

RISK ASSESSMENT FOR ROUNDUP READY™ MAIZE – MON87427

1. General Information:	
a. Name of Applicant	Powerful Grand (Pvt) Ltd t/a Capital Foods
b. Risk Assessment Reference Number	RA02260001
c. Date of Assessment	02/02/2026
d. Responsible Authority	National Biotechnology Authority
e. Intended Use of the organism	☐ Contained Use ☐ Trial Release ☐ General Release ☒ Food/Feed Processing
2. Objective and Scope of the Risk Assessment:	Risk assessment of GMO maize grain (MON87427) to be imported from South Africa, potential impact on human health and biodiversity.
3. Details of organism to be introduced:	
a. Identification	
i. Common Name	Maize
ii. Phylum	Tracheophyta
iii. Class	Liliopsida
iv. Order	Poales
v. Family	Poaceae
vi. Genus	<i>Zea</i> L.
vii. Species	<i>Zea mays</i> L
b. Origin/Natural Habitat	Maize wild types are naturally found in Mexico.
c. Receiving Environment/Proposed release environment	No release is intended. The maize grain will be processed at an approved milling site.
d. Differences from the conventional counter part	Herbicide tolerant
e. Detection	

i.	Proposed Method	Event-specific quantitative real-time PCR
ii.	Specificity	The detection method is event specific.
iii.	Sensitivity	Limit of detection (LOD) is 0.02%
4. Details of modification:		
a. Donor organism		
i.	Scientific Name	<i>Agrobacterium tumefaciens</i> strain CP4
ii.	Source/origin/Natural Habitat	Soil-borne bacterium
a. Receipt organism		
i.	Scientific Name	<i>Zea mays</i>
ii.	Source/origin/Natural Habitat	Conventional Breeding
b. Vector		
i.	Identification	PV-ZMAP1043
ii.	Transformation method	<i>Agrobacterium tumefaciens</i> -mediated plant transformation
c. Inserted Genetic Material and Traits		
i.	Brief description of modification	MON 87427 was developed through <i>Agrobacterium</i>-mediated transformation of maize using the PV-ZMAP1043 vector. The transforming plasmid is made up of one transfer DNA (T-DNA) consisting of the: • <i>cp4 epsps</i> coding sequence from <i>Agrobacterium</i> sp. strain CP4 which is under the regulation of the <i>e35S</i> promoter from the cauliflower mosaic virus, • <i>hsp70</i> intron from the maize heat shock protein 70 gene, • <i>CTP2</i> targeting sequence from <i>Arabidopsis thaliana</i>, • <i>nos</i> 3' non-translated region from <i>Agrobacterium tumefaciens</i>.
ii.	Intended traits	To confer herbicide tolerance in maize by decreasing binding affinity for glyphosate.

5. Environment Impact Assessment:	
a. Is there potential for a gene flow?	☐ Yes ☒ No ☐ Unknown Comment: The consignment to be transported and milled under the supervision of the National Biotechnology Authority. The maize will not be propagated.
b. Is there potential adverse impact on non-target organisms?	☐ Yes ☒ No ☐ Unknown Comment: The consignment to be transported and milled under the supervision of NBA. The maize will not be propagated.
c. Is there potential adverse impact on biodiversity?	☐ Yes ☒ No ☐ Unknown Comment: The maize will be strictly transported and milled under the supervision of NBA.
d. Other environmental considerations:	None
6. Impact on Human Health Assessment:	
a. Potential allergenicity	☐ Yes ☒ No ☐ Unknown Comment: According to FAO/WHO there is no known population of individuals sensitized to bacterial proteins (FAO, 2001).
b. Potential Toxicity	☐ Yes ☒ No

	☐ Unknown Comment:
c. History of safe use	☒ Available ☐ None ☐ Unknown Comment: GMO maize has been cultivated and used in food and feed with no reports of adverse effects on human health and biodiversity.
7. Conclusion:	
a. Summary of potential adverse effects	The event does not have any adverse effect.
b. Overall risk level	☒ Minimal ☐ Low ☐ Moderate ☐ High
c. Is the risk acceptable?	Yes
d. Socio-economic considerations	Ensures adequate supply of maize and food security.
e. Public consultation feedback	None
f. Post-release monitoring requirements	Supervised milling and GMO surveillance programs.
g. Decision	Importation approved with conditions
h. Conditions accompanying the decision	The National Biotechnology will supervise the transportation and milling of the consignment. The importer is required to submit, to the NBA, a schedule of movement of the consignment before it leaves the country of origin. The use or distribution of the consignment without the supervision of the NBA is prohibited.
8. Overall comment:	After completing the assessment, the event does not pose adverse impact on human health and biodiversity hence the products resulting from this

	genetic modification will be imported as per the provisions of the NBA Act and relevant regulations.
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