NAME OF THE ORGANISM: Helicoverpa armigera (HELIAR)

GENERAL INFORMATION ON THE PEST

Name as submitted in the project specification (if different to the preferred name):

Pest category:

Insecta **1- Identity of the pest/Level of taxonomic listing:**
Is the organism clearly a single taxonomic entity and can it be adequately distinguished from other entities of the same rank?

Yes
Is the pest defined at the species level or lower?:

Yes
Can listing of the pest at a taxonomic level higher than species be supported by scientific reasons or can species be identified within the taxonomic rank which are the (main) pests of concern?

* Not relevant: Ornamental sector, Seed potato sector, Vegetable propagating and planting material (other than seeds) sector

Is it justified that the pest is listed at a taxonomic rank below species level?

Not relevant
Conclusion:

* Candidate: Ornamental sector, Seed potato sector, Vegetable propagating and planting material (other than seeds) sector

**2 – Status in the EU:**

Is this pest already a quarantine pest for the whole EU?

No
Presence in the EU:

Yes
List of countries (EPPO Global Database):

Austria (2014); Belgium (2007); Bulgaria (1993); Cyprus (2011); Finland (2011); France (1994); Germany (2004); Greece (2010); Hungary (2000); Italy (2012); Italy/Sicilia (1994); Italy/Sardegna (1994); Malta (2008); Poland (2010); Portugal (2008); Portugal/Azores (2005); Portugal/Madeira (2008); Romania (1992); Slovakia (2011); Slovenia (2000); Spain (2016); Spain/Islas Canárias (1994)
Conclusion:

candidate
Justification (if necessary):

Data of the presence of this pest on the EU territory are available in EPPO Global Database (<https://gd.eppo.int/>).

HOST PLANT N°1: Chrysanthemum (1CHYG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

No
Conclusion:

Evaluation continues **4 - Are the listed plants for planting the main\* pathway for the "pest/host/intended use" combination? (\*: significant compared to others):**

No
Conclusion:

Not candidate

Justification:

Eggs and larvae can readily be transported with plants for planting, cut flowers and vegetables and many interceptions have been made on all three commodity types (EU COM, 2015). Eggs are laid usually in the upper half of plants. Pupation occurs in the soil (EFSA-PLH, 2014), in the upper 10 cm of the soil (Attique et al., 2000; Murray & Zaluki, 1994; Stoeva, 1969). H. armigera is extremely polyphagous and has been recorded on over 180 hosts (wild and cultivated) in over 45 plant families. Hosts are available throughout the EU in the field, in protected cultivation and as wild species, but the pest can only overwinter as diapausing pupae in the southernmost parts of the EU, where the winters are relatively warm. Long-distance seasonal movements are most common in summer, and adults may migrate up to 1000 km and reach Britain and other parts of Europe from southern Europe and North Africa. Migrating H. armigera have been recorded as far north as Sweden, Finland and Estonia, but there are very few records of the successful completion of one generation in Northern Europe. Migration is facultative and occurs in response to local crop and climatic conditions. Non-migratory flights up to 10 km have been recorded (Lammers & Macleod, 2007; EU COM, 2015). Therefore experts concluded that natural dispersal capacity is high (higher than Spodoptera littoralis), and plants for planting should not be considered as a significant pathway compared to other pathways. **CONCLUSION ON THE STATUS:**

Disqualified: Plants for planting are not considered to be a significant pathway. Plants for planting should be 'substantially free from' the pest. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

No
Proposed Tolerance levels:

Not recommended for the RNQP status. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

No
Proposed Risk management measure:

Not recommended for the RNQP status. **REFERENCES:**

* Attique M R, Ghaffar A, Mohyuddin A I & Ahmad Z (2000) Pupation and diapausing behaviour of Helicoverpa armigera (Hubner) (Lepidoptera: Noctuidae) in the Punjab. Pakistan Journal of Zoology 32, 61-64 ;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Helicoverpa armigera (Hübner). EFSA Journal 2014;12(10):3833, 28 pp. doi:10.2903/j.efsa.2014.3833 <http://www.efsa.europa.eu/en/efsajournal/doc/3833.pdf>;
* EU COM (2015) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Helicoverpa armigera (Hübner);
* Lammers JW & Macleod A (2007) Report of a pest risk analysis Helicoverpa armigera (Hübner, 1808). Plant Protection Service, the Netherlands, Central Science Laboratory, United Kingdom. <http://www.vwa.nl/onderwerpen/english/dossier/pest-risk-analysis/evaluation-of-pest-risks>;
* Murray D A H & Zaluki M P (1994) Spatial distribution and mortality of Helicoverpa spp. pupae (Lepidoptera: Noctuidae) under field crops on the Darling Downs, Queensland. Journal of the Australian Entomological Society 33, 193-198;
* Stoeva R (1969) The cotton bollworm-a serious pest of vegetable crops. Rastitelna Zashtita 17, 22-25;

HOST PLANT N°2: Chrysanthemum (Dendranthema) (1DDMG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

No
Conclusion:

Evaluation continues **4 - Are the listed plants for planting the main\* pathway for the "pest/host/intended use" combination? (\*: significant compared to others):**

No
Conclusion:

Not candidate

Justification:

Eggs and larvae can readily be transported with plants for planting, cut flowers and vegetables and many interceptions have been made on all three commodity types (EU COM, 2015). Eggs are laid usually in the upper half of plants. Pupation occurs in the soil (EFSA-PLH, 2014), in the upper 10 cm of the soil (Attique et al., 2000; Murray & Zaluki, 1994; Stoeva, 1969). H. armigera is extremely polyphagous and has been recorded on over 180 hosts (wild and cultivated) in over 45 plant families. Hosts are available throughout the EU in the field, in protected cultivation and as wild species, but the pest can only overwinter as diapausing pupae in the southernmost parts of the EU, where the winters are relatively warm. Long-distance seasonal movements are most common in summer, and adults may migrate up to 1000 km and reach Britain and other parts of Europe from southern Europe and North Africa. Migrating H. armigera have been recorded as far north as Sweden, Finland and Estonia, but there are very few records of the successful completion of one generation in Northern Europe. Migration is facultative and occurs in response to local crop and climatic conditions. Non-migratory flights up to 10 km have been recorded (Lammers & Macleod, 2007; EU COM, 2015). Therefore experts concluded that natural dispersal capacity is high (higher than Spodoptera littoralis), and plants for planting should not be considered as a significant pathway compared to other pathways. **CONCLUSION ON THE STATUS:**

Disqualified: Plants for planting are not considered to be a significant pathway. Plants for planting should be 'substantially free from' the pest. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Attique M R, Ghaffar A, Mohyuddin A I & Ahmad Z (2000) Pupation and diapausing behaviour of Helicoverpa armigera (Hubner) (Lepidoptera: Noctuidae) in the Punjab. Pakistan Journal of Zoology 32, 61-64 ;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Helicoverpa armigera (Hübner). EFSA Journal 2014;12(10):3833, 28 pp. doi:10.2903/j.efsa.2014.3833 <http://www.efsa.europa.eu/en/efsajournal/doc/3833.pdf>;
* EU COM (2015) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Helicoverpa armigera (Hübner);
* Lammers JW & Macleod A (2007) Report of a pest risk analysis Helicoverpa armigera (Hübner, 1808). Plant Protection Service, the Netherlands, Central Science Laboratory, United Kingdom. <http://www.vwa.nl/onderwerpen/english/dossier/pest-risk-analysis/evaluation-of-pest-risks>;
* Murray D A H & Zaluki M P (1994) Spatial distribution and mortality of Helicoverpa spp. pupae (Lepidoptera: Noctuidae) under field crops on the Darling Downs, Queensland. Journal of the Australian Entomological Society 33, 193-198;
* Stoeva R (1969) The cotton bollworm-a serious pest of vegetable crops. Rastitelna Zashtita 17, 22-25;

HOST PLANT N°3: Dianthus (1DING) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

No
Conclusion:

Evaluation continues **4 - Are the listed plants for planting the main\* pathway for the "pest/host/intended use" combination? (\*: significant compared to others):**

No
Conclusion:

Not candidate

Justification:

Eggs and larvae can readily be transported with plants for planting, cut flowers and vegetables and many interceptions have been made on all three commodity types (EU COM, 2015). Eggs are laid usually in the upper half of plants. Pupation occurs in the soil (EFSA-PLH, 2014), in the upper 10 cm of the soil (Attique et al., 2000; Murray & Zaluki, 1994; Stoeva, 1969). H. armigera is extremely polyphagous and has been recorded on over 180 hosts (wild and cultivated) in over 45 plant families. Hosts are available throughout the EU in the field, in protected cultivation and as wild species, but the pest can only overwinter as diapausing pupae in the southernmost parts of the EU, where the winters are relatively warm. Long-distance seasonal movements are most common in summer, and adults may migrate up to 1000 km and reach Britain and other parts of Europe from southern Europe and North Africa. Migrating H. armigera have been recorded as far north as Sweden, Finland and Estonia, but there are very few records of the successful completion of one generation in Northern Europe. Migration is facultative and occurs in response to local crop and climatic conditions. Non-migratory flights up to 10 km have been recorded (Lammers & Macleod, 2007; EU COM, 2015). Therefore experts concluded that natural dispersal capacity is high (higher than Spodoptera littoralis), and plants for planting should not be considered as a significant pathway compared to other pathways. **CONCLUSION ON THE STATUS:**

Disqualified: Plants for planting are not considered to be a significant pathway. Plants for planting should be 'substantially free from' the pest. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Attique M R, Ghaffar A, Mohyuddin A I & Ahmad Z (2000) Pupation and diapausing behaviour of Helicoverpa armigera (Hubner) (Lepidoptera: Noctuidae) in the Punjab. Pakistan Journal of Zoology 32, 61-64 ;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Helicoverpa armigera (Hübner). EFSA Journal 2014;12(10):3833, 28 pp. doi:10.2903/j.efsa.2014.3833 <http://www.efsa.europa.eu/en/efsajournal/doc/3833.pdf>;
* EU COM (2015) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Helicoverpa armigera (Hübner);
* Lammers JW & Macleod A (2007) Report of a pest risk analysis Helicoverpa armigera (Hübner, 1808). Plant Protection Service, the Netherlands, Central Science Laboratory, United Kingdom. <http://www.vwa.nl/onderwerpen/english/dossier/pest-risk-analysis/evaluation-of-pest-risks>;
* Murray D A H & Zaluki M P (1994) Spatial distribution and mortality of Helicoverpa spp. pupae (Lepidoptera: Noctuidae) under field crops on the Darling Downs, Queensland. Journal of the Australian Entomological Society 33, 193-198;
* Stoeva R (1969) The cotton bollworm-a serious pest of vegetable crops. Rastitelna Zashtita 17, 22-25;

HOST PLANT N°4: Pelargonium (1PELG) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

No
Conclusion:

Evaluation continues **4 - Are the listed plants for planting the main\* pathway for the "pest/host/intended use" combination? (\*: significant compared to others):**

No
Conclusion:

Not candidate

Justification:

Eggs and larvae can readily be transported with plants for planting, cut flowers and vegetables and many interceptions have been made on all three commodity types (EU COM, 2015). Eggs are laid usually in the upper half of plants. Pupation occurs in the soil (EFSA-PLH, 2014), in the upper 10 cm of the soil (Attique et al., 2000; Murray & Zaluki, 1994; Stoeva, 1969). H. armigera is extremely polyphagous and has been recorded on over 180 hosts (wild and cultivated) in over 45 plant families. Hosts are available throughout the EU in the field, in protected cultivation and as wild species, but the pest can only overwinter as diapausing pupae in the southernmost parts of the EU, where the winters are relatively warm. Long-distance seasonal movements are most common in summer, and adults may migrate up to 1000 km and reach Britain and other parts of Europe from southern Europe and North Africa. Migrating H. armigera have been recorded as far north as Sweden, Finland and Estonia, but there are very few records of the successful completion of one generation in Northern Europe. Migration is facultative and occurs in response to local crop and climatic conditions. Non-migratory flights up to 10 km have been recorded (Lammers & Macleod, 2007; EU COM, 2015). Therefore experts concluded that natural dispersal capacity is high (higher than Spodoptera littoralis), and plants for planting should not be considered as a significant pathway compared to other pathways. **CONCLUSION ON THE STATUS:**

Disqualified: Plants for planting are not considered to be a significant pathway. Plants for planting should be 'substantially free from' the pest. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Attique M R, Ghaffar A, Mohyuddin A I & Ahmad Z (2000) Pupation and diapausing behaviour of Helicoverpa armigera (Hubner) (Lepidoptera: Noctuidae) in the Punjab. Pakistan Journal of Zoology 32, 61-64 ;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Helicoverpa armigera (Hübner). EFSA Journal 2014;12(10):3833, 28 pp. doi:10.2903/j.efsa.2014.3833 <http://www.efsa.europa.eu/en/efsajournal/doc/3833.pdf>;
* EU COM (2015) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Helicoverpa armigera (Hübner);
* Lammers JW & Macleod A (2007) Report of a pest risk analysis Helicoverpa armigera (Hübner, 1808). Plant Protection Service, the Netherlands, Central Science Laboratory, United Kingdom. <http://www.vwa.nl/onderwerpen/english/dossier/pest-risk-analysis/evaluation-of-pest-risks>;
* Murray D A H & Zaluki M P (1994) Spatial distribution and mortality of Helicoverpa spp. pupae (Lepidoptera: Noctuidae) under field crops on the Darling Downs, Queensland. Journal of the Australian Entomological Society 33, 193-198;
* Stoeva R (1969) The cotton bollworm-a serious pest of vegetable crops. Rastitelna Zashtita 17, 22-25;

HOST PLANT N°5: Solanaceae (1SOLF) for the Vegetable propagating and planting material (other than seeds) sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

No
Conclusion:

Evaluation continues **4 - Are the listed plants for planting the main\* pathway for the "pest/host/intended use" combination? (\*: significant compared to others):**

No
Conclusion:

Not candidate

Justification:

Eggs and larvae can readily be transported with plants for planting, cut flowers and vegetables and many interceptions have been made on all three commodity types (EU COM, 2015). Eggs are laid usually in the upper half of plants. Pupation occurs in the soil (EFSA-PLH, 2014), in the upper 10 cm of the soil (Attique et al., 2000; Murray & Zaluki, 1994; Stoeva, 1969). H. armigera is extremely polyphagous and has been recorded on over 180 hosts (wild and cultivated) in over 45 plant families. Hosts are available throughout the EU in the field, in protected cultivation and as wild species, but the pest can only overwinter as diapausing pupae in the southernmost parts of the EU, where the winters are relatively warm. Long-distance seasonal movements are most common in summer, and adults may migrate up to 1000 km and reach Britain and other parts of Europe from southern Europe and North Africa. Migrating H. armigera have been recorded as far north as Sweden, Finland and Estonia, but there are very few records of the successful completion of one generation in Northern Europe. Migration is facultative and occurs in response to local crop and climatic conditions. Non-migratory flights up to 10 km have been recorded (Lammers & Macleod, 2007; EU COM, 2015).
In areas where the pest is present plants for planting are not the main pathway because of the natural dispersal capacity of the organism. **CONCLUSION ON THE STATUS:**

Disqualified: Plants for planting are not considered to be a significant pathway. Plants for planting should be 'substantially free from' the pest. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Attique M R, Ghaffar A, Mohyuddin A I & Ahmad Z (2000) Pupation and diapausing behaviour of Helicoverpa armigera (Hubner) (Lepidoptera: Noctuidae) in the Punjab. Pakistan Journal of Zoology 32, 61-64 ;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Helicoverpa armigera (Hübner). EFSA Journal 2014;12(10):3833, 28 pp. doi:10.2903/j.efsa.2014.3833 <http://www.efsa.europa.eu/en/efsajournal/doc/3833.pdf>;
* EU COM (2015) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Helicoverpa armigera (Hübner);
* Lammers JW & Macleod A (2007) Report of a pest risk analysis Helicoverpa armigera (Hübner, 1808). Plant Protection Service, the Netherlands, Central Science Laboratory, United Kingdom. <http://www.vwa.nl/onderwerpen/english/dossier/pest-risk-analysis/evaluation-of-pest-risks>;
* Murray D A H & Zaluki M P (1994) Spatial distribution and mortality of Helicoverpa spp. pupae (Lepidoptera: Noctuidae) under field crops on the Darling Downs, Queensland. Journal of the Australian Entomological Society 33, 193-198;
* Stoeva R (1969) The cotton bollworm-a serious pest of vegetable crops. Rastitelna Zashtita 17, 22-25;

HOST PLANT N°6: Solanaceae (1SOLF) for the Ornamental sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

No
Conclusion:

Evaluation continues **4 - Are the listed plants for planting the main\* pathway for the "pest/host/intended use" combination? (\*: significant compared to others):**

No
Conclusion:

Not candidate

Justification:

Eggs and larvae can readily be transported with plants for planting, cut flowers and vegetables and many interceptions have been made on all three commodity types (EU COM, 2015). Eggs are laid usually in the upper half of plants. Pupation occurs in the soil (EFSA-PLH, 2014), in the upper 10 cm of the soil (Attique et al., 2000; Murray & Zaluki, 1994; Stoeva, 1969). H. armigera is extremely polyphagous and has been recorded on over 180 hosts (wild and cultivated) in over 45 plant families. Hosts are available throughout the EU in the field, in protected cultivation and as wild species, but the pest can only overwinter as diapausing pupae in the southernmost parts of the EU, where the winters are relatively warm. Long-distance seasonal movements are most common in summer, and adults may migrate up to 1000 km and reach Britain and other parts of Europe from southern Europe and North Africa. Migrating H. armigera have been recorded as far north as Sweden, Finland and Estonia, but there are very few records of the successful completion of one generation in Northern Europe. Migration is facultative and occurs in response to local crop and climatic conditions. Non-migratory flights up to 10 km have been recorded (Lammers & Macleod, 2007; EU COM, 2015). Therefore experts concluded that natural dispersal capacity is high (higher than Spodoptera littoralis), and plants for planting should not be considered as a significant pathway compared to other pathways. **CONCLUSION ON THE STATUS:**

Disqualified: Plants for planting are not considered to be a significant pathway. Plants for planting should be 'substantially free from' the pest. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Attique M R, Ghaffar A, Mohyuddin A I & Ahmad Z (2000) Pupation and diapausing behaviour of Helicoverpa armigera (Hubner) (Lepidoptera: Noctuidae) in the Punjab. Pakistan Journal of Zoology 32, 61-64 ;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Helicoverpa armigera (Hübner). EFSA Journal 2014;12(10):3833, 28 pp. doi:10.2903/j.efsa.2014.3833 <http://www.efsa.europa.eu/en/efsajournal/doc/3833.pdf>;
* EU COM (2015) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Helicoverpa armigera (Hübner);
* Lammers JW & Macleod A (2007) Report of a pest risk analysis Helicoverpa armigera (Hübner, 1808). Plant Protection Service, the Netherlands, Central Science Laboratory, United Kingdom. <http://www.vwa.nl/onderwerpen/english/dossier/pest-risk-analysis/evaluation-of-pest-risks>;
* Murray D A H & Zaluki M P (1994) Spatial distribution and mortality of Helicoverpa spp. pupae (Lepidoptera: Noctuidae) under field crops on the Darling Downs, Queensland. Journal of the Australian Entomological Society 33, 193-198;
* Stoeva R (1969) The cotton bollworm-a serious pest of vegetable crops. Rastitelna Zashtita 17, 22-25;

HOST PLANT N°7: Solanum tuberosum (SOLTU) for the Seed potato sector.

Origin of the listing:

IIA2AWG
Plants for planting:

Plants intended for planting, other than [true] seeds **3 - Is the pest already listed in a PM4 standard on the concerned host plant?**

No
Conclusion:

Evaluation continues **4 - Are the listed plants for planting the main\* pathway for the "pest/host/intended use" combination? (\*: significant compared to others):**

No
Conclusion:

Not candidate

Justification:

Eggs and larvae can readily be transported with plants for planting, cut flowers and vegetables and many interceptions have been made on all three commodity types (EU COM, 2015). Eggs are laid usually in the upper half of plants. Pupation occurs in the soil (EFSA-PLH, 2014), in the upper 10 cm of the soil (Attique et al., 2000; Murray & Zaluki, 1994; Stoeva, 1969). Even though Solanum tuberosum is a host plant, association with seed potatoes is considered unlikely. Seed potatoes grown and sold as young plants in pots are a negligible trade although micro plants of higher categories are traded in small amounts. However the methods and growing conditions used (in small tubes or jars in controlled environment conditions) prevent any infestation risks. H. armigera is polyphagous and can be spread with plants for planting of many species. It is present in Europe and can spread over large distances. It can migrate over 1000 km (Lammers & Macleod, 2007; EFSA-PLH, 2014). Experts concluded that seed potatoes is not considered to be a significant pathway. **CONCLUSION ON THE STATUS:**

Disqualified: Seed potatoes are not considered to be a significant pathway. **8 - Tolerance level:**
Is there a need to change the Tolerance level:

Yes
Proposed Tolerance levels:

Delisting. **9 - Risk management measures:**
Is there a need to change the Risk management measure:

Yes
Proposed Risk management measure:

Delisting. **REFERENCES:**

* Attique M R, Ghaffar A, Mohyuddin A I & Ahmad Z (2000) Pupation and diapausing behaviour of Helicoverpa armigera (Hubner) (Lepidoptera: Noctuidae) in the Punjab. Pakistan Journal of Zoology 32, 61-64 ;
* EFSA Panel on Plant Health (PLH) (2014) Scientific Opinion on the pest categorisation of Helicoverpa armigera (Hübner). EFSA Journal 2014;12(10):3833, 28 pp. doi:10.2903/j.efsa.2014.3833 <http://www.efsa.europa.eu/en/efsajournal/doc/3833.pdf>;
* EU COM (2015) Recommendation of the Working Group on the Annexes of the Council Directive 2000/29/EC – Section II – Listing of Harmful Organisms as regards the future listing of Helicoverpa armigera (Hübner);
* Lammers JW & Macleod A (2007) Report of a pest risk analysis Helicoverpa armigera (Hübner, 1808). Plant Protection Service, the Netherlands, Central Science Laboratory, United Kingdom. <http://www.vwa.nl/onderwerpen/english/dossier/pest-risk-analysis/evaluation-of-pest-risks>;
* Murray D A H & Zaluki M P (1994) Spatial distribution and mortality of Helicoverpa spp. pupae (Lepidoptera: Noctuidae) under field crops on the Darling Downs, Queensland. Journal of the Australian Entomological Society 33, 193-198;
* Stoeva R (1969) The cotton bollworm-a serious pest of vegetable crops. Rastitelna Zashtita 17, 22-25;