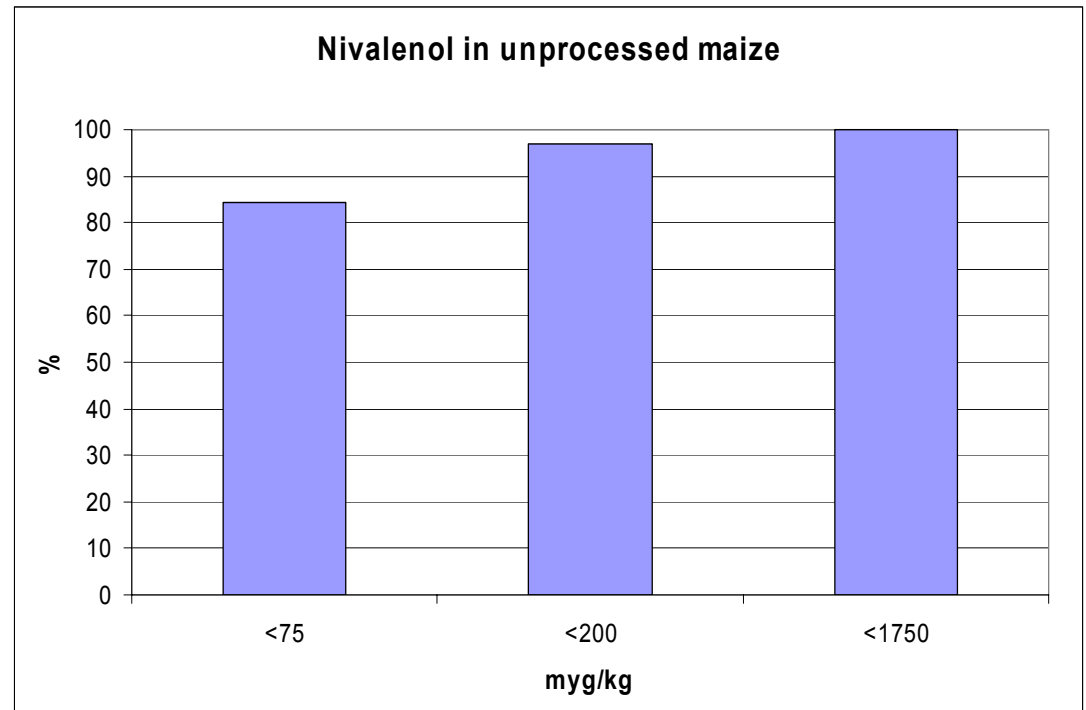
Range = <75 – 380 ppb

DON-Nivalenol (NIV):

r = 0,4 (for NIV > 75 ppb; n=31)

ZON-NIV:

r = 0,45 (for NIV > 75 ppb; n=31)



***Fusarium* toxins in unprocessed cereals (2004-2006)**



Fusarenon X (n=350)
n.d. (<30 ppb)

15-Acetyldeoxynivalenol (15-ADON)
(n=198)
<LOQ (50 ppb): 8,6%

3-Acetyldeoxynivalenol (3-ADON)
n=198
<LOQ (50 ppb): 80,3%

Range: <LOD – 1600 ppb

Range: <LOD – 190 ppb

Fusarium toxins in unprocessed maize

N = 198

DON-Range: <50 – 6000 ppb

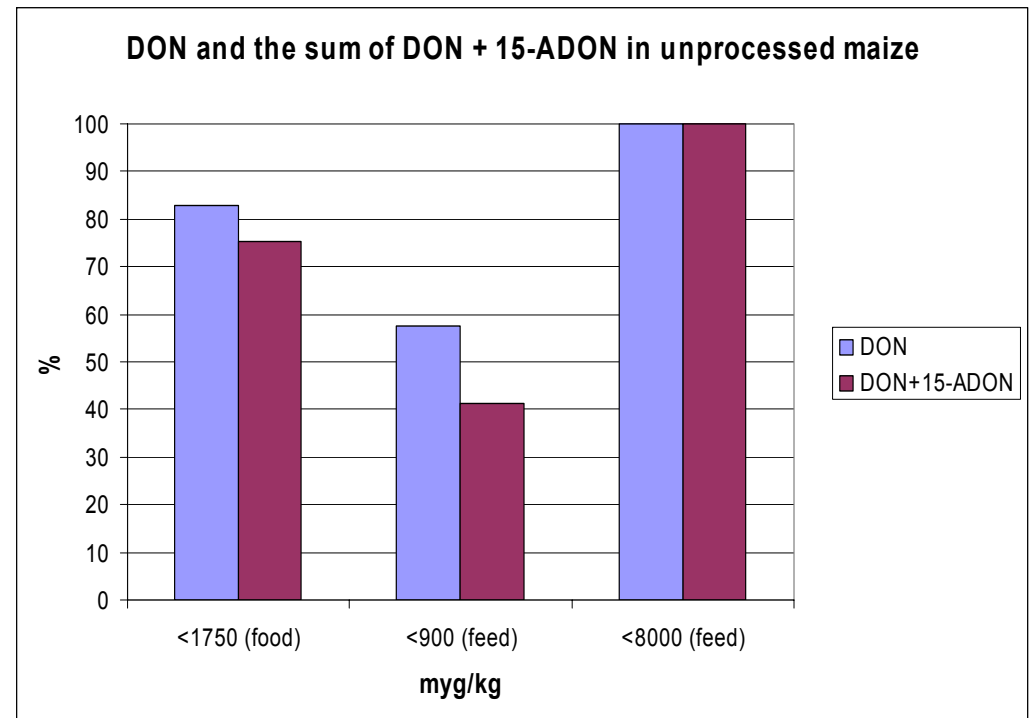
DON+15-ADON-range: <50-7600 ppb

DON - 15-ADON:

r = 0,76 (for 15-ADON > 50 ppb;

n=181)

15-ADON/DON ~ 27% (av.)



Fusarium toxins in unprocessed maize

2000 µg/kg EU maximum level for unprocessed maize (shall apply from 1-10-2007)

400 µg/kg EU maximum level for maize-based foods for direct human consumption (shall apply from 1-10-2007)

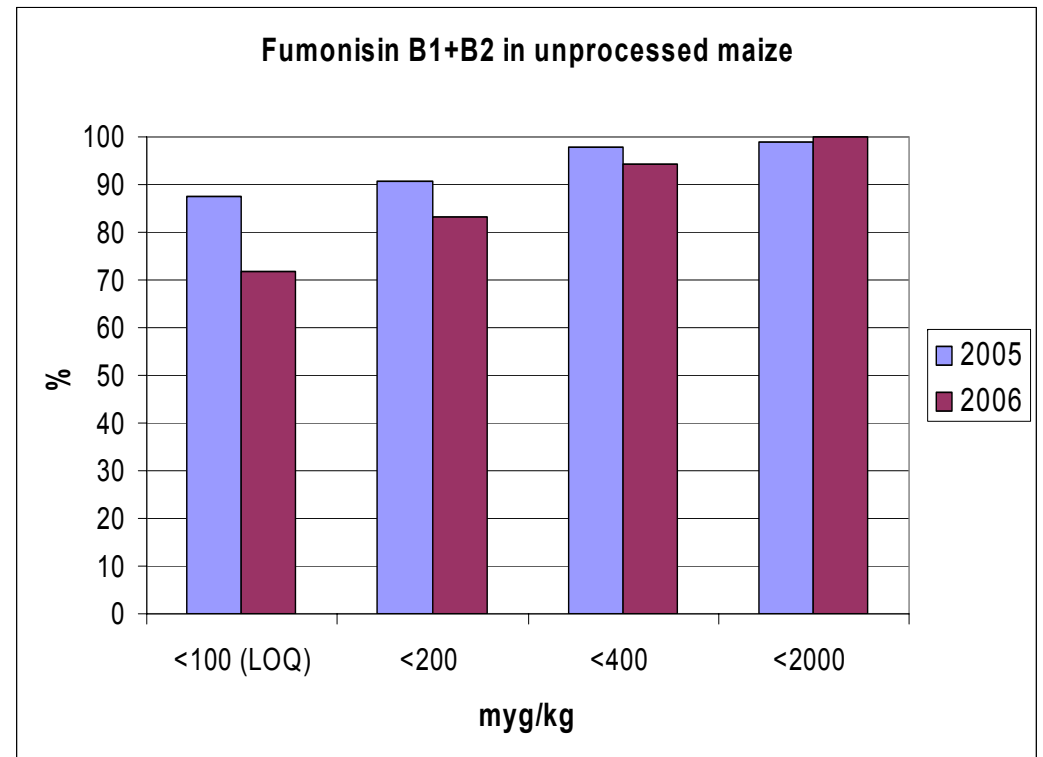
200 µg/kg EU maximum level for processed maize-based foods and baby foods for infants and young children (shall apply from 1-10-2007)

2005: N = 96

Range: <100 – 3620 ppb

2006 (data are provisional!): N = 71

Range: <100 – 1680 ppb



Zearalenone (ZON) in maize oils

**200 µg/kg EU maximum level
for unprocessed maize (shall
apply from 1-7-2007)**

>200 µg/kg: 0 %

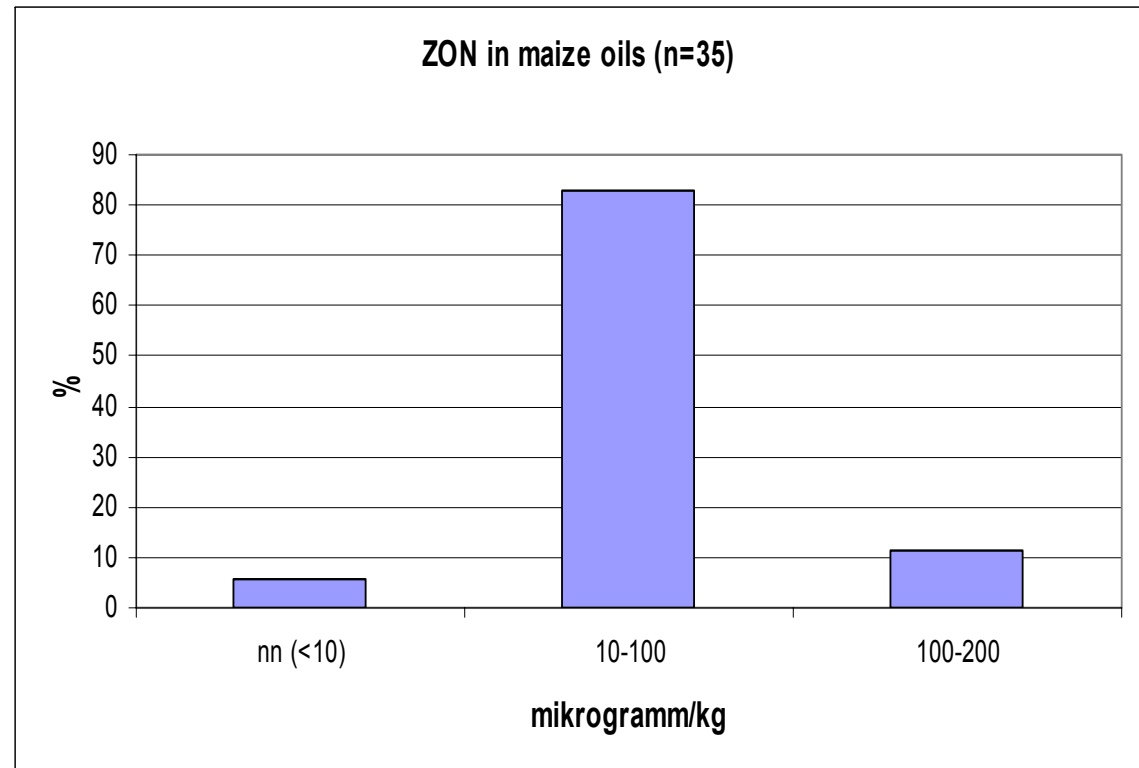
median: 75 ppb

mean: 65 ppb

n.d. : 5,7 %

range: n.d. (<10 ppb) – 110 ppb

n = 35



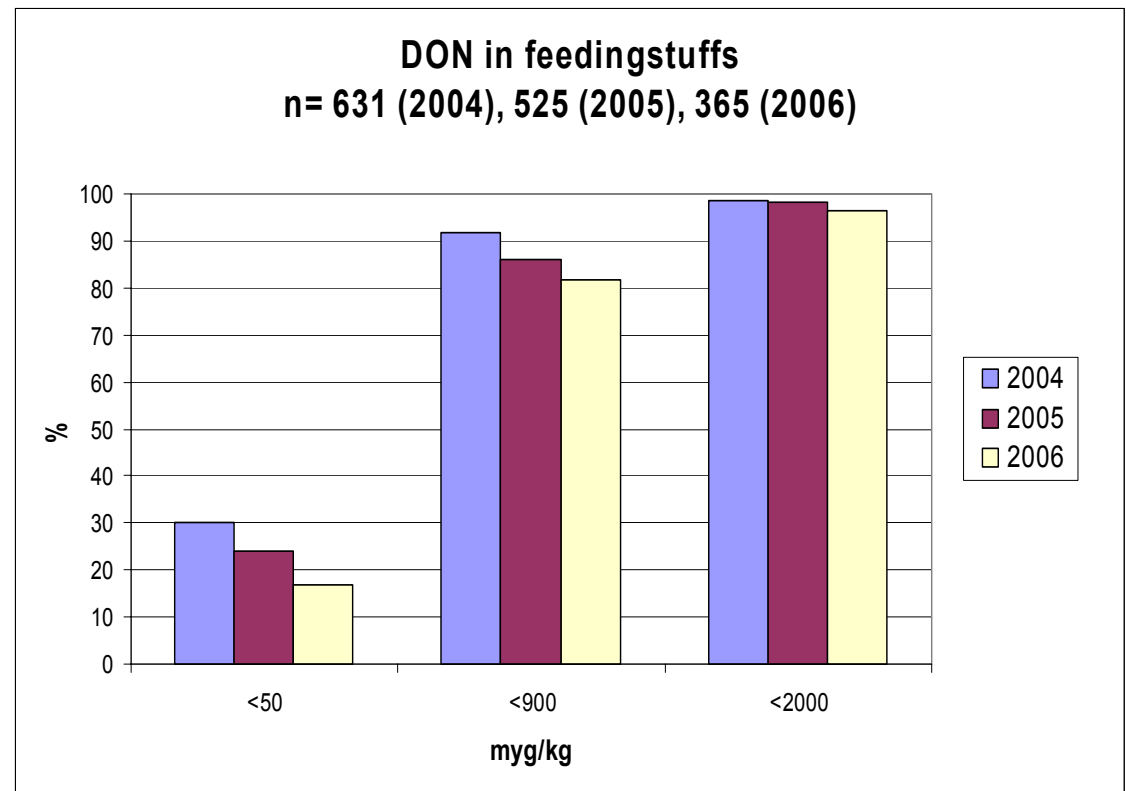
DON in feedingstuffs

50 µg/kg: LOQ

900 µg/kg EU guidance value
for complete feedingstuffs for
pigs

2000 µg/kg EU guidance value
for complementary and
complete feedingstuffs for
calves (<4 months), lambs and
kids

**N.B.: data from 2006 are
provisional!**



ZON in feedingstuffs

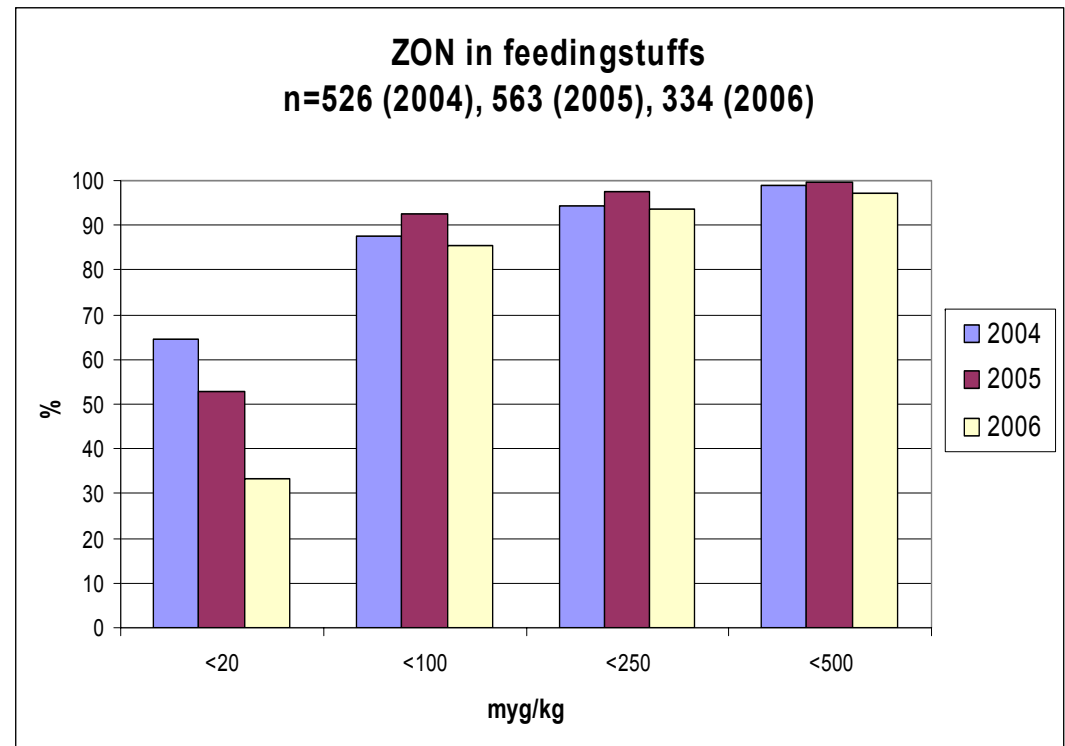
20 µg/kg: LOQ

100 µg/kg EU guidance value for complementary and complete feedingstuffs for piglets and gilts (young sows)

250 µg/kg EU guidance value for complementary and complete feedingstuffs for sows and fattening pigs

500 µg/kg EU guidance value for complementary and complete feedingstuffs for calves, dairy cattle, sheep and goats

N.B.: data from 2006 are provisional!



***Fusarium* toxins in unprocessed maize and maize products**



Thank you for your attention

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