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DIETARY RISK ASSESSMENT FOR THE PROPOSED APPLICATION OF THE PRODUCTS: Bumper 250 EC/Principle 250 EC/Propin 250 EC

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Dietary exposure assessment

The uses supported in South Africa by the propiconazole derogation group, are provided in the Good Agricultural Practice (GAP) table in Appendix 1. The supported crops are Pecan, Mango, Apricot/Cherry/Peach/Plum, Wheat and Barley. Using the Bryant Christie (BC) Global database for pesticide MRLs, a report has been run for propiconazole on these crops. The highest Global MRLs (Maximum Residue levels) for each crop are listed in the table below. It should be noted that different methods of MRL calculation are used in different countries, and sometimes even the same dataset may result in a different MRL value. However, it is true in all countries that the MRL is a highly conservative value used to facilitate trade between countries and to monitor GAP compliant application, whereas the lower STMR (Supervised Trial Median Residue) and HR (Highest Residue) values are intended for risk assessment calculations.

Table 1: MRLs for propiconazole around the world

Crop	MRL (mg/kg)							Comments
	Codex	**Taiwan**	**USA**	**GCC**	**Argentina**	**Australia**	**South Africa**	
Pecan	0.02*	0.02	0.1	0.02	0.02	**0.2**	0.05	AUS, USA and S.A MRLs for whole tree-nut group
Mango	N.E	**1.0**	N.E	N.E	0.01 (default)	0.05	0.01 (default)	-
Apricot	**4.0** (Po)	1.0	**4.0**	N.E	**4.0**	**4.0**	0.2	Codex - Included in the peach MRL (group FS 2001) AUS and USA MRL for whole stone fruit group (excl. plum) S.A MRL for whole stone fruit group
Cherry	3.0 (Po)	0.01	**4.0**	N.E	3.0	**4.0**	0.01 (default)	AUS and USA MRL for whole stone fruit group (excl. plum)
Peach	4.0 (Po)	4.0	4.0	**5.0**	4.0	4.0	4.0	AUS, ARG, USA and S.A MRL for whole stone fruit group (excl. plum)
Plum	0.4 (Po)	1.0	0.6	0.6	0.4	**2.0**	0.2	S.A MRL for whole stone fruit group
Wheat	0.09	0.02	0.3	0.09	**0.4**	0.05*	0.1	AUS MRL for whole cereal group (excl. sweetcorn)
Barley	2.0	0.2	**3.0**	2.0	1.5	0.05*	0.05	AUS MRL for whole cereal group (excl. sweetcorn)

Highest Global MRL for each crop presented in **bold**
Po – MRL based on a post-harvest use
* MRL set at the LOQ level
Default MRL - When a specific MRL has not been set on a commodity for a pesticide, some markets defer to a set default MRL value. Policies regarding the use of default MRLs vary by country.
N.E – Not established
GCC – Gulf Cooperation Council

To present a worst-case risk assessment for consumers, the highest global MRL for each crop has been used in chronic and acute consumer risk assessment calculations (see bold values in Table 1). The current Codex toxicological reference values: Acceptable Daily Intake (ADI) and Acute Reference Dose (ARfD), which were agreed by the 2004 JMPR and further elaborated on in the main body of toxicological assessment are as follows:

- ADI = 0.07 mg/kg bw/day used for chronic risk assessment
- ARfD = 0.3 mg/kg bw used for acute risk assessment

The WHO models have been used for the chronic (IEDI – International Estimated Daily Intake) and acute (IESTI – International Estimate of Short-Term Intake) calculations. The results from each assessment are presented below.

Chronic risk assessment	Acute risk assessment
Maximum IEDI (based on G08 diet): 10% of ADI	Maximum IESTI = 90% of ARfD (based on consumption of peaches in the Japanese Child 1-6 years diet)
Maximum IEDI for South Africa (G05 diet): 3% of ADI	

This assessment using the most conservative approach to dietary risk assessment (i.e. the highest worldwide MRLs have been used as the input values for each crop) demonstrates that there is no unacceptable dietary chronic or acute risk to consumers.

The chronic risk assessment is not considered further as the maximum IEDI for South Africa (G05 diet) = 3% of the ADI and considering the conservatism of the assessment there is no necessary refinement/mitigation required.

For the acute assessment, although is it already demonstrated above that there is no unacceptable dietary risk to consumers because the highest IESTI = 90% of ARfD (based on consumption of peaches in the Japanese Child 1-6 years diet) refinements have been conducted.

Due to the public availability of JMPR reports and evaluations, comparisons between the South African GAPs and the Codex GAPs for each relevant crop have been made in the sections below. The comparisons show that the current South African GAPs are within the risk envelope for propiconazole already assessed by the JMPR. As a result, to demonstrate the level of conservatism in the risk calculations using the highest Global MRLs, an additional acute calculation has been performed using the STMR (supervised trial median residue) and/ or HR (highest residue) values listed by the JMPR for each crop.

The result for the refined acute risk assessment is presented below and clearly demonstrates that there is no unacceptable dietary acute risk to consumers.

Acute extreme worst-case assessment	Acute assessment with refinements
Maximum IESTI = 90% of ARfD (based on consumption of peaches in the Japanese Child 1-6 years diet)	Maximum IESTI = 40% of ARfD (based on consumption of peaches in the Japanese Child 1-6 year diet)

GAP comparison (Codex versus South African uses)

Barley

GAP details for propiconazole on barley are summarised in the following table:

Table 2: GAPs for propiconazole on barley

Country	GAP				
	No. of applications	**Rate per application**	**Growth stage at application**	**PHI (days)**	**Comments**
South Africa	2	125 g ai/ha	BBCH 25-59	40	Application interval: 10 days Foliar spray – ground application
CODEX	2	125 g ai/ha	Before BBCH 71	N/A	Application interval 14 days

N/A – PHI is determined by growth stage at application

As presented above in Table 1, the highest current Global MRL for propiconazole on barley is from the USA.

When comparing the South African GAP to the Codex GAP (Table 2), the South African application rate is comparable and the growth stage at application is less critical than in the Codex GAP. According to the JMPR, the residue definition for monitoring is propiconazole, whereas the residue definition for risk assessment is propiconazole plus all metabolites convertible to 2,4-dichloro-benzoic acid, expressed as propiconazole. In the 2015 JMPR report, residues in barley grain expressed according to the residue definition for risk assessment were presented. The calculated STMR (Supervised Trial Median Residue) and HR (Highest Residue) values were 0.255 mg/kg and 2.1 mg/kg, respectively. Additionally, according to the USA tolerance legislation (Title 40, § 180.434), tolerance levels for propiconazole include parent and all propiconazole residues convertible to 2,4-dichlorobenzoic acid, expressed as propiconazole.

The Codex MRL (2.0 mg/kg) and the Codex HR (2.1 mg/kg) are lower than the USA MRL (3.0 mg/kg) that was used in the consumer risk assessment.

Therefore, it is considered highly unlikely that the use of propiconazole according to the South African GAP for barley would lead to unacceptable dietary risk for consumers.

Wheat

GAP details for propiconazole on wheat are summarised in the following table:

Table 3: GAPs for propiconazole on wheat

Country	GAP				
	No. of applications	**Rate per application**	**Growth stage at application**	**PHI (days)**	**Comments**
South Africa	2	150 g ai/ha	BBCH 29-59	40	Application interval: 10 days Foliar spray – ground application
CODEX	2	125 g ai/ha	Before BBCH 71	N/A	Application interval 14 days

N/A – PHI is determined by growth stage at application

As presented in Table 1, the highest current Global MRL for propiconazole on wheat is from Argentina.

When comparing the South African GAP to the Codex GAP (Table 3), the South African application rate is comparable and the growth stage at application is less critical than the Codex GAP. According to the JMPR, the residue definition for monitoring is propiconazole, whereas the residue definition for risk assessment is propiconazole plus all metabolites convertible to 2,4-dichloro-benzoic acid, expressed as propiconazole. In the 2015 JMPR report, residues in wheat grain expressed according to the residue definition for risk assessment were presented. The calculated STMR (Supervised Trial Median Residue) and HR (Highest Residue) values were 0.06 mg/kg and 0.155 mg/kg, respectively. It is not clear from the publicly available data what the residue definition for risk assessment is in Argentina.

The Codex MRL (0.09 mg/kg) and the Codex HR (0.155 mg/kg) are lower than the Argentinian MRL (0.4 mg/kg) that was used in the consumer risk assessment. Therefore, it is considered highly unlikely that the use of propiconazole according to the South African GAP for wheat would lead to unacceptable dietary risk for consumers.

Peach

GAP details for propiconazole on peach are summarised in the following table:

Table 4: GAPs for propiconazole on peach

Country	GAP				
	No. of applications	**Rate per application**	**Growth stage at application**	**PHI (days)**	**Comments**
South Africa	3	5 g ai/hL	BBCH 55-69	10-14	Application interval: 7 days Foliar spray – ground application
	3	5 g ai/hL	BBCH 10-97	10-14	Application interval: 14 days Foliar spray – ground application
CODEX	1	14 g ai/hL	Post-harvest treatment	-	Dip/drench treatment

As presented in Table 1, the highest current Global MRL for propiconazole on peach is from the Gulf Cooperation Council (GCC).

When comparing the South African GAPs to the Codex GAP (Table 4), the application rate and timing of applications are less critical than the Codex GAP. According to the JMPR, the residue definition for monitoring is propiconazole, whereas the residue definition for risk assessment is propiconazole plus all metabolites convertible to 2,4-dichloro-benzoic acid, expressed as propiconazole. In the 2019 JMPR report, residues in peach expressed according to the residue definition for risk assessment were presented. The calculated STMR (Supervised Trial Median Residue) and HR (Highest Residue) values were 1.7 mg/kg and 2.5 mg/kg, respectively. It is not clear from the publicly available data what the residue definition for risk assessment is in the Gulf Cooperation Council.

The Codex MRL (4.0 mg/kg) and the Codex HR (2.5 mg/kg) are lower than the GCC MRL (5.0 mg/kg) that was used in the consumer risk assessment. Therefore, it is considered highly unlikely that the use of propiconazole according to the South African GAPs for peach would lead to unacceptable dietary risk for consumers.

Cherry

GAP details for propiconazole of cherries are summarised in the following table:

Table 5: GAPs for propiconazole on cherry

Country	GAP				
	No. of applications	**Rate per application**	**Growth stage at application**	**PHI (days)**	**Comments**
South Africa	3	5 g ai/hL	BBCH 55-69	10-14	Application interval: 7 days Foliar spray – ground application
	3	5 g ai/hL	BBCH 10-97	10-14	Application interval: 14 days Foliar spray – ground application
CODEX	1	12.9 g ai/hL	Post-harvest treatment	-	Dip/drench treatment

As presented in Table 1, the highest current Global MRL for propiconazole on cherry is from the USA and Australia.

When comparing the South African GAPs to the Codex GAP (Table 5), the application rate and growth stage at application are less critical than the Codex GAP. According to the JMPR, the residue definition for monitoring is propiconazole, whereas the residue definition for risk assessment is propiconazole plus all metabolites convertible to 2,4-dichloro-benzoic acid, expressed as propiconazole. In the 2017 JMPR report, residues in cherry expressed according to the residue definition for risk assessment were presented. The calculated STMR (Supervised Trial Median Residue) and HR (Highest Residue) values were 1.0 mg/kg and 1.8 mg/kg, respectively. Additionally, according to the USA tolerance legislation (Title 40, § 180.434), tolerance levels for propiconazole include parent and all propiconazole residues convertible to 2,4-dichlorobenzoic acid, expressed as propiconazole.

Additionally, 3 residue trials are available for cherry that were carried out in South Africa during 2008/2009. Propiconazole was applied as an EC formulation containing 250 g ai/L. A total of 5 foliar applications were made at a nominal rate of either 5 or 10 g ai/hL, with application intervals of 7-11 days. Samples of cherries were collected 14 days after the last application. Following the 5 g ai/hL application, residues in cherry ranged from <0.01-0.04 mg/kg. Following the 10 g ai/hL application, residues in cherry ranged from 0.12-0.16 mg/kg.

The Codex MRL (3.0 mg/kg), the Codex HR (1.8 mg/kg) and the residue trial values from South Africa (<0.01-0.16 mg/kg) are lower than the USA and Australian MRL (4.0 mg/kg) that was used in the consumer risk assessment. Therefore, it is considered highly unlikely that the use of propiconazole according to the South African GAPs for cherry would lead to unacceptable dietary risk for consumers.

Plum

GAP details for propiconazole on plum are summarised in the following table:

Table 6: GAPs for propiconazole on plum

Country	GAP				
	No. of applications	**Rate per application**	**Growth stage at application**	**PHI (days)**	**Comments**
South Africa	3	5 g ai/hL	BBCH 55-69	10-14	Application interval: 7 days Foliar spray – ground application
CODEX (USA)	1	12.9 g ai/hL	Post-harvest treatment	-	Dip/drench treatment

As presented in Table 1, the highest current Global MRL for propiconazole on plum is from Australia.

When comparing the South African GAP to the Codex GAP (Table 6), the application rate and growth stage at application are less critical than the Codex GAP. According to the JMPR, the residue definition for monitoring is propiconazole, whereas the residue definition for risk assessment is propiconazole plus all metabolites convertible to 2,4-dichloro-benzoic acid, expressed as propiconazole. In the 2017 JMPR report, residues in plum expressed according to the residue definition for risk assessment were presented. The calculated STMR (Supervised Trial Median Residue) and HR (Highest Residue) values were 0.15 mg/kg and 0.23 mg/kg, respectively. It is not clear from the publicly available data what the residue definition for risk assessment is in Australia.

The Codex MRL (0.4 mg/kg) and Codex HR (0.23 mg/kg) are lower than the Australian MRL (2.0 mg/kg) that was used in the consumer risk assessment. Therefore, it is considered highly unlikely that the use of propiconazole according to the South African GAP for plum would lead to unacceptable dietary risk for consumers.

Apricot

GAP details for propiconazole on apricot are summarised in the following table:

Table 7: GAPs for propiconazole on apricot

Country	GAP				
	No. of applications	**Rate per application**	**Growth stage at application**	**PHI (days)**	**Comments**
South Africa	3	5 g ai/hL	BBCH 55-69	10-14	Application interval: 7 days Foliar spray – ground application
CODEX (USA)	1	14 g ai/hL	Post-harvest treatment	-	Dip/drench treatment

As presented in Table 1, the highest current Global MRL for propiconazole on apricot is from Argentina, the USA and Australia. These MRLs are all equivalent to the Codex MRL for apricot.

When comparing the South African GAP to the Codex GAP (Table 7), the application rate and growth stage at application are less critical than the Codex GAP. The Codex MRL represents the highest Global MRL for propiconazole on peach, therefore this was used in the consumer risk assessment. According to the JMPR, the residue definition for monitoring is propiconazole, whereas the residue definition for risk assessment is propiconazole plus all metabolites convertible to 2,4-dichloro-benzoic acid, expressed as propiconazole. In the 2019 JMPR report, residues in peach expressed according to the residue definition for risk assessment were presented and extrapolated to apricot.

The calculated STMR (Supervised Trial Median Residue) and HR (Highest Residue) values were 1.7 mg/kg and 2.5 mg/kg, respectively.

Additionally, 3 residue trials are available for apricot that were carried out in South Africa during 2016. Propiconazole was applied as an EC formulation containing 250 g ai/L. A total of 4 foliar applications were made at a nominal rate of 5 g ai/hL, with application intervals of 7-9 days. Samples of apricots were collected 10 days after the last application. These trials are considered to be overdosed in terms of number of applications and total application rate, compared to the South African GAP. Residues in flesh ranged from 0.05-0.33 mg/kg.

The South African MRL (0.2 mg/kg), and the residue trial values from South Africa (0.05-0.33 mg/kg) are lower than the Codex MRL (4.0 mg/kg) that was used in the consumer risk assessment. Therefore, it is considered highly unlikely that the use of propiconazole according to the South African GAP for apricot would lead to unacceptable dietary risk for consumers.

Mango

GAP details for propiconazole on mango are summarised in the following table:

Table 8: GAPs for propiconazole on mango

Country	GAP				
	No. of applications	**Rate per application**	**Growth stage at application**	**PHI (days)**	**Comments**
South Africa	2	5 g ai/hL	BBCH 65-70	120	Application interval: 10-14 days Foliar spray ground application
CODEX	-	-	-	-	-

A use of propiconazole on mango has not been evaluated by the JMPR, therefore no Codex MRL is established. As presented in Table 1, the highest current Global MRL for propiconazole on mango is from Taiwan. The derogation group notes that no Mango MRL was considered necessary in South Africa because the product is applied during flowering. Some trials are nevertheless available that confirmed the no residue situation for mango.

Residue trials on mango are available which were carried out in South Africa during 2018/2019. Propiconazole was applied as an EC formulation containing 250 g ai/L. A total of 3 applications were made at a nominal rate of either 5 g ai/hL or 10 g ai/hL, with application intervals of 13-14 days. Samples of mango were collected on the same day as the last application (0-day PHI). Residues of propiconazole in the mango fruit were all <LOQ (<0.01 mg/kg), in samples from both treatment plots.

The residue trials available are conducted at a more critical GAP than the registered South African GAP, in terms of number of applications and PHI. In these trials the residue values were all <LOQ, therefore it is not expected that residues in mango would exceed 0.01 mg/kg when propiconazole is applied in accordance with the South African GAP. Additionally, this demonstrates that the default MRL currently in place in South Africa is appropriate.

The risk assessment conducted here used the highest Global MRL (1.0 mg/kg) as an input value for mango, and no acute or chronic risk was identified. Therefore, it is considered highly unlikely that the use of propiconazole according to the South African GAP for mango would lead to unacceptable dietary risk for consumers.

Pecan

GAP details for propiconazole on pecan are summarised in the following table:

Table 9: GAPs for propiconazole on pecan

Country	GAP				
	No. of applications	**Rate**	**Growth stage at application**	**PHI (days)**	**Comments**
South Africa	3	250 g ai/ha	1st app BBCH 15	90	Application intervals: 10 days after 1st app 21 days after 2nd app
CODEX (USA)	1-3	122-244 g ai/ha	By bud break or pre-pollination Before shuck split	45	Foliar application Application interval: 14 days Max. 380 g ai/ha/season

N/A – PHI is determined by growth stage at application

As presented in Table 1, the highest current Global MRL for propiconazole on pecan is from Australia.

When comparing the South African GAP to the Codex GAP (Table 9), the number of applications and application rate is comparable, however the total application rate for South Africa (max 750 g ai/ha) is higher than the total application rate for Codex (Max. 380 g ai/ha/season). That said, the PHI for the codex GAP is much more critical than the South African GAP. Additionally, when we consider the residue trials that were evaluated by the 2007 JMPR to support this Codex GAP, propiconazole was applied at a rate of 371 g ai/ha, 6 – 10 times. Samples were collected 7 – 21 days after the last application. None of the 38 pecan nut samples contained residues above the LOQ. The applied dosage rate was approximately 1.5 – 3× of the registered rate and the PHIs were much shorter than the permitted minimum 45 days. The trials evaluated by the 2007 JMPR are also considered much more critical than the registered South African GAP.

According to the JMPR, the residue definition for monitoring is propiconazole, whereas the residue definition for risk assessment is propiconazole plus all metabolites convertible to 2,4-dichloro-benzoic acid, expressed as propiconazole. In the 2007 JMPR report, residues in pecan expressed according to the residue definition for risk assessment were presented. The calculated STMR (Supervised Trial Median Residue) and HR (Highest Residue) values were both 0.02 mg/kg (LOQ value), as no quantifiable residues were found. It is not clear from the publicly available data what the residue definition for risk assessment is in Australia.

The Codex MRL (0.02* mg/kg) is lower than the Australian MRL (0.2 mg/kg) that was used in the consumer risk assessment. Therefore, it is considered highly unlikely than the use of propiconazole according to the South African GAP for pecan would lead to unacceptable dietary risk for consumers.

Drinking water assessment

Potential contamination of drinking water following the propiconazole uses has also been explored. The PEC_{gw} values for propiconazole have been determined in a separate document (2402743.UK0 – 1442 Propiconazole FOCUS PEC_{gw} report). All PEC_{GW} values for propiconazole were ≤0.001 µg/L for all crops and all FOCUS scenarios modelled following applications made in accordance with each GAP. To determine the consumer exposure to propiconazole through drinking water, the following exposure calculations have been presented below.

$$\left(\left(\frac{concentration\ in\ water\ x\ consumption}{bodyweight}\right) \div ADI\right) \times 100$$

- Exposure to infants (5kg bodyweight, consumption 0.75 L/day) = <0.001% of the ADI
- Exposure to children (10 kg bodyweight, consumption 1 L/day) = <0.001% of the ADI
- Exposure to adults (60kg bodyweight, consumption 2 L/day) = <0.001% of the ADI

Conclusion

This assessment has considered the registered uses for propiconazole in South Africa that were provided by the Derogation group (see Appendix 1). Each South African GAP has been compared to the publicly available Codex GAPs for the equivalent crop and found to be less critical. In numerous cases, the Codex MRL is not the highest Global MRL available for that crop. Therefore, the most conservative approach for consumer risk assessment was taken and an acute and chronic assessment was conducted using the highest Global MRL for each crop. This risk assessment demonstrated that there is no unacceptable risk to consumers using the highest MRLs as input values for the assessment. Therefore, it is demonstrated that the uses of propiconazole according to the South African supported uses are within the risk envelope of this assessment and the MRLs that are currently applicable worldwide. It is highly unlikely that the South African registered uses of propiconazole on mango, pecan, barley, wheat, peach, plum, cherry and apricot would lead to unacceptable dietary risk for consumers. It has also been demonstrated that the uses will not have an impact on drinking water.

References

Bryant Christie Global Database: Regulatory Limits PESTICIDES/Pesticide MRLs (bryantchristie.com)

Pesticide residues in food 2004. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticide Residues. FAO Plant Production and Protection Paper, 178, 2004. Rome, Italy, 20–29 September 2004

Pesticide residues in food 2007. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticide Residues. FAO Plant Production and Protection Paper, 191, 2007. Geneva, Switzerland, 18–27 September 2007

Pesticide residues in food 2015. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticide Residues. FAO Plant Production and Protection Paper, 223, 2015. Geneva, Switzerland, 15-24 September 2015

Pesticide residues in food 2017. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper, 232, 2017. Geneva, Switzerland, 12–21 September 2017

Pesticide residues in food 2019. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper, 2020. Geneva, Switzerland, 17–26 September 2019.

Louw, W., 2009, Determination of propiconazole residues in cherry samples, Report No. 2418/D176

Louw, W., 2009, Determination of propiconazole residues in cherry samples, Report No. 2418/D177

Louw, W., 2009, Determination of propiconazole residues in cherry samples, Report No. 2418/D178

Lattughi, M., 2017, Determination of propiconazole residues in apricots, Report No. 17-60907/1

Lattughi, M., 2017, Determination of propiconazole residues in apricots, Report No. 17-60915/1

Lattughi, M., 2017, Determination of propiconazole residues in apricots, Report No. 17-60902/1

Van Schoor, D., 2019, To determine the residual active content of Propiconazole 250 EC in mangos, Report No. 1537-1

Van Schoor, D., 2019, To determine the residual active content of Propiconazole 250 EC in mangos, Report No. 1537-2

Van Schoor, D., 2019, To determine the residual active content of Propiconazole 250 EC in mangos, Report No. 1537-3

Van Schoor, D., 2019, To determine the residual active content of Propiconazole 250 EC in mangos, Report No. 1537-Res1

Van Schoor, D., 2019, To determine the residual active content of Propiconazole 250 EC in mangos, Report No. 1537-Res2

Tallentire, E., 2024, Predicted environmental concentrations in groundwater after application of propiconazole to tree crops and cereals Report No 2402743.UK0 - 1442

Appendix 1 – Critical GAP

The critical GAP for propiconazole in South Africa is presented below

GAP rev. 1, date: 29.09.2019

PPP (product name/code):	**Bumper 250 EC/Principle 250 EC/Propin**	Formulation type:	EC [a, b]
Active substance 1:	**Propiconazole**	Conc. of as 1:	250g/L [c]
Safener:	**NA**	Conc. of safener:	NA
Synergist/adjuvant	NA	Conc. of adjuvant:	NA
Applicant:	**Propiconazole derogation group**	Professional use:	☒
		Non professional use:	☐

Fungicide

1	2	3	4	5	6	7	8	9	10	11*	12	13	14
					Application				**Application rate**				
Use No.	**Country**	**Crop and/or situation**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** (additionally: developmental stages of the pest or pest group)	Method/Kind	Timing/Growth stage of crop & season	Max. number per crop/ season	Min. interval between applications (days)	L product/ha a) max. rate per appl. b) max. total rate per crop/season	g a.s./ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max	**PHI** (days)	**Remarks:** product variant, other dose rate expressions dose range (min-max)
1	ZA	Pecan nuts	F	Scab (*Fusicladium effusum*)	Foliar Spray (ground application)	1st application BBCH 15 2nd application 10 days after T1 3rd application 21 days after T2	3	10-21 days	a) 0.5-1.0 b) 1.5-3.0	a) 125-250 b) 375-750	1000 - 2000	90	50 ml product/100 L water = 0.05 x 250 g/100L = 12.5g as/100L
2	ZA	Mango	F	Powdery mildew (*Oidium mangiferae*)	Foliar Spray (ground application)	BBCH 65-70	2	10-14 days	a) 0.3 b) 0.6	a) 75 b) 150	1500	120	20 ml product/100 L water= 0.02x250 g/100L= 5g as/100L

3	ZA	Apricot, Cherry, Peach, Plum	F	Blossom blight (*Monilinia laxa*)	Foliar Spray (ground application)	BBCH 55-69	3	7 days	a) 0.4 b) 1.2	a) 100 b) 300	2000	10/14	20 ml product/100 L water= 0.02x250 g/100L= 5g as/100L
4	ZA	Cherry, Peach	F	Powdery mildew (*Sphaerotheca pannosa*)	Foliar Spray (ground application)	BBCH 10-39 BBCH 60 BBCH 65 BBCH 69 BBCH 91-97	3	14 days	a) 0.6 b) 1.8	a) 150 b) 450	3000	10/14	20 ml product/100 L water= 0.02x250 g/100L= 5g as/100L Do not exceed 3 applications per season of propiconazole on stone fruit
5	ZA	Wheat	F	Stem, foliar and ear diseases	Foliar Spray (ground & aerial application)	BBCH 29-59	2 per crop	10 days	0.6	a) 150 b) 300	300	40	Aerial application: 30 L/ha water volume
6	ZA	Barley	F	Foliar diseases	Foliar Spray (ground & aerial application)	BBCH 25-59	2 per crop	10 days	0.5	a) 125 b) 250	300	40	Aerial application: 30 L/ha water volume

Remarks table heading:

(a) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(b) Catalogue of pesticide formulation types and international coding system CropLife International Technical Monograph n°2, 6th Edition Revised May 2008
(c) g/kg or g/l
(d) Select relevant
(e) Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1
(f) No authorization possible for uses where the line is highlighted in grey, Use should be crossed out when the notifier no longer supports this use.

Remarks columns:

1 Numeration necessary to allow references
2 Use official codes/nomenclatures of EU Member States
3 For crops, the EU and Codex classifications (both) should be used; when relevant, the use situation should be described (e.g. fumigation of a structure)
4 F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application
5 Scientific names and EPPO-Codes of target pests/diseases/ weeds or, when relevant, the common names of the pest groups (e.g. biting and sucking insects, soil born insects, foliar fungi, weeds) and the developmental stages of the pests and pest groups at the moment of application must be named.
6 Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated.
7 Growth stage at first and last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
8 The maximum number of application possible under practical conditions of use must be provided.
9 Minimum interval (in days) between applications of the same product
10 For specific uses other specifications might be possible, e.g.: g/m³ in case of fumigation of empty rooms. See also EPPO-Guideline PP 1/239 Dose expression for plant protection products.
11 The dimension (g, kg) must be clearly specified. (Maximum) dose of a.s. per treatment (usually g, kg or L product / ha).
12 If water volume range depends on application equipments (e.g. ULVA or LVA) it should be mentioned under “application: method/kind”.
13 PHI - minimum pre-harvest interval
14 Remarks may include: Extent of use/economic importance/restrictions

Appendix 2 – BC Global MRL report

Regulatory Limits
MRL Pesticides Repor