5.5 CHLOROTHALONIL (081)

RESIDUE AND ANALYTICAL ASPECTS

Chlorothalonil is a non-systemic fungicide first evaluated by JMPR in 1974 and a number of times subsequently. It was recently reviewed for toxicology by the 2009 and 2010 JMPR within the periodic review program of the CCPR. For the parent substance an ADI of 0–0.02 mg/kg bw and an ARfD of 0.6 mg/kg bw were established. In addition to the parent substance, an ADI of 0–0.008 mg/kg bw and an ARfD of 0.03 mg/kg bw were established for the metabolite SDS-3701.

The 2010 JMPR recommended the following residue definition for chlorothalonil:

Definition of the residue for compliance with MRL for plant commodities: *chlorothalonil*

Definition of the residue for estimation of dietary intake for plant commodities: *chlorothalonil*

SDS-3701 (2,5,6-trichloro-4-hydroxyisophthalonitrile), all considered separately.

Definition of the residue for compliance with MRL and for estimation of dietary intake for animal commodities: *SDS-3701 (2,5,6-trichloro-4-hydroxyisophthalonitrile)*.

In 2012 the JMPR evaluated additional uses for chlorothalonil in banana, chard, chicory, endive, spring onion, spinach, and peas.

The current Meeting received new information on use patterns for chlorothalonil in multiple crops supported by additional analytical methods, storage stability data and supervised field trials.

Methods of analysis

The Meeting received two analytical methods for chlorothalonil not previously evaluated by the Meeting. Both methods were used in the supervised field trials newly submitted and are not intended for monitoring purposes.

Method GRM005.01A is applicable to plant matrices and used homogenisation with acetone and 5M sulphuric acid solution (95:5 v/v). Following solid phase extraction (SPE) clean-up, chlorothalonil was analysed by gas chromatography with mass selective detection (GC-MSD). The metabolite R182281 was quantified by high performance liquid chromatography with triple-quadrupole mass spectrometric detection. The method was successfully validated (70–110% recovery, RSD < 20%) for both analytes for matrices with high water, high acid, high oil and high starch content.

The second method ("Cornell-Method") is an in-house method using acidified acetone and partitioning against petroleum ether. The organic phase contains chlorothalonil and the aqueous, its metabolite SDS-3701. The sample is then methylated with diazomethane and cleaned up on an alumina column, eluting with dichloromethane. The organic and aqueous extracts were analysed by GC/ECD to determine residues of chlorothalonil and SDS-3701 respectively. The method was successfully validated (70–110% recovery, RSD < 20%) for both analytes for matrices with high water and high acid content.

Stability of residues in stored analytical samples

The Meeting received two additional studies on the storage stability to support the newly submitted supervised field trials not previously evaluated.

In the first study chlorothalonil and its metabolite SDS-3701 were proven to be stable for at least 24 months in stored samples of tomato, cucumber, melon, oranges, carrots (roots and tops), barley (grain and straw) and soya bean seeds.

In a second study cranberries fortified with chlorothalonil and SDS-3701 were analysed after 10 months. The stored triplicate samples indicated a significant decline with average recoveries of 63% of chlorothalonil and 38% of SDS-3701 remaining. The Meeting concluded that both analytes

may degrade in cranberries. Since no intermediate samples were analysed, no acceptable storage interval above one month could be identified by the Meeting.

Results of supervised residue trials on crops

The Meeting received supervised trial data for applications of chlorothalonil on various fruit and vegetable crops conducted in Brazil, Europe, Rep. of Korea and the USA.

Residues of SDS-3701 may potentially be taken up by succeeding crops after application of chlorothalonil in the previous year. For annual crops considered by this year, JMPR only estimated median and highest residue values following primary treatment, as these are intermediate values in the establishment of the final STMR and HR values which need to take into account the additional contribution by soil uptake; refer to the rotational crop section.

Pear

Chlorothalonil is registered in Rep. of Korea on pears at a rate of 4×0.04 kg ai/hL with a PHI of 14 days. Six supervised field trials from Rep. of Korea matching this GAP were submitted.

In the trials submitted samples were prepared for analysis by removal of the stem and the core, which were discarded before homogenisation. The Meeting concluded the sample preparation did not comply with the Codex Sampling Guideline, and would have had a significant influence on the residue concentration, making these trials unsuitable for the estimation of maximum residue levels or STMR and HR values.

Cherries

Chlorothalonil is registered in Canada on cherries with a rate of 3×4.5 kg ai/ha with a PHI of 40 days. Supervised field trials from the USA matching this GAP were submitted.

In cherries following treatment with chlorothalonil according to Canadian GAP, residues were (n=10): 0.04, 0.073, 0.12, 0.13, 0.28, 0.5, 0.74, 0.8, 1.2, 1.3 mg/kg.

The corresponding residues of SDS-3701 were (n=10): < 0.01(8), 0.011, 0.03 mg/kg

The Meeting estimated a maximum residue level, an STMR and an HR value of 3 mg/kg, 0.39 mg/kg and 1.8 mg/kg (based on a single highest field sample) for chlorothalonil in cherries, respectively.

For dietary intake purposes the Meeting also estimated an STMR of 0.01 mg/kg and an HR of 0.035 mg/kg (based on a single highest field sample) for SDS-3701 in cherries.

Peaches and nectarines (subgroup)

Chlorothalonil is registered in Canada on peaches and nectarins with a rate of 3×4.5 kg ai/ha with a PHI of 60 days. Supervised field trials from the USA matching the GAP were submitted.

In peaches following treatment with chlorothalonil according to Canadian GAP residues were (n=12): < 0.01, < 0.01, 0.01, 0.014, 0.063, 0.12, 0.12, 0.13, 0.18, 0.24, 0.3, 0.9 mg/kg.

The corresponding residues of SDS-3701 were (n=12): < 0.01(11), 0.01 mg/kg

The Meeting estimated a maximum residue level, an STMR and an HR value of 1.5 mg/kg, 0.12 mg/kg and 1.1 mg/kg (based on a single highest field sample) for chlorothalonil in peaches, respectively.

For dietary intake purposes the Meeting also estimated an STMR of 0.01 mg/kg and an HR of 0.011 mg/kg (based on a single highest field sample) for SDS-3701 in peaches (including nectarines and apricots).

Cranberry

Chlorothalonil is registered in Canada on cranberries with a rate of 3×5.5 kg ai/ha with a PHI of 50 days.

Supervised field trials from the USA matching the GAP were submitted; however supportive storage stability data indicated a substantial loss of residues after the seven month storage interval of the field samples. The Meeting concluded that the data could not be used for assessment.

Bulb onions

Chlorothalonil is registered in the USA on dry onions and shallots with a rate of 3×2.5 kg ai/ha with a PHI of 7 days. Supervised field trials from the USA matching this GAP were submitted.

In bulb onions following treatment with chlorothalonil according to USA GAP residues were (n=8): 0.068, 0.083, 0.22, 0.4, 0.4, 0.48, 0.56, 0.68 mg/kg.

The corresponding residues of SDS-3701 were (n=8): < 0.01(7), 0.026 mg/kg.

The Meeting estimated a maximum residue level, and STMR and an HR value of 1.5 mg/kg, 0.4 mg/kg and 0.69 mg/kg (based on a single highest field sample) for chlorothalonil in bulb onions, respectively.

For dietary intake purposes the Meeting also estimated a STMR of 0.01 mg/kg and an HR of 0.028 mg/kg (based on a single highest field sample) for SDS-3701 in bulb onions.

The Meeting agreed to extrapolate the results to shallots.

Green onions

Chlorothalonil is registered in the USA on green onions with a rate of 3×2.5 kg ai/ha with a PHI of 14 days.

Three supervised field trials from the USA matching the GAP application rate and PHI were submitted. However, one of these trials was conducted at a late growth stage of BBCH 49 which showed substantially higher residues (39 mg/kg) than the two other trials treated at BBCH 17–18 (0.29 mg/kg and 0.42 mg/kg).

The Meeting concluded that the total dataset available is inadequate and no recommendation on green onions can be made.

Peppers

Chlorothalonil is registered in Brazil on pepper with a rate of 2×0.2 kg ai/hL with a PHI of 7 days. Supervised field trials from Brazil matching this GAP were submitted to the 2010 Meeting and supported by additional trials this year.

Residues of chlorothalonil in peppers following treatment according to Brazilian GAP based on trials submitted to the 2010 JMPR were (n=4): 1.1, 1.5, 1.7 and 4.4 mg/kg.

Additional trials submitted this year on peppers gave chlorothalonil residues of (n=8): 0.15, 0.16, 0.22, 0.28, 0.44, 0.74, 1.9, 2.9 mg/kg

Total residues (2010+2015 data) in peppers following treatment according to Brazilian GAP were (n=12): 0.15, 0.16, 0.22, 0.28, 0.44, 0.74, 1.1, 1.5, 1.7, 1.9, 2.9 and 4.4 mg/kg.

The corresponding residues of SDS-3701 (when analysed) were (n=5): < 0.01(5) mg/kg.

In the USA chlorothalonil is registered on peppers with a rate of 8×1.3 kg ai/ha with a PHI of 3 days. Supervised field trials from the USA matching this GAP were submitted.

In bell peppers following treatment with chlorothalonil according to USA GAP residues were (n=8): 0.5, 0.76, 1.0, 1.4, 1.6, 1.7, 2.8, 2.9 mg/kg. The corresponding residues of SDS-3701 were (n=8): < 0.03(8) mg/kg.

In non-bell peppers following treatment with chlorothalonil according to USA GAP residues were (n=7): 0.26, 0.62, 0.62, 0.7, 1.0, 1.6, 1.6 mg/kg. The corresponding residues of SDS-3701 were (n=7): 0.029, < 0.03(6) mg/kg.

The Meeting recognized that chlorothalonil residues in peppers treated according to Brazilian GAP resulted in the highest residue and estimated a maximum residue level of 7 mg/kg based on this dataset for peppers.

For dietary intake purposes of chlorothalonil the Meeting concluded that the STMR value for bell peppers treated according to US GAP was higher than the STMR according to the Brazilian GAP. Since both GAPs were supported by a sufficient number of trial data, the higher STMR of 1.5 mg/kg was selected for dietary intake purposes. An HR of 4.4 mg/kg was estimated based on the Brazilian GAP.

Residues of SDS-3701 were generally below the LOQs of 0.01 mg/kg to 0.03 mg/kg except for one finite residue at 0.029 mg/kg. The Meeting estimated both an STMR and HR of 0.03 mg/kg for SDS-3701 in peppers based on the more critical US dataset.

For the extrapolation from sweet pepper to dried chili pepper a default processing factor of 10 was taken into account. The Meeting estimated a maximum residue level of 70 mg/kg for chlorothalonil in dried chili pepper as wells as a STMR of 15 mg/kg and a HR of 44 mg/kg. For SDS-3701 both a STMR and HR of 0.3 mg/kg were estimated.

Tomato

Chlorothalonil is registered in Poland on tomatoes under protected conditions with a rate of 2 × 0.1 kg ai/hL (up to 1 kg ai/ha per application) with a PHI of 3 days. Protected supervised field trials on cherry tomatoes from various European countries approximating the GAP but with higher spray concentrations of 0.13 kg ai/hL to 0.2 kg ai/hL were submitted.

Compared to the Polish GAP all supervised field trials involved treatment at exaggerated spray concentrations, however the rates applied approximate the GAP maximum of 1 kg ai/ha and application. Since in the field trials submitted tomatoes were cultivated as high crops, the Meeting concluded that the spray concentration is the most sensitive parameter in terms of residues and decided to use the proportionality approach based on the spray concentration.

In protected tomatoes following treatment with 0.13 kg ai/hL (scaling factor 0.77) chlorothalonil residues were 0.45 mg/kg (0.77×0.59 mg/kg) and SDS-3701 residues were < 0.01 mg/kg (unscaled).

In protected tomatoes following treatment with 0.17 kg ai/hL (scaling factor 0.59) chlorothalonil residues were 0.94, 1.1, 1.8 mg/kg (0.59×1.6, 1.8 and 3.1 mg/kg) and SDS-3701 residues were 0.006, 0.012, 0.024 mg/kg (0.59×0.01, 0.02 and 0.04 mg/kg).

In protected tomatoes following treatment with 0.2 kg ai/hL (scaling factor 0.5) chlorothalonil residues were 0.5, 1.1, 1.7, 2.8 mg/kg (0.5×0.99, 2.2, 3.4 and 5.5 mg/kg) and SDS-3701 residues were 0.005, 0.015, 0.015, 0.035 mg/kg (0.5×0.01, 0.03, 0.03 and 0.07 mg/kg).

Total scaled residues of chlorothalonil were (n=8): 0.45, 0.5, 0.94, 1.1, 1.1, 1.7, 1.8 and 2.8 mg/kg

Total scaled residues of SDS-3701 were (n=8): 0.005, 0.006, < 0.01, 0.012, 0.015, 0.015, 0.024 and 0.035 mg/kg

The Meeting estimated a maximum residue level, an STMR and an HR value of 5 mg/kg, 1.1 mg/kg and 2.8 mg/kg for chlorothalonil in tomatoes, respectively.

For dietary intake purposes the Meeting also estimated a STMR of 0.0135 mg/kg and an HR of 0.035 mg/kg for SDS-3701 in tomatoes.

Mushroom

Chlorothalonil is registered in the USA on mushrooms for soil drench application with a rate of 12.7 kg ai/ha as a first treatment followed by 6.4 kg ai/ha as second treatment with a PHI of 7 days. Supervised field trials from the USA matching the GAP were submitted.

In mushrooms following treatment with chlorothalonil according to USA GAP residues were (n=2): 0.09, 0.43 mg/kg.

The corresponding residues of SDS-3701 were (n=2): < 0.01, 0.16 mg/kg.

The Meeting concluded that the data submitted for mushroom was insufficient upon which to make recommendations.

Ginseng

Chlorothalonil is registered in the USA on ginseng with a rate of 8×1.7 kg ai/ha with a PHI of 14 days. Supervised field trials from the USA matching the GAP were submitted.

In ginseng roots (washed and dried) following treatment with chlorothalonil according to USA GAP residues were (n=3): 0.19, 0.35, 0.78 mg/kg.

The corresponding residues of SDS-3701 were (n=3): 0.19, 0.3, 0.61 mg/kg.

The Meeting estimated a maximum residue level, and STMR and an HR value of 2 mg/kg, 0.35 mg/kg and 1.0 mg/kg (based on a single highest field sample) for chlorothalonil in dried ginseng (including red ginseng), respectively.

For dietary intake purposes the Meeting also estimated an STMR of 0.3 mg/kg and an HR of 0.61 mg/kg (based on a single highest field sample) for SDS-3701 in dried ginseng (including red ginseng).

Horseradish

Chlorothalonil is registered in the USA on horseradish with a rate of 8×2.5 kg ai/ha with a PHI of 14 days. Supervised field trials from the USA matching this GAP were submitted.

In horseradish roots following treatment with chlorothalonil according to USA GAP residues were (n=3): 0.031, 0.25, 0.38 mg/kg.

The corresponding residues of SDS-3701 were (n=3): 0.027, 0.14, 0.25 mg/kg.

The Meeting estimated a maximum residue level, an STMR and an HR value of 1 mg/kg, 0.25 mg/kg and 0.48 mg/kg (based on a single highest field sample) for chlorothalonil in horseradish, respectively.

For dietary intake purposes the Meeting also estimated an STMR of 0.14 mg/kg and an HR of 0.28 mg/kg (based on a single highest field sample) for SDS-3701 in horseradish.

Root and tuber vegetables, except horseradish

In 2010 the Meeting recommended a maximum residue level for root and tuber vegetables of 0.3 mg/kg. Due to the higher maximum residue level of 1 mg/kg for chlorothalonil in horseradish, the Meeting decided to exclude horseradish from the group maximum residue level.

The Meeting estimated a maximum residue level of 0.3 mg/kg for root and tuber vegetables, except horseradish. In 2010 the Meeting decided to accommodate for the uncertainty involved with the residue data by basing the dietary risk assessment (chronic and acute) on the maximum residue level also.

The Meeting withdraws its previous recommendation of 0.3 mg/kg for chlorothalonil in root and tuber vegetables.

Asparagus

Chlorothalonil is registered in the USA on asparagus with a rate of 3×3.4 kg ai/ha applied after harvest to the fern with a PHI of 190 days. Supervised field trials from the USA matching the GAP were submitted.

In asparagus spears following treatment with chlorothalonil according to USA GAP residues were (n=8): < 0.01(8) mg/kg.

The corresponding residues of SDS-3701 were (n=8): < 0.01(8) mg/kg.

The Meeting estimated a maximum residue level of 0.01* mg/kg for chlorothalonil in asparagus.

For dietary intake purposes the Meeting concluded that the application of chlorothalonil after harvest to the fern does not lead to significant residues in asparagus spears in the next growing season. Therefore the STMR and HR for both chlorothalonil and SDS-3701 were estimated at 0 mg/kg, although no trials conducted at exaggerated rates were submitted.

Rhubarb

Chlorothalonil is registered in the USA on rhubarb with a rate of 6×2.5 kg ai/ha with a PHI of 30 days. Supervised field trials from the USA matching this GAP were submitted.

In rhubarb stalks following treatment with chlorothalonil according to USA GAP residues were (n=3): 0.39, 0.55, 2.8 mg/kg.

The corresponding residues of SDS-3701 were (n=3): < 0.02(3) mg/kg.

The Meeting estimated a maximum residue level, an STMR and an HR value of 7 mg/kg, 0.55 mg/kg and 3.9 mg/kg (based on a single highest field sample) for chlorothalonil in rhubarb, respectively.

For dietary intake purposes the Meeting also estimated an STMR and an HR of 0.02 mg/kg for SDS-3701 in rhubarb.

Pistachio nut

Chlorothalonil is registered in the USA on pistachio nuts with a rate of 5×5.0 kg ai/ha and a PHI of 14 days. Supervised field trials from the USA matching the GAP were submitted.

In pistachio nutmeat following treatment with chlorothalonil according to USA GAP residues were (n=3): < 0.01, 0.082, 0.11 mg/kg.

The corresponding residues of SDS-3701 were (n=3): < 0.01(3) mg/kg.

The Meeting estimated a maximum residue level, an STMR and an HR value of 0.3 mg/kg, 0.082 mg/kg and 0.14 mg/kg (based on a single highest field sample) for chlorothalonil in pistachios, respectively.

For dietary intake purposes the Meeting also estimated an STMR and an HR of 0.01 mg/kg for SDS-3701 in pistachios.

Residues in rotational crops

Following application of chlorothalonil the major metabolite SDS-3701 has a potential to be taken up by succeeding crops. However, the additional uses evaluated by this JMPR either involve treatment of permanent crops not being subject to crop rotation or their total seasonal rate is lower than the maximum seasonal rate of 20 kg ai/ha used in 2010 to estimate residues in rotational crops. The Meeting concluded that the assessment of SDS-3701 residues in rotational crops, as evaluated in 2010, also covers uses evaluated this year.

For primary uses evaluated this year on crops being subject to crop rotation, the Meeting decided to take into account the soil uptake of SDS-370 on crop residues. STMR and HR values

following direct treatment were added to the corresponding values estimated for rotational crops to address the potential use of chlorothalonil in previous years.

For bulb onions and shallots STMR and HR values of 0.01 mg/kg and 0.028 mg/kg were identified after treatment according to current GAP. In 2010 STMR and HR values of 0.01 mg/kg and 0.04 mg/kg were estimated for SDS-3701 in rotated bulb vegetables. For the dietary intake assessment the Meeting estimated overall STMR and HR values of 0.02 mg/kg and 0.068 mg/kg, respectively.

In peppers grown as rotational crop (see fruiting vegetables) the 2010 Meeting estimated an STMR and an HR value of 0.015 mg/kg and 0.06 mg/kg for SDS-3701, respectively. The current Meeting evaluated uses on peppers (STMR and HR: 0.03 mg/kg each) and estimated overall STMR and HR-values of 0.045 mg/kg and 0.09 mg/kg. For dried chili pepper a default processing factor of 10 was applied, resulting in STMR and HR values of 0.45 mg/kg and 0.9 mg/kg for SDS-3701.

Uses on tomatoes evaluated by the current Meeting are only related to protected conditions and therefore not subject to crop rotation.

In horseradish grown as rotational crop (see root and tuber vegetables) the 2010 Meeting estimated an STMR and an HR value of 0.02 mg/kg and 0.03 mg/kg for SDS-3701, respectively. The current Meeting evaluated uses on horseradish (STMR: 0.14 mg/kg and HR: 0.28 mg/kg) and estimated overall STMR and HR-values of 0.16 mg/kg and 0.31 mg/kg for SDS-3701.

Asparagus, cherries, ginseng, peaches, pistachio nuts and protected tomatoes were not considered relevant in terms of residues derived from crop rotation.

Fate of residues during processing

In 2010 the JMPR Meeting concluded that under simulated processing conditions in sterile buffer solutions at pH 4 chlorothalonil residues were relatively stable with > 90% remaining at 90 °C and 73% remaining at 120 °C. At pH 5 and 100 °C a moderate degradation was observed in all samples, leaving approx. 80% of the initial chlorothalonil. The major degradation product was identified as SDS-3701 at 19% of the initial residue. For pH6 at 120 °C chlorothalonil is quickly degraded. Under addition of a sodium acetate buffer, less than 4% of the chlorothalonil remained. Main degradation products were SDS-3701 (48%) and an artefact (28%, identified as 4-amino-2,5,6-trichloroisophthalonitrile). In sterile water without buffer approx. 26% of the chlorothalonil remained. SDS-3701 constituted 59% of the residue while there was no formation of the artefact.

In contrast to the results obtained from sterile buffer solutions processing studies involving background matrices gave much lower levels of SDS-3701 after processing. The 2010 Meeting decided that besides the normal processing factors for chlorothalonil, yield factors for the conversion of parent substance into SDS-3701 should be taken into account for the estimation of the dietary intake. Depending on the outcome, the higher processing factor of SDS-3701 → SDS-3701 or chlorothalonil → SDS-3701 is used for the overall estimation of STMR-P and HR-P for SDS-3701 in the processed product.

Raw commodity (chlorothalonil)	Processed commodity	Chlorothalonil → Chlorothalonil (see 2010 JMPR Evaluation)		
		Individual processing factors	Mean or best estimate processing factor	STMR-P in mg/kg
Tomato (STMR: 1.1 mg/kg)	Juice, raw	0.3	See juice, bottled	See juice, bottled
	Juice, bottled	0.09, 0.1, 0.11, 0.13	0.1	0.11
	Puree	<0.01(4)	0.01	0.011
	Canned/preserve	<0.01(4)	0.01	0.011
	pomace, wet	0.01, 0.32	See pomace, dry	See pomace, dry
	pomace, dry	1.0, 1.3, 1.3, 1.4	1.3	1.4

Raw commodity (SDS-3701)	Processed commodity	SDS-3701 → SDS-3701 (see 2010 JMPR Evaluation)		
		Individual processing factors	Mean or best estimate processing factor	STMR-P in mg/kg

Tomato (STMR: 0.0135 mg/kg)	Juice, raw	0.5	See juice, bottled	See juice, bottled
	Juice, bottled	1.0, 1.0, 1.0, 1.5	1.0	0.0135
	Puree	5.5, 6, 6.5, 7.5	6.3	0.085
	Canned/preserve	1.0, 2.0, 2.0, 2.5	2.0	0.027
	pomace, wet	1.5, 19	See pomace, dry	See pomace, dry
	pomace, dry	13, 14, 16, 18	15	0.2

Raw commodity (chlorothalonil)	Processed commodity	Chlorothalonil → SDS-3701 (see 2010 JMPR Evaluation)		
		Individual processing factors	Mean or best estimate processing factor	STMR-P in mg/kg
Tomato (STMR: 1.1 mg/kg)	Juice, raw	0.001	See juice, bottled	See juice, bottled
	Juice, bottled	0.002(4)	0.002	0.0022
	Puree	0.01(3), 0.02	0.01	0.011
	Canned/preserve	0.002, 0.004, 0.004, 0.005	0.004	0.0044
	pomace, wet	0.003, 0.04	See pomace, dry	See pomace, dry
	pomace, dry	0.03(3), 0.04	0.03	0.033

For chlorothalonil in processed tomato products, based on an STMR value of 1.1 mg/kg, the Meeting estimated STMR-P values of 0.11 mg/kg for tomato juice, 0.011 mg/kg for tomato puree and canned tomatoes and 1.4 mg/kg for tomato dry pomace.

For SDS-3701, based on processing factor from SDS-3701 → SDS-3701 and an STMR value of 0.0135 mg/kg, the Meeting estimated STMR-P values of 0.0135 mg/kg for tomato juice, 0.085 mg/kg for tomato puree, 0.027 mg/kg for canned tomatoes and 0.2 mg/kg for tomato dry pomace.

Residues in animal commodities

For all uses under evaluation in this JMPR for chlorothalonil only tomato pomace was identified as a relevant feed item to livestock animals. Since residues in tomato pomace in the dietary feed burden are superseded by residues of grape pomace being in the same Codex feed item group, no increase in the dietary burden for SDS-3701 by the uses evaluated this year compared to 2010 can be expected.

RECOMMENDATIONS

The Meeting estimated the STMR, HR and MRL values shown in Annex 1.

Definition of the residue for compliance with MRL for plant commodities: *chlorothalonil*

Definition of the residue for estimation of dietary intake for plant commodities: chlorothalonil SDS-3701 (2,5,6-trichloro-4-hydroxyisophthalonitrile), all considered separately.

Definition of the residue for compliance with MRL and for estimation of dietary intake for animal commodities: *SDS-3701 (2,5,6-trichloro-4-hydroxyisophthalonitrile)*.

The residue was considered as not fat-soluble.

DIETARY RISK ASSESSMENT

Long-term intake

The evaluation of chlorothalonil has resulted in recommendations for MRLs and STMRs for raw and processed commodities. The International Estimated Daily Intakes for the 17 GEMS/Food cluster diets, based on this years estimated STMRs and previous STMRs from 2010 and 2012 were in the range 10–50% of the maximum ADI of 0.02 mg/kg bw.

The evaluation of SDS-3701 has resulted in recommendations for STMRs for raw and processed commodities following primary treatment and after uptake from soil as rotational crop. The International Estimated Daily Intakes for the 17 GEMS/Food cluster diets, based on this years

estimated STMRs and previous STMRs from 2010 and 2012 were in the range 4–10% of the maximum ADI of 0.008 mg/kg bw.

The results are shown in Annex 3 to the 2015 Report.

The Meeting concluded that the long-term intake of residues of chlorothalonil and its metabolite SDS-3701, from uses that have been considered by the JMPR, is unlikely to present a public health concern.

Short-term intake

The International Estimated Short Term Intake (IESTI) for chlorothalonil and its metabolite SDS-3701 were separately calculated for the plant and livestock commodities (and their processing fractions) for which new STMRs and HRs were estimated and for which consumption data were available. The results are shown in Annex 4 to the 2015 Report.

The IESTI for chlorothalonil varied from 0–30% of the ARfD (0.6 mg/kg bw) and the IESTI for its metabolite SDS-3701 from 0–10% of the ARfD (0.03 mg/kg bw). The Meeting concluded that the short-term intake of residues of chlorothalonil and SDS-3701, from uses that have been considered by the JMPR, is unlikely to present a public health concern.

Livestock animal dietary burden

Not necessary