

LOW LEVEL PRESENCE VS. COEXISTENCE: VESTIGIAL PRESENCE OF STACKED-TRANSGENIC EVENTS AND CONSEQUENCES OF UNINTENTIONAL RELEASES INTO CROP FIELDS

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Subject

- After results of maize seed and grain testing of the Portuguese Reference Laboratory we provide and discuss:
 - 1. Actual data on MON810 and NK603 presence in seed and grain.
 - 2. Comparisons between quantification methods.

Seed lots tested for the two events (m/m %)

MON810	<LOD	<LOD	<LOD	<LOD	<LOD	0.01±0.002
NK603	0.32±0.001	0.04±0.002	<LOD	<LOD	<LOD	<LOD



MON810	0.02±0.01	0.03±0.01	0.07±0.01	0.10±0.02	0.11±0.07	0.17±0.04
NK603	0.01±0.003	<LOD	negative	<LOD	<LOD	negative

MON810	0.19±0.03	0.23±0.07	0.27±0.09	0.35±0.09	0.45±0.09	0.50±0.03
NK603	0.01±0.001	<LOD	<LOD	negative	0.01±0.001	<LOD

Average LOD: MON 810 – 0.02; NK603 – 0.03

Technical zero: 0.1%

MON 810 and NK603 in maize grain samples from private clients (2014 data).

Sample	EU-GMFF Reference method		Commercial kit (for P35S promoter)
	% MON 810 \pm SD (m/m)	% NK603 \pm SD (m/m)	% P35S promoter (m/m)
1	0.01 \pm 0.003	0.01 \pm 0.003	*
2	< 0.01	0.02 \pm 0.03	0.49
3	< 0.01	0.42\pm0.72	*
4	< 0.01	0.04 \pm 0.05	0.14
5	< 0.01	0.10 \pm 0.02	*
6	0.08 \pm 0.04	0.04 \pm 0.02	0.03
7	0.05 \pm 0.02	0.05 \pm 0.02	1.08
8	0.03 \pm 0.01	0.04 \pm 0.01	1.76

* data not available due to insufficient sample.

Conclusions

- The EU regulations on GM labelling and on event authorization, on one side, and the lack of regulation on adventitious presence of events in seed, on the other side, are at odds.
- In spite of EU labelling threshold, food manufacturers often demand (technical) zero GMO to their suppliers.
- Therefore farmers that choose to supply such manufacturers might be trapped by an approved non-GM seed lot.
- Events that are not authorized either for cultivation, like NK603, or at all in EU might be adventitiously present in seed, often, though not always, stacked with MON810.

Conclusions

- This might also be tricky to maize producers.
- Unspecific quantification methods can overestimate (or underestimate) single event contents, and ultimately pushing GM labelling beyond legal needs.