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MINISTÉRIO DA AGRICULTURA DO DESENVOLVIMENTO RURAL E DAS PESCAS  
DIRECÇÃO-GERAL DE PROTECÇÃO DAS CULTURAS

**Report prepared in the context of the application for first inclusion of  
dodine in Annex I of the Council Directive 91/414/EEC**

**DODINE**

**Volume 3-3**

**Annex B**

**Section B7**

**Summary, evaluation and assessments of the data.**

**List of tests and studies relied upon**

WARNING: This document forms part of an EC evaluation data package and should not be read in isolation. Registration must not be granted on the basis of this document.

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## B.7 Residue data

### B.7.1 Metabolism, distribution and expression of residues in plants (Annex IIA 6.1 and Annex IIIA 8.1).

Three metabolism studies have been submitted: on apples, strawberries and pecans, representing the fruit crop group.

#### B.7.1.1 Apples

##### A metabolism study with [ $^{14}\text{C}$ ]-Dodine on apples

Mohseni R., Ewing A. et al. (1992)

##### Guidelines

FIFRA O-171-4

##### GLP

In compliance with GLP.

This study is acceptable.

##### Materials and methods

Test material: ISO common name: dodine; IUPAC name: 1-dodecylguanidinium acetate; radio labelled technical substance: batch 910225 (supplied by American Radiolabeled Chemicals ARC), radiochemical purity > 98.6%, cold material: batch number FF 1/88, purity: 99.8%; crop tested: Apple (*Pyrus malus*, Red delicious variety) in a small orchard located at Watsonville (California).

The goals of the study were to ascertain the nature and quantity of the residues from dodine in the rinsates (water only) from treated apples, and in apple peel and apple pulp, and the second was to study the degree of translocation of dodine in apple trees.  $^{14}\text{C}$ -dodine was applied 3 times by manual sprayer until run-off to two trees as a 65 WP formulation at a rate of 0.108 kg a.s./hl. The first application was carried out at bud break, the second at immature fruit stage, and the last seven days before final harvest of mature apples.

Fruit samples were collected prior to both the second and third applications from both the control and  $^{14}\text{C}$ -dodine treated trees. All remaining fruits were harvested seven days following the third application. Whole apples were rinsed with water at the field site and the resulting rinsate transported to the laboratory. Apples were also peeled and the peel and pulp transported to the laboratory. One branch on each of the  $^{14}\text{C}$ -tree was designated for determination of the translocation of  $^{14}\text{C}$ -dodine and degradates. This branch remained untreated throughout the study and tightly covered during each application. Samples of leaves and apples were collected from these branches at the first and last sampling points.

##### Findings

The Total Radioactive residues (TRR) derived from  $^{14}\text{C}$ -dodine in the fruits of the first harvest [immature apples (pulp + peel)] collected 141 days after the first application of  $^{14}\text{C}$ -dodine, i.e. immediately before the second application, was <0.01 ppm. A negligible amount of radioactivity was found in the rinse. In contrast, the fruits of the second harvest, collected 33 days after the second application and immediately before the third application, and fruits of the final harvest, collected 7 days after the third application, contained higher levels, each around 1.5 ppm. In both cases, 82-83% of the radiocarbon was in the apple peel, 5-7% in the pulp and 10-12% in the water rinses. (Table B.7-1)

**Table B.7-1 – Total radioactive residues (ppm on fresh weight of whole apples expressed in dodine equiv.) in rinsates and apple parts**

Matrix	1st harvest* ppm (% TRR)	2nd harvest** ppm (% TRR)	3rd harvest*** ppm (% TRR)
Apple rinse	0.0002 (2.0)	0.1535 (10.5)	0.1804 (12.0)
Apple peel	0.0033 (33.7)	1.2151 (83.0)	1.2409 (82.3)
Apple pulp	0.0063 (64.3)	0.0961 (6.6)	0.0864 (5.7)
Total apple residues	0.0098	1.4647	1.5077

\*just before second application, immature apples, \*\* just before 3<sup>rd</sup> application, immature apples, \*\*\* 7 days after 3<sup>rd</sup> application, mature apples

The extractability data of radiocarbon from apple peel and pulp are presented in the next table (B.7-2). The extraction method was relatively mild (acetonitrile:aqueous 1N HCl, 1:1, v:v) and for the second and third harvests, >94% of the radiocarbon was extracted from both matrices. For the first harvest, > 95% extractability was noted for the apple peel and approx. 80% for the pulp; both the extracted and unextracted residues are at very low levels (<0.006 and <0.001ppm respectively). The accountability of the radiocarbon ranged from 99-126% for the second and third harvest samples and from 94-115% for the first one.

**Table B.7-2 – Extractability of total radiocarbon from <sup>14</sup>C-dodine treated apples**

Matrix	ppm*	% extracted (ppm)	% unextracted (ppm)	Total recovery (%)
1st harvest				
Apple peel	0.0033	95.46 (0.0032)	19.69 (0.0006)	115.15
Apple pulp	0.0063	80.35 (0.0051)	14.11 (0.0009)	94.46
2nd harvest				
Apple peel	1.2151	94.24 (1.1451)	9.32 (0.1133)	103.56
Apple pulp	0.0961	122.25 (0.1175)	3.98 (0.0038)	126.23
3rd harvest				
Apple peel	1.2409	95.37 (1.1834)	4.22 (0.0524)	99.59
Apple pulp	0.0864	97.69 (0.0844)	3.27 (0.0028)	100.96

\* see table B.7-1

The apple rinse and the apple peel and pulp from the first harvest of immature fruits were not further analyzed since the levels of radiocarbon were very low (<0.01 ppm in each case). For the apple rinses of both the second and third harvest samples, 2D TLC radio chromatograms indicated a single radioactive component which co-chromatographed with dodine. These results suggest that very little degradation of dodine occurs through environmental exposure or that if degradation does occur, the degradates do not remain on the external surface of the fruits.

The apple pulp samples were analyzed by HPLC. Dodine was shown to be the major component approx 70-80%. The remainder of the radioactivity was distributed between several minor components. For the second harvest sample (immature fruits), one unknown was found at 0.017 ppm but this material was not apparent at this level in the corresponding third harvest samples (mature fruits) in which no components representing ≥ 0.01ppm were found. (Table B.7-3)

The highest residue levels were found in the apple peel. In the apple peel sample, from the second harvest (immature fruit), one minor component occurred at 0.07 ppm, eight components between 0.01 and 0.05 ppm and two at < 0.01 ppm. All were more polar than dodine but none occurred at the solvent front. In the third harvest apple peel (mature fruit), 26 components were seen with dodine accounting for approx. 90% of the radioactivity, one (designated as Metabolite A and tentatively identified by HPLC as the <sup>14</sup>C-guanidine moiety) was present at 0.017 ppm and the remaining 24 were all <0.01 ppm. It is noteworthy on comparing the different harvest data that the

## Dodine – Annex B – Residues

complexity of the metabolite pattern increased with time suggesting that minor amounts of radiocarbon are incorporated into a variety of natural products. The distribution of components is indicated in the following table:

**Table B.7-3 – Anticipated distribution of radioactivity as dodine and other components in apples treated with  $^{14}\text{C}$ -dodine (rate of application of 0.108 kg/hl)**

Matrix	Dodine	Other components		
	ppm (%)	> 0.05 ppm	0.01 ppm to 0.05 ppm	<0.01 ppm
2nd harvest*				
Rinse	0.176	None	None	None
Apple pulp	0.085 (71.99)	None	1(0.017ppm)	2
Apple peel	0.884 (78.05)	1(0.07)	8	2
3rd harvest**				
Rinse	0.192	None	None	None
Apple pulp	0.068 (80.59)	None	None	4
Apple peel	1.055 (89.21)	None	1(0.017ppm)	24

\* just before 3<sup>rd</sup> application, immature apples, \*\* 7 days after 3<sup>rd</sup> application, mature apples

In the design of the study, one branch from each treated tree was designated for determination of the degree of translocation of dodine and its degradates. Analyses of the rinses from samples of apples and leaves showed very low levels of radiocarbon suggesting that little spray drift occurred and that the branches were not contaminated during application. Combustion analysis of leaves gave higher values 0.023 and 0.052 ppm for the two trees respectively but data for apple peel and pulp were all <0.01 ppm suggesting that translocation does not occur to any significant degree.

### Conclusions

Two apple trees were treated 3 times during the growing season with  $^{14}\text{C}$ -dodine at a rate of 0.108 kg a.s./hl (the normal dose is from 0.045-0.18 kg a.s./hl) until runoff. Radiocarbon levels at first immature harvest (rinse, apple peel and apple pulp) were all <0.01 ppm following one treatment early in the season (bud break). After additional treatments later in the season, residue levels in the samples from the second (immature) and third (mature) harvests were higher but in all cases dodine accounted for the majority (72 to 89%). In the mature samples, several metabolites were observed however all below 0.01ppm except one metabolite (tentatively assigned as guanidine) found at 0.017 ppm in apple peel. Analysis of apples taken from the parts of the test trees which were not treated indicated that translocation did not occur to any significant degree.

### B.7.1.2 Strawberries

#### A metabolism study with [ $^{14}\text{C}$ ]-Dodine on strawberries

Mohseni R., Kimmel E.C. et al. (1993)

#### Guidelines

EFRA O-171-4

#### GLP

In compliance with GLP.

This study is acceptable.

#### Materials and methods

Test material: ISO common name: dodine; IUPAC name: 1-dodecylguanidinium acetate; radio labelled technical substance: batch 910225 (supplied by American Radiolabeled Chemicals ARC), radiochemical purity > 98.6%, cold material: batch number FF 1/88, purity: 99.8%, crop tested: strawberry (*Fragaria ananassa*, Selva variety), located at Watsonville (California). The goals of this study were to ascertain the nature and quantity of the residues from dodine in the rinsates (water only) from treated strawberries, and in the strawberries themselves, and to study the degree of translocation of dodine in strawberry plants. <sup>14</sup>C-dodine was applied 4 times by manual sprayer until run-off to 18 strawberry plants as a 65 WP formulation at a rate of 3kg a.s./ha (2.7 lb a.s./acre). This rate of application is twice (2x) the maximum US label rate for a single application. This may reflect the maximum number of field applications (8). The first application was carried out in May on young plants by spraying all plants (foliage, flowers and any small strawberries which were present), the second, one month later in June at immature fruit stage, the third, 3 weeks later, end of June, when mature fruits were available and the last one, 6 weeks later, in August.

Fruit samples (green and red ones) and one untreated runner were collected prior the second application. Mature fruits and untreated runners were harvested 14 days after the second, third and fourth applications. Strawberries were rinsed with water at the time of harvest and transported, together with the resulting rinsate, to the laboratory for analysis. In order to study the translocation of dodine into untreated part of the plant, runners were protected from spray and harvested at several time points during the season.

#### Findings

The TRRs in the strawberries at the four harvest times i.e. collected 28 days after the first application, 14 days after the second application, 14 days after the third application, and 14 days after the final application, were all of the same order of magnitude: the TRR was around 4 to 7 ppm with approx. 95% in the rinsed strawberries and up to 5% in the rinsates. The TRRs in the strawberry runners in contrast to the TRRs in the strawberries, show an increase with time. They range from 0.124 ppm in the first harvest runners to 0.841 ppm in the fourth harvest runners. Since the runners were protected during each application, and were subsequently taped to the outside of the box to prevent them from coming into contact with the treated parts of the plant, these data indicate that translocation of radiocarbon into the rapidly growing parts of the plant did occur. (Table B.7-4)



**Table B.7-4 – Total radioactive residues (ppm on fresh weight expressed in dodine equiv.) in rinsates and rinsed strawberries.**

<b>Matrix</b>	<b>1st harvest<sup>(1)</sup> ppm (% TRR)</b>	<b>2nd harvest<sup>(2)</sup> ppm (% TRR)</b>	<b>3rd harvest<sup>(3)</sup> ppm (% TRR)</b>	<b>4th harvest<sup>(4)</sup> ppm (% TRR)</b>
Rinse	0.0160 (0.34)	0.3671 (5.27)	0.2131 (3.15)	0.1087 (2.54)
Strawberries	4.6452 (99.7)	6.6007 (94.7)	6.5456 (96.8)	4.1680 (97.5)
Total strawberries residues	4.6612	6.9678	6.7587	4.2767
Runners	0.124	0.412	0.334	0.841

<sup>(1)</sup> 28 days after the 1<sup>st</sup> application of <sup>14</sup>C-dodine; <sup>(2)</sup> 14 days after the 2<sup>nd</sup> application of <sup>14</sup>C-dodine; <sup>(3)</sup> 14 days after the 3<sup>rd</sup> application of <sup>14</sup>C-dodine; <sup>(4)</sup> 14 days after the 4<sup>th</sup> application of <sup>14</sup>C-dodine

The extractability data of radiocarbon from strawberries are presented in the next table (B.7-5). The extraction method was relatively mild (acetonitrile:aqueous 1N HCl, 1:1, v:v) but in all cases the extraction efficiencies were greater than 89% and the average value was approx. 101%. Overall accountabilities of radiocarbon (i.e. the sum of the extracted and unextracted radiocarbon) ranged from 90.79% to 113.77%. The level of the unextracted residues remained fairly constant with time and did not increase in the later harvest samples. The unextracted <sup>14</sup>C residues ranges from approx. 0.9% to 3%.

**Table B.7-5 – Extractability of total radiocarbon from <sup>14</sup>C-dodine treated strawberries**

<b>Matrix</b>	<b>ppm*</b>	<b>% extracted (ppm)</b>	<b>% unextracted (ppm)</b>	<b>Total recovery (%)</b>
1st harvest Replicate 1	4.6452	89.12 (4.1421)	1.68 (0.0780)	90.79
Replicate 2**	4.6452	91.06 (4.2297)	3.17 (0.1472)	94.23
2nd harvest Replicate 1**	6.6007	99.84 (6.5901)	0.85 (0.0563)	100.69
Replicate 2	6.6007	104.03 (6.8667)	1.83 (0.1208)	105.86
3rd harvest Replicate 1	6.5456	111.01 (7.2008)	2.76 (0.01807)	113.77
Replicate 2**	6.5456	110.45 (7.2297)	2.72 (0.1778)	113.77
3rd harvest Replicate 1**	4.1680	101.15 (4.2160)	2.03 (0.0848)	103.18
Replicate 2	4.1680	99.77 (4.1584)	1.71 (0.0713)	101.48
Replicate 3	4.1680	97.80 (4.0763)	1.44 (0.0060)	99.24

\* see 7.4; \*\* used for HPLC analysis

For the first harvest strawberry rinse, HPLC analysis indicated 25 metabolites but each was present at less than 0.01 ppm. In contrast to the first harvest rinse, the other rinses contained dodine as the major component (from 55% to 77% of the <sup>14</sup>C). In each case, the remaining radioactivity was distributed into at least 9 minor components ranging from 0.01 ppm to 0.03 ppm max for each of them. These rinses were also subjected to TLC. TLC results, when taken in conjunction with the HPLC data, suggest that the non-dodine radioactivity is distributed among numerous minor components.

## Dodine – Annex B – Residues

The extracts of the strawberries from the four harvests were analyzed by HPLC. For the first, second, third, and fourth harvest extracts, respectively, dodine accounted for 3.776 ppm (89.28%), 5.892 ppm (89.41%), 6.169 ppm (85.33%), and 3.645 ppm (86.46%) of the extracted radiocarbon. Extracts were also analyzed by TLC and this confirmed that dodine was the major component. (Table B.7-6)

Further work was done in order to characterize the remaining radioactivity. The increased resolution allowed some of the broad areas of radiocarbon to be seen as being composed of many minor peaks. If cleavage of the dodecyl chain from the guanidine moiety does not occur, then there are many sites in the dodecyl chain where oxidation may occur, and all of these would give rise to discrete metabolites. Multiple oxidations are also possible. Oxidation products of this nature would be expected to be slightly more polar than dodine, but the polarity changes would only be small. This rationale count account, at least in part, for the broad smears of radiocarbon that are noted in the reconstructed radio chromatograms. On the other hand, if oxidation should lead to cleavage of the dodecyl chain from the guanidine moiety, then the  $^{14}\text{C}$  in that moiety would enter the carbon pool in the plant and would therefore appear in a plethora of natural products. On the basis of its chemical structure, dodine is anticipated to be susceptible to ready oxidation in the dodecyl substituent. In particular, oxidation at C-1 of this chain would lead to an unstable derivative which would spontaneously decompose to liberate guanidine. In turn, N-oxidation of guanidine would produce urea and could be considered as a detoxification mechanism since urea is widely used as fertilizer. Since the radiolabel in the  $^{14}\text{C}$ -dodine is in the guanidine carbon atom, this metabolic route would account for the incorporation of the radiolabel into multiple natural products, from both primary and secondary metabolism. In view of the above, attempts were made to verify the presence of urea and guanidine. The presence of urea and guanidine was effectively confirmed during these analyses at low level since both compounds do not build up and could only be a very minor metabolite in treated strawberries.

**Table B.7-6 – Distribution of radioactivity as dodine and other components in rinses and in strawberries treated with  $^{14}\text{C}$ -dodine at 3 kga.s./ha (4 treatments)**

Matrix	Dodine	Other components		
	ppm (%)	> 0.05 ppm	0.01 ppm to 0.05 ppm	<0.01 ppm
1st harvest				
Rinse	0 (0)	None	None	25
Strawberry	3.7763 (89.28)	3	4	4
2nd harvest				
Rinse	0.2835 (77.22)	None	3	6
Strawberry	5.8922 (89.41)	5	9	1
3rd harvest				
Rinse	0.1318 (61.86)	None	3	7
Strawberry	6.1691 (85.33)	8 (none)*	5 (8) *	none (33) *
4th harvest				
Rinse	0.0604 (55.55)	None	2	7
Strawberry	3.6452 (86.46)	2 (1) *	9 (14) *	4 (7) *

\* numbers of components in parentheses are obtained from the partial radio chromatograms generated with enhanced resolution by collection of smaller fractions

Since the fourth harvest runner samples contained 0.841 ppm radiocarbon, they were extracted and analysed. In contrast to the situation with the strawberries or their rinses, dodine was a relatively minor component (approx 10% of the radioactivity). By TLC, the only region of radioactivity directly observable corresponded with that of urea, suggesting that this component was the major metabolite in runners and strawberries. This metabolite appears to be much more readily translocated than dodine.

### Conclusion

Strawberry plants were treated 4 times during the growing season with  $^{14}\text{C}$ -dodine at an exaggerated rate (3 kg a.s./ha). Radioactivity was not readily removed from these berries with water because less than 6% was found in the rinses. Most of the radioactivity in strawberries was  $^{14}\text{C}$ -dodine itself (85-89% of the radioactivity). No major metabolite was found, though urea and guanidine were identified as metabolites. Urea would arise from dodine via dealkylation and oxidation. It did not build up in strawberries. Knowing the biochemistry of urea and guanidine, the  $^{14}\text{C}$  in the guanidine moiety of dodine must have been partially incorporated into natural products. The formation of either urea or guanidine from dodine is a slow process, whereas the subsequent breakdown of urea and guanidine is fast. Translocation of radioactivity into the runners occurred mainly under the urea form. Dodine itself was a minor component (approx 10%) in the runner.

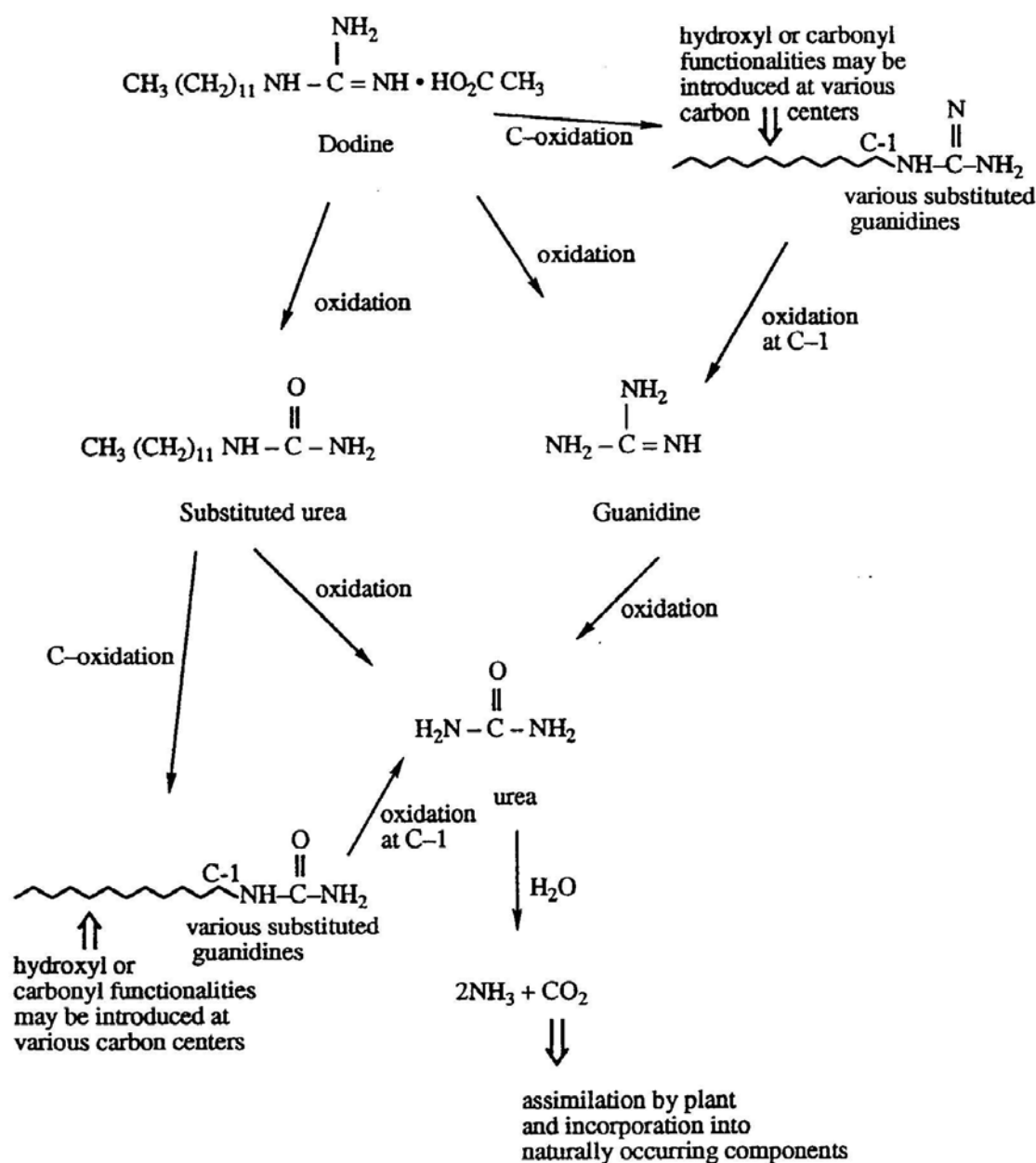


Figure 1 - Proposed metabolic pathway in strawberries

### B.7.1.3 Pecans

#### A metabolism study with [<sup>14</sup>C]-Dodine on pecans.

Baker F., McKemie D., Kimmel E.C. (1998)

#### Guidelines

EPA Guidelines OPPTS 860.1300

#### GLP

In compliance with GLP.

This study is acceptable.

#### Materials and methods

Test material: ISO common name: dodine; IUPAC name: 1-dodecylguanidinium acetate; radio labelled technical substance: batch 960806 (supplied by American Radiolabeled Chemicals ARC), radiochemical purity: from 94.6 to 98.0% depending on application time, cold material: batch number EA840SD2, purity: 100%; crop tested: Pecan tree (*Carya illinoensis*, Wichita variety), located in a commercial orchard in Madera (California). The goal of this study was determine the nature and quantity of the residues from dodine in pecans (nutmeat). <sup>14</sup>C-dodine was applied 3 times by manual sprayer until run-off to the immature nuts and surrounding foliage of two 8 meters height pecan trees as a 65 WP formulation at a rate of 0.2 kg a.s./hl (which would correspond to 5.5 kg a.s./ha or 5.1 lb a.s./acre for a typical water volume of 2800 liters or 300 gallons). This rate of application is twice (2x) the maximum US label rate for a single application and the 3 applications corresponds to the total normal rate/season (13 lb/acre, approx 15kg a.s./ha). The first application occurred in June when many nut clusters were present. The second application occurred in August on immature but well developed nuts and the third application occurred in October on mature nuts. (no hull crack was detected yet on the treated trees).

In addition to the main mature nut harvest, two immature harvests were conducted by picking a few immature nuts and surrounding foliage immediately before the second and third applications. The nutmeat from mature nuts is the only raw agricultural commodity for pecans and analysis concentrated mainly on this commodity.

#### Findings

The Total Radioactive residues (TRR) in immature pecans harvested prior to the second application was 2.152 ppm. Developing hulls and shells were not removed from immature pecans prior to processing, therefore the sample includes residues remaining on the surface of hulls following first application. Immature pecans collected before the third application were not analyzed. The TRR of mature pecan nutmeat (shells removed) was 0.114 ppm. (Table B.7-7)

**Table B.7-7– Total radioactive residues (ppm on fresh weight expressed in dodine equiv.)**

Matrix	1st harvest* ppm (% TRR)	3rd harvest** ppm (% TRR)
Immature nuts (including hulls and shells)	2.152 (100%)	Not analyzed
Mature nuts (nutmeat only)	Not analyzed	0.114 (100%)

\*just before second application, immature nuts, \*\* 9 days after 3<sup>rd</sup> application, mature nuts

**Dodine – Annex B – Residues**

Extractability of radiolabel from immature pecans reached 89.5% (1.926 ppm). No further work was done to increase extractability from immature pecans since nutmeat from mature nuts was the commodity of major interest. Extractability of radiolabel from mature pecans was much more complicated due to the very high fat content of nutmeat (71.2% fat) but the combination of methods used showed to be successful and extraction varied from 101.4% to 106.0 % (0.115 ppm to 0.121 ppm). (Table B.7-8)

**Table B.7-8 – Extractability of total radiocarbon from  $^{14}\text{C}$ -dodine treated mature pecan nutmeat (mean of 2 repetitions)**

Fraction/Extract	ppm (% total)
Initial TRR	0.114 (100)
Hexane	0.026 (22.8)
MeOH:0.1 M HCl 9:1, v/v	0.074 (64.9)
0.1 M HCl	0.005 (4.4)
Ch <sub>2</sub> Cl <sub>2</sub> :MeOH 9:1, v/v	0.001 (0.9)
1M HCl	0.001 (0.9)
1M NaOH	0.002 (1.7)
Extract total	0.109 (95.6)
Post Extraction Solid (PES)	0.010 (8.7)
Total	0.119 (104.3)

In immature nuts (TRR of 2.152 ppm), dodine (0.976 ppm, 43.2% TRR) was partially metabolized to at least two more-polar metabolites (0.2 ppm, 9.3 % TRR and 0.288 ppm, 13% TRR), plus guanidine (0.326 ppm, 14.4% TRR). It is likely that the polar metabolites correspond to intermediates of dodine oxidation.

In mature nutmeat much lower levels of residues were detected (0.114 ppm). The major metabolite was guanidine (0.041 ppm, 36% TRR) while residues of dodine were also detected (0.015 ppm, 13.2% TRR). Metabolism of guanidine would require intermediacy of urea. Although urea was not detected as a major product it could account for the polar fraction (0.005 ppm, 4.4% TRR) unretained during SCX SPE fractionation. Urea is widely distributed in higher plants and would result in rapid conversion of any urea formed to carbon dioxide and ammonia. Because of the huge level of triglyceride biosynthesis occurring in pecans it was not surprising that dodine metabolites were reincorporated into the hexane extractable fraction. Partition experiments with the nutmeat hexane extracts, and saponified extracts, confirmed that intact dodine, or closely related guanidine metabolites, were minor or absent from this fraction. Rather, radiolabel was associated predominantly with the free fatty acid fraction (0.023 ppm, 20.2% TRR). (Table B.7-9)

The proposed metabolic pathway given below show where radio labelled  $^{14}\text{CO}_2$  released from urea could be reincorporated into the fatty acid fraction.

**Table B.7-9 – Mature pecan nutmeat metabolite identification and/or characterization**

Extract	Metabolite	ppm (% of TRR)
MeOH:0.1 M HCl (9:1)	guanidine	0.041 (36%)
MeOH:0.1 M HCl (9:1)	dodine	0.015 (13.2%)
MeOH:0.1 M HCl (9:1)	Neutral/non cationic	0.005 (4.4%)
Hexane	Free fatty acid fraction	0.023 (20.2%)
Total extracted		0.084 (73.8%)
Post Extraction Solid (PES)		0.004 (3.9%)
Total		0.088 (77.7%)

### Conclusion

Pecan trees were treated 3 times during the growing season with  $^{14}\text{C}$ -dodine at 0.2 kg a.s./hl. Immature pecans (including shells and hulls) harvested prior to the second application contained 2.152 ppm total radioactive residues, dodine (0.976 ppm, 43.2 % TRR) and guanidine (0.326 ppm, 14.4 % TRR) being the major metabolites. Two unidentified metabolites (putative oxidation products of dodine) accounted for 0.2 ppm (9.3% TRR) and 0.288 ppm (13% TRR). Nutmeat isolated from mature pecans contained much less radioactive residues (0.114 ppm) in which the major metabolites in the polar extract were again guanidine (0.041 ppm, 36% TRR) and dodine (0.015 ppm, 13.2% TRR). 0.023 ppm (20.2% of TRR) was associated with the free fatty acid fraction. The results indicate that a low level of applied dodine reaches the nutmeat fraction of mature pecans. However, most of the parent compound undergoes extensive metabolism to guanidine, and the latter undergoes further metabolism to carbon dioxide and ammonia. Carbon dioxide is assimilated into the metabolic pool. The very high proportion of lipid in the nutmeat is consistent with incorporation of  $^{14}\text{CO}_2$  into the fatty acid fraction.

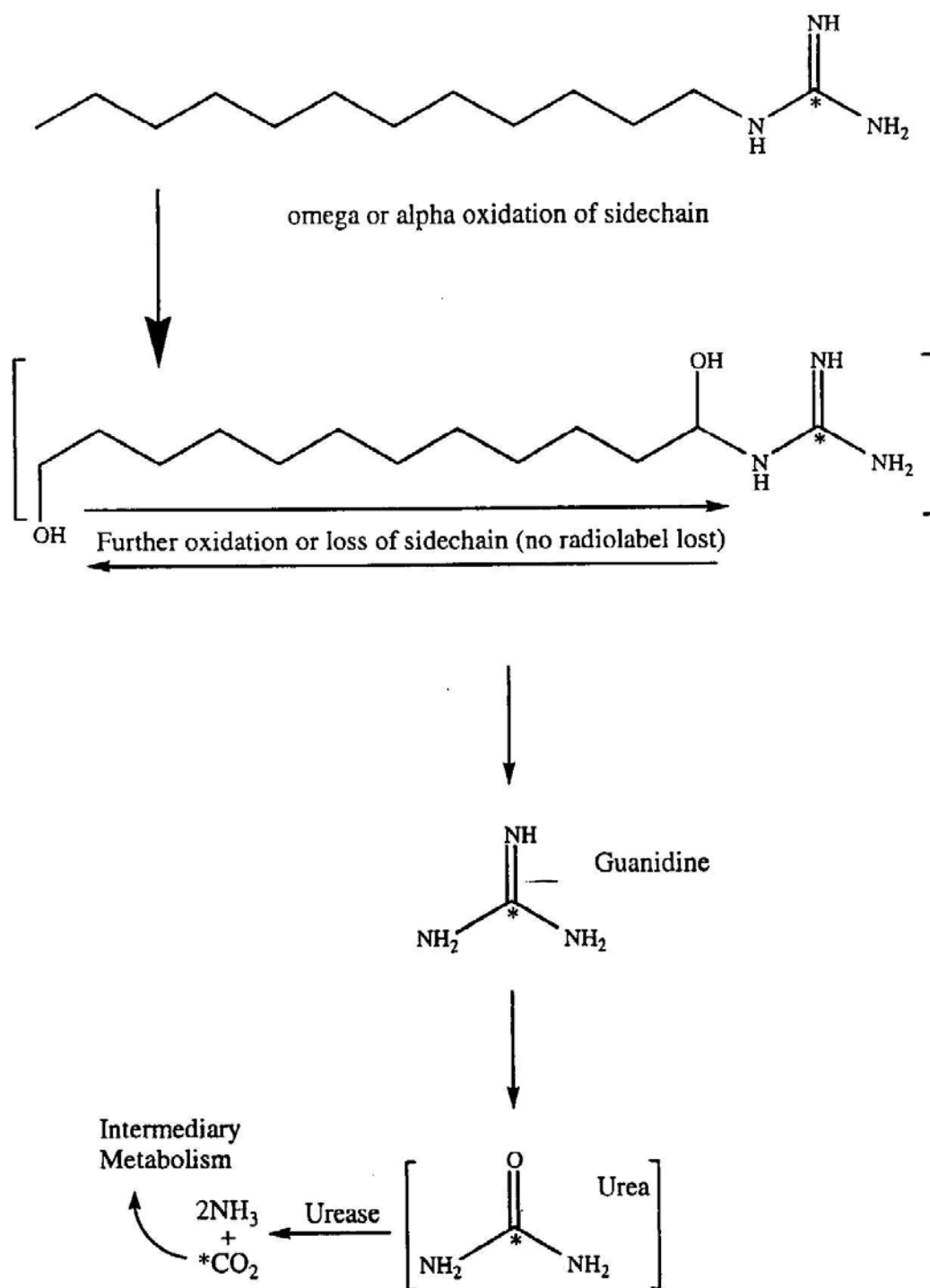


Figure 2 - Proposed metabolic pathway in pecans



#### B.7.1.4 Summary of metabolism in plants

In mature apples from apple trees treated 3 times at a rate of 0.108 kg a.s./hl until runoff, 82% of the TRR was on the peel and 5.7% on the pulp. Only dodine (79% of TRR in the pulp) and tentatively <sup>14</sup>C-guanidine moiety (0.017 ppm in the peel) were identified. More 4 components in the pulp and 24 in the peel were detected with values <0.01 ppm.

In strawberries from plants treated at a rate of 3 kg a.s./ha, most of the radioactivity was  $^{14}\text{C}$ -dione (85-89%). TLC analysis made no identification of the other components (2 with  $>0.05$  ppm and 9 with values between 0.01 and 0.05 ppm. Attempts were made to find urea and guanidine which were identified as metabolites, at low levels, and could only be very minor metabolites.

Mature pecans (nutmeat) from pecan trees treated 3 times with 0.2 kg a.s./hl contained 0.114 ppm. In the polar extract 0.41 ppm - 36% of the TRR was guanidine and 0.015 ppm-13.2 % of the TRR was dodine. The free fatty acid fraction represents 0.023 ppm-20.2 % of the TRR.

Three possibilities for the degradation of dodine in plants are proposed:

- 1 - Oxidation of the dodecyl chain (without cleavage) giving rise to discrete metabolites;
- 2 – Oxidation with cleavage of the dodecyl chain from the guanidine moiety. The  $^{14}\text{C}$  in that moiety would enter the carbon pool in the plant and would therefore appear in natural products.
- 3 -Oxidation in the dodecyl substituent in particular at C-1 of this chain would lead to an unstable derivative which would spontaneously decompose to liberate guanidine. N-oxidation of guanidine would produce urea what can be considered a detoxification mechanism.

## B.7.2 Metabolism, distribution and expression of residues in livestock (Annex IIA 6.2 and Annex IIIA 8.1)

### B.7.2.1 Goats

#### <sup>14</sup>C-Dodine : Metabolism in the goat

Langford-Pollard A.D. (1996)

##### Guidelines

FIFRA O-171-4

##### GLP

In compliance with GLP.

This study is acceptable.

##### Materials and methods

Test material: ISO common name: dodine; IUPAC name: 1-dodecylguanidinium acetate; radio labelled technical substance: batch 950214, radiochemical purity > 98%, cold material: batch number DA717, purity: 98.6%. Absorption, distribution and excretion of dodine were investigated in one female lactating goat (strain: British saanen) receiving five daily doses of C<sup>14</sup>-dodine at approximately 20 mg/day by gavage (capsules). The dose was equivalent to an intake of diet containing residues of approximately 13 ppm in the diet. Urine, cage wash, milk (twice daily), plasma (one hour pre-dose, 2 hours after each daily dose and 1,2,3,4,6,8 and 12 hours after the last dose), faeces and a variety of tissues including the gastro-intestinal tract were collected for analysis. Daily's observation of the goat's health was made. The goat was sacrificed at 23 hours after the final dose.

##### Findings

The goat was administered 21 mg <sup>14</sup>C-dodine each day. Based on the total food consumption of 8.17 kg during the dose administration period this was equivalent to an intake of 13 ppm in the diet. The capsule stability of the dose material was determined on days 1 and 5.

Following administration of <sup>14</sup>C-dodine, totals of 38% and 30% of the dose was excreted in the urine and faeces respectively. (16%) was retained in the digestive tract and contents, at sacrifice. Transfer of radioactivity into milk was low and accounted for 0.05% of the dose. Radioactivity in the liver and kidney accounted for 0.2% and 0.02% of the total dose respectively. The overall recovery of radioactivity was 86% of the dose administered.

Mean daily milk concentrations reached a plateau of 0.01 ppm during days 3 to 5.

The samples of plasma which were collected one hour before dosing reached a plateau of 0.02 ppm prior to the third dose. At 2 hours post each dose the concentrations of radioactivity were similar. Following the final dose, on day 5, the peak plasma concentration (0.16ppm) was observed at eight hours after dosing and had declined to 0.02ppm at sacrifice (23 hours after the final dose).

In tissues, concentrations were higher in the liver (0.17 ppm) and kidneys (0.11 ppm). Intermediate concentrations were detected in bile (0.04 ppm), whole-blood (0.02 ppm) and muscle (0.02 ppm). The concentrations of radioactivity in fat were very low (0.008 ppm).

**Table B.7-10 – Excretion and retention of radioactivity by a lactating goat during and after daily oral administration of  $^{14}\text{C}$ -dodine for five consecutive days at a dose level of 13 ppm in the diet**

Matrix	Time (hours after first dose)	Daily excretion <sup>a</sup> (% of the daily dose)	Cumulative excretion <sup>b</sup> (% of the cumulative dose)
Urine	0-24	16.57	16.57
	24-48	44.79	30.68
	48-72	46.16	35.84
	72-96	37.30	36.20
	96-119	41.58	38.31 <sup>c</sup>
Cage wash	0-119	-	1.69
Feces	0-24	14.54	14.54
	24-48	21.73	18.13
	48-72	35.73	24.00
	72-96	43.28	28.82
	96-119	34.97	30.05
Omasum + contents	119	-	1.16
Intestine + contents	119	-	4.88
Rumen contents	119	-	9.52
Total GIT + contents	0-119	-	15.56
Milk	119	-	0.05
Liver	119	-	0.22
Kidney		-	0.02
Total recovery			85.90

<sup>a</sup> radioactivity excreted during the specified time period as a percentage of the daily dose

<sup>b</sup> total radioactivity excreted up to and including the specified time period as a percentage of the cumulative dose administered up to that time

<sup>c</sup> includes 1.03% cumulative dose in urine in bladder

Unchanged  $^{14}\text{C}$ -dodine was not detected in the urine. The major metabolites excreted in the urine were hexylguanidine carboxylic acid (G3, 16% of the dose) and octylguanidine carboxylic acid (G5, 13% of the dose). Dodine (G11, 12% of the dose) was one of two major components in the faeces, the other was dodecylguanidine carboxylic acid (G10, 8% of the dose). The major radioactivity component in a pooled milk sample accounted for 0.008ppm. The table B.7-11 presents a summary of the residues found in liver and kidneys.

**Table B.7-11 – Quantification (%) of radioactive components in extracts of liver or kidneys from a lactating goat following administration of  $^{14}\text{C}$ -dodine for five consecutive days at a dose level of 13 ppm in the diet**

	Liver ppm (%)	Kidney ppm (%)
Total radioactive residue (TRR)	0.168	0.109
Extracted radioactivity	0.142 (84.6)	0.101 (92.3)
Unchanged dodine	0.004 (2.4)	0.003 (2.9)
Urea	0.017 (10.2)	0.016 (14.5)
(G2/G3)	0.039 (23.0)	0.033 (30.4)
(G5)	0.029 (17.1)	0.023 (21.5)
(G9/G10)	0.015 (9.1)a	0.013 (12.3)b
Other unidentified, each	<0.013 (<7.5)	<0.002 (<1.9)
Unchromatographed extracts	0.009 (5.4)	NS
Protease treatment	0.004 (2.4)	NS
Unextracted radioactivity	0.013 (7.5)	0.008 (7.6)

NS no sample

a on reanalysis resolved into two components G9 (0.009 ppm, 5.4%) and G10 (0.006ppm, 3.8%)

b on reanalysis resolved into two components G9 (0.011 ppm, 9.9%) and G10 (<0.003ppm, <3.0%)

Dodine constituted 5.2 % of the TRR (0.001 ppm) in muscle, 2.9% TRR (0.004 ppm) in liver and 2.4% TRR (0.003) ppm in kidney. No dodine was detected in milk. Urea was present in all of the edible tissues. Guanidine was not seen.

Alkylguanidine carboxylic acids (dodecylguanidine carboxylic acid, octylguanidine carboxylic acid and hexylguanidine carboxylic acid) were the largest portion of the residue in the edible tissues (52% TRR -  $\leq 0.01$ ppm in muscle, 41% TRR -  $\leq 0.07$  ppm in liver and 50% TRR -  $\leq 0.05$  ppm in kidney). The two major radioactive components in muscle each accounted for 0.005 (G5)-0.006 ppm (urea).

### Conclusion

Dodine was extensively metabolised in the goat. The proposed biotransformation pathway is shown below (Figure 3).

Following initial conversion into a carboxylic acid, the carbon chain is degraded by removal of two carbon units. This biotransformation pathway is consistent with the known route of degradation of fatty acids (beta-oxidation). Urea is produced by cleavage of the carbon chain.

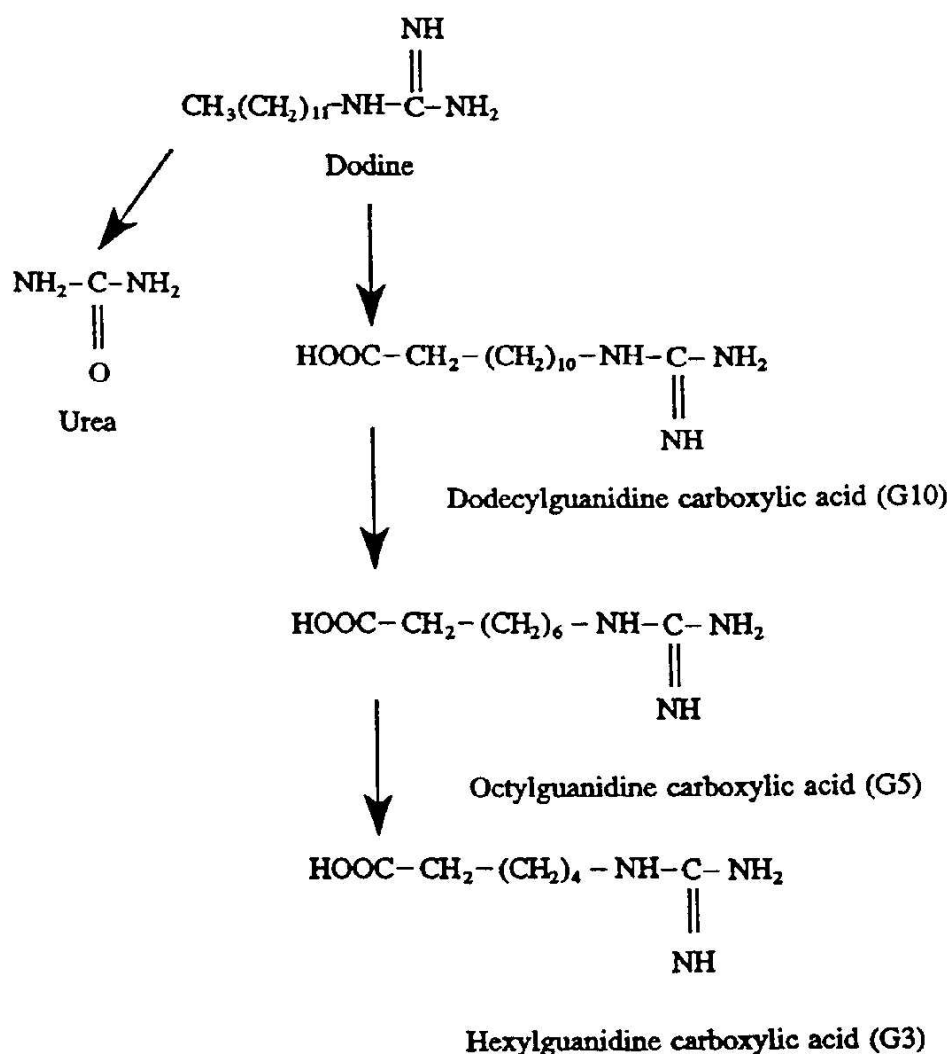


Figure 3 - Metabolic pathway the lactating goat

#### B.7.2.2 Summary of metabolism in livestock

##### Comparison between metabolism study in the lactating goat and in the rat:

The metabolic fate of dodine in the lactating goat and in the rat were found to be similar in that it was extensively metabolized by both species forming initially a carboxylic acid side chain with the elimination of urea and a consequent series of “2 carbon” degradation cycles. This biotransformation pathway is consistent with the beta-oxidation pathway which is used by mammals to degrade medium to long chain fatty acids.

On this basis the presence of dodecylguanidine carboxylic acid, octylguanidine carboxylic acid, and hexylguanidine carboxylic acid in goat liver and kidney samples is consistent with the metabolic pathway proposed in the rat. The presence of the carboxylic acid group on the chain distal to the guanidine group, should prevent these metabolites from having any biological effects similar to those of dodine. They are similar to those produced in the rat and so they have already been covered by the toxicity testing performed on the parent material.

### B.7.3 Definition of the residue (Annex IIA 6.7; Annex IIIA 8.6)

In apple dodine was the major component (72-89%) of the TRR. Several metabolites were observed however all below 0.01 ppm except one found in the peel of mature apples at 0.017 ppm (tentatively assigned as guanidine).

In strawberries most of the radioactivity was also  $^{14}\text{C}$ -dodine itself (85-89%). Also several metabolites were observed, each present at less than 0.01 ppm.

In mature nutmeat from pecans, guanidine (0.41 ppm-36% TRR) and dodine (0.015 ppm-13.2% TRR) were the major components of the polar extract. 0.023 ppm (20.2 % TRR) was associated with the free fatty acid fraction.

Considering the above mentioned, the fact that guanidine is of no toxicological relevance and that the pathway for the degradation of dodine in plants seems to be well understood, a residue definition for risk assessment and enforcement must be dodine.

In goats, dodine was extensively metabolised. 68 % TRR was excreted (urine and faeces) and 0.05% TRR in milk. Less than 1% TRR remained in the edible tissues; dodine was not detected in milk and was present with 0.001 ppm in muscle (5.2% TRR), 0.004 ppm in liver (2.9% TRR) and 0.003 ppm in kidney (2.4% TRR). Alkylguanidine carboxylic acids were the major components of the residue in tissues ( $\leq 0.01$  ppm in muscle,  $\leq 0.05$  ppm in kidney and  $\leq 0.07$  ppm in liver). However, the presence in those metabolites of the carboxylic acid groups at the distal end of the alkyl group, besides the quaternary amine, makes them unlikely to share any of the biological effects of dodine and are not expected to have dodine toxicity. Being so, the proposed residue definition for products of animal origin should be also dodine.

#### Conclusion

The only significant portion of the residue expected to have toxic effects is dodine itself.

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Dodine – Annex B – Residues

B.7.4 & B.7.5 Use pattern and Identification of the critical GAP

Table B.7-12 – Summary of intended uses

Crop and/ or situation  (a)	Member State or Country	Product name	F G or I  (b)	Pests or Group of pests controlled  (c)	Formulation		Application				Application rate per treatment			PHI (days)  (l)	Remarks:  (m)
					Type (d-f)	Conc. of as (i)	method kind (f-h)	growth stage & season (j)	numb er min max (k)	interval between applications (min)	kg a.s./hl min max	water L/ha min max	kg a.s./ha min max		
Apple/pear	EU (North-South)	Syllit 400 SC	F	Scab ( <i>Venturia ineaqualis</i> / <i>Venturia piri</i> )	SC	400 g/l	Foliar spray	from bud opening (BBCH 01) till 28 days before harvest (BBCH 74)	5 max	repeat after 7-10 days	0.045 - 0.18	500 - 1500L	0.90	28 days	1.7 – 2.25 L Syllit/ha
Peach	EU-South	Syllit 400 SC	F	Peach Leaf curl ( <i>Taphrina deformans</i> )	SC	400 g/l	Foliar spray	from bud swelling (BBCH 01) till petal fall (BBCH 69)	5 max	repeat after 7-10 days	0.06 - 0.18	500 - 1500L	0.90	60 days	2.25 L Syllit/ha
Cherry	EU (North-South)	Syllit 400 SC	F	Cherry leaf spot ( <i>Blumeriella jaapii</i> = <i>Coccomyces hiemalis</i> )	SC	400 g/l	Foliar spray	from flower opening (BBCH 60) till 2 weeks before harvest (BBCH 79) AND immediately after harvest	3 max pre- harve st	repeat after 7-10 days	0.05 - 0.16	500 - 1500L	0.8	14 days	2 L Syllit/ha

## **B.7.6 Residues resulting from supervised trials (Annex IIA 6.3; Annex IIIA 8.2)**

### **B.7.6.1 Stability of residues prior to analysis (Annex IIA 6.0; Annex IIIA 8.0)**

#### **B.7.6.1.1 Stability of residues during storage of samples**

**Storage stability of the residue of dodine (n-dodecylguanidine acetate) in/on fruits and their processed fractions.**

J. Yang (1998)

##### Guidelines

FIFRA O-171-4 (e)

##### GLP

In compliance with GLP.

This study is acceptable

##### Materials and methods

Test material: ISO common name: dodine; IUPAC name: 1-dodecylguanidinium acetate; technical substance: batch EA840SD2, purity: 100%; Representative matrices from the pome fruits group and their processed fractions as well as from the stone fruit group were tested: apple, apple juice, apple wet pomace and peach. Frozen untreated control sample, fortified frozen sample (apple juice) and frozen treated samples (apple, wet pomace and peach) taken from several previous residue studies were analyzed for storage stability of the residue of dodine at several time points (0, 1, 3, 6, 9, 12, 15, 18 months) during the storage period. In the previous residue studies, the residue level was about 1.7 ppm for apple and peach fruits and about 7.8 ppm in wet pomace representing the starting point of this storage stability study. The method of analysis used in this study was provided by Rhône Poulenc: RPA/R&D/RTP Doc. 45137 of 04/09/96.

##### Findings

Fresh spike recoveries were analyzed with each set of storage samples. A total of forty method spikes were analyzed for four matrices over eighteen-month storage. Dodine fresh spike concentrations were varied by matrices, ranging from 0.5 ppm for apple juice, 2.0 ppm for both apple and peach, to 10.0 ppm for wet pomace. Overall, the fresh spike recoveries are in the range from 63.1% to 109.7%, with peach at average  $87\% \pm 17\%$ , apple juice at  $92\% \pm 6\%$ , apple at  $92\% \pm 8\%$ , and wet pomace at  $70\% \pm 8\%$ . Some of the recoveries were below 70% (between 63.1% and 70%) but it does not affect the integrity of the study since the dodine storage stability were evaluated by both residue amount found and normalized residue amount (residue amount found/method recovery).



**Table B.7-13 – Results of the 18-months storage stability of dodine residue (fresh spike recovery and normalized concentration in ppm)**

	Apple		Apple juice (fort. at 0.5ppm)		Apple wet pomace		Peach	
Storage time	recov. (%)	Norm. conc. (ppm)	recov. (%)	Norm. conc. (ppm)	recov. (%)	Norm. conc. (ppm)	recov. (%)	Norm. conc. (ppm)
0 day	78.5	2.15 2.10	86.6	0.51 0.52	75.8	12.27 11.53	104.5	1.32 1.28
1 month	107.0	2.15 1.84	84.7	0.61 0.60	87.1	11.39 10.15	103.4	1.25 1.16
3 months	97.4	1.71 1.65	103.0	0.52 0.50	65.7	12.10 12.75	109.7	1.35 1.25
6 months	93.6	1.88 1.88	94.4	0.55 0.57	65.4	12.92 12.23	85.5	1.40 1.53
9 months	90.4	2.29 1.80	89.2	0.48 0.46	63.1	12.55 11.77	82.5	1.39 1.31
12 months	93.4	1.66 2.13	89.2	0.50 0.48	69.7	11.92 12.07	78.1	1.40 1.27
15 months	87.9	1.55 1.64	99.5	0.51 0.36	68.8	11.76 10.64	65.5	2.11 1.97
18 months	90.4	1.91 1.66	88.6	0.70 0.47	67.8	11.50 10.52	68.2	1.95 2.68

### Conclusion

In this stability study the residue of dodine was stable in apple, apple juice, apple wet pomace and peach when stored at -20°C during 18 months.

### **Dodine: Freezer storage stability in apples and cherries.**

D. Zenide (2001)

### Guidelines

Dir. 91/414/EEC, Annex II, section 6 of Part A

### GLP

In compliance with GLP.

This study is acceptable.

### Materials and methods

Test material: ISO common name: dodine; IUPAC name: 1-dodecylguanidinium acetate; technical substance purity: 99.5%; one representative matrice from each of the pome fruits group and the stone fruits group was tested: apple and cherry. Apple and cherry control samples from residue trials were used for the test. Frozen untreated control samples, freshly fortified frozen untreated control samples and fortified frozen samples (fortification level of 0.1 ppm) were analyzed for storage stability of the residue of dodine at several time points (0, 3, 6, 12, 18 months) during the storage period at  $\leq -18^{\circ}\text{C}$ . The method of residue analysis used was the Rhône-Poulenc method 97-176/AR 156-97 developed by ADME Bio analyses/USA in May 1998.

### Findings

The average recoveries obtained from the freshly fortified apple and cherry samples were within the required range of 70 to 110% with relative standard deviations of  $<20\%$ . After 3, 6, 12, 18 months of storage, residues for test substance was found to be in the range of 0.08 to 0.11 mg/kg. Compared

to the nominal concentration of 0.1 mg/kg added at freezer storage initiation, this represents a recovery of 80% to 110%. No significant concentration decline over time was found for dodine in the storage fortifications.

**Table B.7-14 – Results of the 18-months storage stability of dodine residue in apple and cherry fortified with 0.1 ppm**

	Apple		Cherry	
Storage time	recov. (%)	Conc. (mg/kg)	recov. (%)	Conc. (mg/kg)
0 day	100.7	0.1007	108.6	0.1086
3 months	101.3	0.1013	86.9	0.0869
6 months	100.4	0.1004	108.5	0.1085
12 months	83.8	0.0838	87.2	0.0872
18 months	84.9	0.0849	85.4	0.0854

### Conclusion

The results showed that the residue of dodine was stable in apple and cherry when stored at -18°C during 18 months.

### **B.7.6.1.2 Stability of residues in sample extracts**

The raw data obtained during the validation and the control of the performance of the analytical method (MEREDODINE based on method 45137) the laboratory of Gembloux has used for the determination of dodine residues in specimens of pear and cherry indicate that derivatized dodine is stable in the pear and cherry extracts for at least 5 days at ambient temperature. Additionally, there are no samples which are not analysed within 24 hours after extraction.

### **B.7.6.2 Residue trials**

#### **B.7.6.2.1 Pome fruit**

Intended GAP: North and South E.U. - max. 5x0.045-0.18 kg a.s./hl; PHI of 28 days.

#### Apples

The acceptable data base contains 16 residue trials, located in France (in 1998 and 1999). Eight are from the North and eight from the South. The residues found in the whole fruit are:

North: 0.088, 0.114, 0.121, 0.160, 0.180, 0.263, 0.277, 0.383 mg/kg;

South: 0.126, 0.267, 0.303, 0.310, 0.357, 0.440, 0.727, 0.930 mg/kg.

#### Pears

The acceptable data base contains 16 residue trials, located in France (in 1998, 1999 and 2001). Eight are from the North and eight from the South. The residues in the whole fruit are:

North: 0.180, 2x0.370, 0.450, 0.480, 0.540, 0.610, 1.300 mg/kg;

## **Dodine – Annex B – Residues**

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South: 0.160, 0.250, 0.260, 0.290, 0.310, 0.400, 0.540, 0.600 mg/kg.

### **B.7.6.2.2 Stone fruit**

#### Cherries

Intended GAP: North and South E.U.- max. 3x0.05-0.16kg a.s./hl; PHI of 14 days.

The acceptable data base contains eight residue trials located in France (in 1997, 1998, 1999 and 2001). Four are from the North and four from the South. The residues in the whole fruit are:

North/South: 2x0.14, 0.27, 0.46, 0.56, 2x0.70, 0.77 mg/kg.

#### Peaches

Intended GAP: South - max. 5x0.06-0.18 kg a.s./hl; PHI of 60 days.

The acceptable data base contains two residue trials located in the South of France (in 1997 and 1998). The residues in the whole fruit are: 0.053 and 0.063 mg/kg.

For this PHI we have only two more trials, but with a higher concentration of application (>than 25%), giving residues < 0.05 mg/kg.

For a PHI of 75 days and considering also the higher concentrations(>25%), we have seven residue trials (94-272 g a.s./hl, PHI of 71-93 days), located in France (1997 and 1998). Residue values: 6x<0.05, 0.073mg/kg.

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**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Report no. Date of delivery  Responsible body	Trial(s) no. Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment (average)		Dates of treatment(s) or number of treatment and last date	Growth stage at last treatment	Portion analysed	PHI hours / days	Residues (average) mg/kg	Remarks
					g a. i./ha	water l/ha					dodine	
	Study 97-528  30-July-98  RPA France  (Volume 27)	6.3.1/01 : 97528AM1 Saulty (62) (France) North	Golden	1) 1976 3) 23-Sep-97  01-Oct-97 08-Oct-97 15-Oct-97	680	598	12/ 23-Sep-97	BBCH 87	fruit	hours 2 days 8 15 22	3.4  3.6 3.1 2.7	foliar treatment  method of analysis : 45137 ( doc KII 4.2.1/01)
		6.3.1/02 : 97528OR1 Tigy (45) (France) North	Akane	1) 1982 3) 29-Jul-97  05-Aug-97 12-Aug-97 19-Aug-97	680 (T1, T2) 676 (T3) 680 (from T4 to T9) 678 (T10) 680 (T11, T12)	974 (T1, T2) 971 (T3) 974 (from T4 to T9) 972 (T10) 974 (T11, T12)	12/ 29-Jul-97	BBCH 81	fruit	hours 2 days 7 14 21	1.3  1.0 0.69 0.53	LOD : 0.050 mg/kg

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Report no. Date of delivery  Responsible body	Trial(s) no. Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment		Dates of treatment(s) or number of treatment and last date	Growth stage at last treatment	Portion analysed	PHI hours/ days	Residues (average) mg/kg	Remarks
					g a. i./ha	water l/ha					dodine	
	Study 97-528  30-July-98  RPA France  (Volume 27)	6.3.1/03 97528AV1 Vedène (84) (France) South	Golden	1) 1973 3) 12-Aug-97  19-Aug-97 26-Aug-97 02-Sep-97	680	625	12/ 12-Aug-97	BBCH 81	fruit	hours 2 days 7 14 21	1.3  0.54 0.70 0.64	foliar treatment  method of analysis : 45137 ( doc KII 4.2.1/01)  LOD : 0.050 mg/kg
		6.3.1/04 97528BX1 Lugnon et Ile du Carnet (33) (France) South	Orégon	1) 1980 3) 06-Aug-97  13-Aug-97 20-Aug-97 27-Aug-97	680	375	12/ 06-Aug-97	BBCH 84	fruit	hours 2 days 7 14 21	2.9  1.8 0.67 0.73	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl						dodine	
	Study 98-677  R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/05 : 98677AM1 (Reverse curve)  France North	Idared	1) 1989  3) 19/08/98 3) 17/09/98  3) 04/09/98 3) 17/09/98  3) 17/09/98  3) 17/09/98  3) 17/09/98	678 678 678 678  678 678 678 678 678 678 678 678 678 678 678 678 678 678 678	444 444 444 370 370  444 444 444 370 370  444 444 444 370 370  444 444 444 370 370	153 153 153 183 183  153 153 153 183 183  153 153 153 183 183  153 153 153 183 183	10/06/98 (1) 17/06/98 (2) 24/06/98 (3) 01/07/98 (4) 22/07/98 (5)  10/06/98 (1) 17/06/98 (2) 24/06/98 (3) 01/07/98 (4) 05/08/98 (5)  10/06/98 (1) 17/06/98 (2) 24/06/98 (3) 01/07/98 (4) 19/08/98 (5)  10/06/98 (1) 17/06/98 (2) 24/06/98 (3) 01/07/98 (4) 04/09/98 (5)	BBCH 72 BBCH 73 BBCH 74 BBCH 74 BBCH 74  BBCH 72 BBCH 73 BBCH 74 BBCH 74 BBCH 74  BBCH 72 BBCH 73 BBCH 74 BBCH 74 BBCH 74  BBCH 72 BBCH 73 BBCH 74 BBCH 74 BBCH 81	BBCH 74 BBCH 87  BBCH 81 BBCH 87  BBCH 87  BBCH 87	fruit fruit  fruit fruit  fruit  fruit	28 57  30 43  29  13	0.52 0.37  0.24 0.20  0.39  0.38	Residues were less than LOQ in untreated samples  Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg

## Dodine – Annex B – Residues

**Table B.7-15 - Residue trials (cont.)**

<b>Active substance and content</b>	<b>: Dodine 400 g/l</b>	<b>Commercial Product (name)</b>	<b>: Syllit 400 SC</b>
<b>Crop/crop group</b>	<b>: Pome fruits / Apple</b>	<b>Producer of commercial product</b>	<b>: Chimac Agriphar</b>
<b>Responsible body for reporting (name, address)</b>	<b>: Rhône Poulenc Agro</b>	<b>Indoor/Glasshouse/Outdoor</b>	<b>: Outdoor</b>
<b>Country</b>	<b>: France</b>	<b>Residues calculated as</b>	<b>: Dodine</b>

No.	Study Id. no.  Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  <b>foliar treatment</b>  a.s. g/ha    water l/ha    a.s. g/hl			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg  <b>dodine</b>	Remarks
	Study 98-677  R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/06: 98677AM2 (Reverse curve)  France North	Jonagold	1) 1991   3) 19/08/98 3) 15/09/98   3) 03/09/98 3) 15/09/98   3) 15/09/98   3) 15/09/98	678 678 678 678 678  678 678 678 678 678  678 678 678 678 678	556 556 556 556 556  556 556 556 556 556  556 556 556 556 556	122 122 122 122 122  122 122 122 122 122  122 122 122 122 122	10/06/98 (1) 17/06/98 (2) 24/06/98 (3) 01/07/98 (4) 22/07/98 (5)  10/06/98 (1) 17/06/98 (2) 24/06/98 (3) 01/07/98 (4) 05/08/98 (5)  10/06/98 (1) 17/06/98 (2) 24/06/98 (3) 01/07/98 (4) 19/08/98 (5)  10/06/98 (1) 17/06/98 (2) 24/06/98 (3) 01/07/98 (4) 03/09/98 (5)	BBCH 72 BBCH 73 BBCH 74 BBCH 74 BBCH 75  BBCH 72 BBCH 73 BBCH 74 BBCH 74 BBCH 75  BBCH 72 BBCH 73 BBCH 74 BBCH 74 BBCH 77  BBCH 72 BBCH 73 BBCH 74 BBCH 74 BBCH 81	BBCH 77 BBCH 87  BBCH 85 BBCH 87  BBCH 87  BBCH 87	fruit fruit  fruit fruit  fruit  fruit	28 55  29 41  27  12	0.30 0.15  0.26 0.22  0.23  0.29	Residues were less than LOQ in untreated samples  Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg

## Dodine – Annex B – Residues

**Table B.7-15 - Residue trials (cont.)**

<b>Active substance and content</b>	<b>: Dodine 400 g/l</b>	<b>Commercial Product (name)</b>	<b>: Syllit 400 SC</b>
<b>Crop/crop group</b>	<b>: Pome fruits / Apple</b>	<b>Producer of commercial product</b>	<b>: Chimac Agriphar</b>
<b>Responsible body for reporting (name, address)</b>	<b>: Rhône Poulenc Agro</b>	<b>Indoor/Glasshouse/Outdoor</b>	<b>: Outdoor</b>
<b>Country</b>	<b>: France</b>	<b>Residues calculated as</b>	<b>: Dodine</b>

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  <b>foliar treatment</b>  a.s. g/ha    water l/ha    a.s. g/ha			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg  <b>dodine</b>	Remarks
	Study 98-677 R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/07: 98677OR1 (Reverse curve)  France North	Golden Smoother	1) 1991   3) 26/08/98 3) 22/09/98    3) 08/09/98 3) 22/09/98    3) 22/09/98    3) 22/09/98	678 678 678 678 678  678 678 678 678 678  678 678 678 678 678  678 670 678 678 678	801 801 801 801 801  801 801 801 801 801  801 801 801 801 801  801 795 801 801 801	85 85 85 85 85  85 85 85 85 85  85 84 85 85 85  85 84 85 85 85	04/06/98 (1) 09/06/98 (2) 17/06/98 (3) 24/06/98 (4) 29/07/98 (5)  04/06/98 (1) 09/06/98 (2) 17/06/98 (3) 24/06/98 (4) 11/08/98 (5)  04/06/98 (1) 09/06/98 (2) 17/06/98 (3) 24/06/98 (4) 26/08/98 (5)  04/06/98 (1) 09/06/98 (2) 17/06/98 (3) 24/06/98 (4) 08/09/98 (5)	BBCH 72-73 BBCH 73-74 BBCH 74 BBCH 74-75 BBCH 77  BBCH 72-73 BBCH 73-74 BBCH 74 BBCH 74-75 BBCH 79-81  BBCH 72-73 BBCH 73-74 BBCH 74 BBCH 74-75 BBCH 81  BBCH 72-73 BBCH 73-74 BBCH 74 BBCH 74-75 BBCH 85  BBCH 72-73 BBCH 73-74 BBCH 74 BBCH 74-75 BBCH 85	BBCH 81 BBCH 87-89  BBCH 85 BBCH 87-89  BBCH 87-89  BBCH 87-89	fruit fruit  fruit fruit  fruit  fruit	28 55  28 42  27  14	0.26 0.19  0.14 0.11  0.14  0.16	Residues were less than LOQ in untreated samples  Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg



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**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no.  Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks	
					a.s. g/ha	water l/ha	a.s. g/ha						dodine		
	Study 98-677  R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/08: 98677OR2 (Reverse curve)  France North	Idared	1) 1983	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 78-85 BBCH 89	fruit fruit	28 62	0.10 0.052	Residues were less than LOQ in untreated samples	
					678	698	97	09/06/98 (2)	BBCH 74						
					678	698	97	17/06/98 (3)	BBCH 74-75						
				3) 26/08/98	678	698	97	24/06/98 (4)	BBCH 75						
					678	698	97	29/07/98 (5)	BBCH 77						
				3) 08/09/98	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 85 BBCH 89	fruit fruit	28 49	0.12 0.12	Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg	
					678	698	97	09/06/98 (2)	BBCH 74						
					678	698	97	17/06/98 (3)	BBCH 74-75						
					678	698	97	24/06/98 (4)	BBCH 75						
					678	698	97	11/08/98 (5)	BBCH 79-81						
				3) 29/09/98	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 89	fruit	34	0.17		
					674	695	97	09/06/98 (2)	BBCH 74						
					678	698	97	17/06/98 (3)	BBCH 74-75						
					678	698	97	24/06/98 (4)	BBCH 75						
					678	698	97	26/08/98 (5)	BBCH 78-85						
				3) 29/09/98	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 89	fruit	21	0.25		
					678	698	97	09/06/98 (2)	BBCH 74						
					678	698	97	17/06/98 (3)	BBCH 74-75						
					678	698	97	24/06/98 (4)	BBCH 75						
					678	698	97	08/09/98 (5)	BBCH 85						

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**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no.  Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks	
					a.s. g/ha	water l/ha	a.s. g/ha						dodine		
	Study 98-677  R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/08: 98677OR2 (Reverse curve)  France North	Idared	1) 1983	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 78-85 BBCH 89	fruit fruit	28 62	0.10 0.052	Residues were less than LOQ in untreated samples	
					678	698	97	09/06/98 (2)	BBCH 74						
					678	698	97	17/06/98 (3)	BBCH 74-75						
				3) 26/08/98 3) 29/09/98	678	698	97	24/06/98 (4)	BBCH 75	BBCH 85 BBCH 89	fruit fruit	28 49	0.12 0.12	Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg	
					678	698	97	29/07/98 (5)	BBCH 77						
					678	698	97	04/06/98 (1)	BBCH 72-73						
				3) 08/09/98 3) 29/09/98	678	698	97	09/06/98 (2)	BBCH 74	BBCH 85 BBCH 89	fruit fruit	28 49	0.12 0.12		
					678	698	97	17/06/98 (3)	BBCH 74-75						
					678	698	97	24/06/98 (4)	BBCH 75						
				3) 29/09/98	678	698	97	11/08/98 (5)	BBCH 79-81	BBCH 89	fruit fruit	34	0.17		
					678	698	97	04/06/98 (1)	BBCH 72-73						
					674	695	97	09/06/98 (2)	BBCH 74						
				3) 29/09/98	678	698	97	17/06/98 (3)	BBCH 74-75	BBCH 89	fruit fruit	21	0.25		
					678	698	97	24/06/98 (4)	BBCH 75						
					678	698	97	26/08/98 (5)	BBCH 78-85						
				3) 29/09/98	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 89	fruit fruit	21	0.25		
					678	698	97	09/06/98 (2)	BBCH 74						
					678	698	97	17/06/98 (3)	BBCH 74-75						
				3) 29/09/98	678	698	97	24/06/98 (4)	BBCH 75	BBCH 89	fruit fruit	21	0.25		

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**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no.  Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks	
					a.s. g/ha	water l/ha	a.s. g/ha						dodine		
	Study 98-677  R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/08: 98677OR2 (Reverse curve)  France North	Idared	1) 1983	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 78-85 BBCH 89	fruit fruit	28 62	0.10 0.052	Residues were less than LOQ in untreated samples	
					678	698	97	09/06/98 (2)	BBCH 74						
					678	698	97	17/06/98 (3)	BBCH 74-75						
				3) 26/08/98 3) 29/09/98	678	698	97	24/06/98 (4)	BBCH 75	BBCH 85 BBCH 89	fruit fruit	28 49	0.12 0.12	Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg	
					678	698	97	29/07/98 (5)	BBCH 77						
					678	698	97	04/06/98 (1)	BBCH 72-73						
				3) 08/09/98 3) 29/09/98	678	698	97	09/06/98 (2)	BBCH 74	BBCH 85 BBCH 89	fruit fruit	28 49	0.12 0.12		
					678	698	97	17/06/98 (3)	BBCH 74-75						
					678	698	97	24/06/98 (4)	BBCH 75						
				3) 29/09/98	678	698	97	11/08/98 (5)	BBCH 79-81	BBCH 89	fruit fruit	34	0.17		
					678	698	97	04/06/98 (1)	BBCH 72-73						
					674	695	97	09/06/98 (2)	BBCH 74						
				3) 29/09/98	678	698	97	17/06/98 (3)	BBCH 74-75	BBCH 89	fruit fruit	21	0.25		
					678	698	97	24/06/98 (4)	BBCH 75						
					678	698	97	26/08/98 (5)	BBCH 78-85						
				3) 29/09/98	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 89	fruit fruit	21	0.25		
					678	698	97	09/06/98 (2)	BBCH 74						
					678	698	97	17/06/98 (3)	BBCH 74-75						
				3) 29/09/98	678	698	97	24/06/98 (4)	BBCH 75	BBCH 89	fruit fruit	21	0.25		

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**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no.  Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/ha						dodine	
	Study 98-677  R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/08: 98677OR2 (Reverse curve)  France North	Idared	1) 1983	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 78-85 BBCH 89	fruit fruit	28 62	0.10 0.052	Residues were less than LOQ in untreated samples
					678	698	97	09/06/98 (2)	BBCH 74					
					678	698	97	17/06/98 (3)	BBCH 74-75					
				3) 26/08/98 3) 29/09/98	678	698	97	24/06/98 (4)	BBCH 75	BBCH 85 BBCH 89	fruit fruit	28 49	0.12 0.12	Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg
					678	698	97	29/07/98 (5)	BBCH 77					
					678	698	97	04/06/98 (1)	BBCH 72-73					
				3) 08/09/98 3) 29/09/98	678	698	97	09/06/98 (2)	BBCH 74	BBCH 85 BBCH 89	fruit fruit	28 49	0.12 0.12	
					678	698	97	17/06/98 (3)	BBCH 74-75					
					678	698	97	24/06/98 (4)	BBCH 75					
				3) 29/09/98	678	698	97	11/08/98 (5)	BBCH 79-81	BBCH 89	fruit fruit	34	0.17	
					678	698	97	04/06/98 (1)	BBCH 72-73					
					674	695	97	09/06/98 (2)	BBCH 74					
				3) 29/09/98	678	698	97	17/06/98 (3)	BBCH 74-75	BBCH 89	fruit fruit	21	0.25	
					678	698	97	24/06/98 (4)	BBCH 75					
					678	698	97	26/08/98 (5)	BBCH 78-85					
				3) 29/09/98	678	698	97	04/06/98 (1)	BBCH 72-73	BBCH 89	fruit fruit	21	0.25	
					678	698	97	09/06/98 (2)	BBCH 74					
					678	698	97	17/06/98 (3)	BBCH 74-75					
				3) 29/09/98	678	698	97	24/06/98 (4)	BBCH 75	BBCH 89	fruit fruit	21	0.25	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no.  Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  <b>foliar treatment</b>			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl						<b>dodine</b>	

**Dodine – Annex B – Residues**

Study 98-677 R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/09: 98677AV1 (Reverse curve)  France South	Golden	1) 1982	678	417	163	18/06/98 (1)	BBCH 74	BBCH 77 BBCH 87	fruit fruit	29 54	0.36 < 0.050	Residues were less than LOQ in untreated samples
				678	417	163	24/06/98 (2)	BBCH 75					
				678	417	163	30/06/98 (3)	BBCH 75					
				678	417	163	07/07/98 (4)	BBCH 77					
				678	417	163	29/07/98 (5)	BBCH 77					
				678	417	163	18/06/98 (1)	BBCH 74					
				678	417	163	24/06/98 (2)	BBCH 75					
				678	417	163	30/06/98 (3)	BBCH 75					
				678	417	163	07/07/98 (4)	BBCH 77					
				678	417	163	12/08/98 (5)	BBCH 77					
				678	417	163	18/06/98 (1)	BBCH 74					
				678	417	163	24/06/98 (2)	BBCH 75					
				678	417	163	30/06/98 (3)	BBCH 75					
				678	417	163	07/07/98 (4)	BBCH 77					
				678	417	163	27/08/98 (5)	BBCH 77					
				678	417	163	18/06/98 (1)	BBCH 74					
				678	417	163	24/06/98 (2)	BBCH 75					
				678	417	163	30/06/98 (3)	BBCH 75					
				678	417	163	07/07/98 (4)	BBCH 77					
				678	417	163	09/09/98 (5)	BBCH 79-81					
				678	417	163	18/06/98 (1)	BBCH 74					
				678	417	163	24/06/98 (2)	BBCH 75					
				678	417	163	30/06/98 (3)	BBCH 75					
				678	417	163	07/07/98 (4)	BBCH 77					
				678	417	163	09/09/98 (5)	BBCH 79-81					

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
Crop/crop group : Pome fruits / Apple  
Responsible body for reporting (name, address) : Rhône Poulenc Agro  
Country : France  
Commercial Product (name) : Syllit 400 SC  
Producer of commercial product : Chimac Agriphar  
Indoor/Glasshouse/Outdoor : Outdoor  
Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment	Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
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**Dodine – Annex B – Residues**

	Responsible body				a.s. g/ha	water l/ha	a.s. g/ha						dodine	
	Study 98-677	6.3.1/10: 98677BX1	Golden	1) 1987	678	467	145	03/06/98 (1)	BBCH 73					Residues were less than LOQ in untreated samples
	R&D/CRLD/AN/kd/9916188	(Reverse curve)			678	467	145	11/06/98 (2)	BBCH 75					
					678	333	204	17/06/98 (3)	BBCH 75					
				3) 12/08/98	678	333	204	24/06/98 (4)	BBCH 77	BBCH 80	fruit	28	0.25	Method of analysis : 45137 ( doc KII 4.2.1/01)
				3) 09/09/98	678	333	204	15/07/98 (5)	BBCH 78	BBCH 87	fruit	56	0.14	
	18-August-1999	France South			678	467	145	03/06/98 (1)	BBCH 73					
	Rhône-Poulenc Agro European Zone				678	467	145	11/06/98 (2)	BBCH 75					LOQ : 0.050 mg/kg
					678	333	204	17/06/98 (3)	BBCH 75					
				3) 27/08/98	678	333	204	24/06/98 (4)	BBCH 77	BBCH 81	fruit	29	0.19	
	(Volume 28)			3) 09/09/98	678	333	204	29/07/98 (5)	BBCH 79	BBCH 87	fruit	42	0.21	
					678	467	145	03/06/98 (1)	BBCH 73					
					678	467	145	11/06/98 (2)	BBCH 75					
					678	333	204	17/06/98 (3)	BBCH 75					
					678	333	204	24/06/98 (4)	BBCH 77					
				3) 09/09/98	678	333	204	12/08/98 (5)	BBCH 80	BBCH 87	fruit	28	0.49	
					678	467	145	03/06/98 (1)	BBCH 73					
					678	467	145	11/06/98 (2)	BBCH 75					
					678	333	204	17/06/98 (3)	BBCH 75					
					678	333	204	24/06/98 (4)	BBCH 77					
				3) 09/09/98	678	333	204	27/08/98 (5)	BBCH 81	BBCH 87	fruit	13	0.77	
					678	333	204							

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Commercial Product (name) : Syllit 400 SC  
 Crop/crop group : Pome fruits / Apple  
 Producer of commercial product : Chimac Agriphar  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Country : France  
 Residues calculated as : Dodine

No.	Study Id. no.	Trial(s) no. (type of trial)	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
	Report no.				foliar treatment								dodine	
	Date of delivery	Location			a.s. g/ha	water l/ha	a.s. g/hl							
	Responsible body													

**Dodine – Annex B – Residues**

Study 98-677 R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/11: 98677LY1 (Reverse curve)  France South	Golden	1) 1987	678	238	285	15/06/98 (1)	BBCH 74	BBCH 76 BBCH 87	fruit fruit	29 60	1.2 0.49	Residues were less than LOQ in untreated samples
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
			3) 14/08/98	678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	238	285	16/07/98 (5)	BBCH 75					
				678	238	285	15/06/98 (1)	BBCH 74					
				666	238	280	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
			3) 31/08/98	678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	04/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	280	24/06/98 (2)	BBCH 74					
				666	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	14/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					
				678	238	285	24/06/98 (2)	BBCH 74					
				678	238	285	29/06/98 (3)	BBCH 74					
				678	238	285	08/07/98 (4)	BBCH 74					
			3) 14/09/98	678	416	163	31/08/98 (5)	BBCH 76					
				678	238	285	15/06/98 (1)	BBCH 74					

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# Dodine – Annex B – Residues

**Table B.7-15 - Residue trials (cont.)**

Active substance and content	: Dodine 400 g/l	Commercial Product (name)	: Syllit 400 SC
Crop/crop group	: Pome fruits / Apple	Producer of commercial product	: Chimac Agriphar
Responsible body for reporting (name, address)	: Rhône Poulenc Agro	Indoor/Glasshouse/Outdoor	: Outdoor
Country	: France	Residues calculated as	: Dodine

No.	Study Id. no.  Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg  dodine	Remarks
	Study 98-677  R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/12: 98677TL1 (Reverse curve)  France South	Golden	1) 1979   3) 28/07/98 3) 25/08/98    3) 11/08/98 3) 25/08/98    3) 25/08/98    3) 25/08/98	678 678 678 678 678  678 678 678 678 678  678 678 678 678 678  678 678 678 678 678	750 750 750 750 750  750 750 750 750 750  750 750 750 750 750  750 750 750 750 750	90 90 90 90 90  90 90 90 90 90  90 90 90 90 90  90 90 90 90 90	03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 30/06/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 15/07/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 30/07/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 11/08/98 (5)	BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 75  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 81	BBCH 77 BBCH 87-89  BBCH 81 BBCH 87-89  BBCH 87-89  BBCH 87-89	fruit fruit  fruit fruit  fruit  fruit	28 56  27 41  26  14	0.56 0.35  0.25 0.31  0.61  0.80	Residues were less than LOQ in untreated samples  Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg

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# **Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content Crop/crop group Responsible body for reporting (name, address) Country	<b>: Dodine 400 g/l</b> <b>: Pome fruits / Apple</b> <b>: Rhône Poulenc Agro</b> <b>: France</b>	Commercial Product (name) Producer of commercial product Indoor/Glasshouse/Outdoor Residues calculated as	<b>: Syllit 400 SC</b> <b>: Chimac Agriphar</b> <b>: Outdoor</b> <b>: Dodine</b>
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No.	Study Id. no.  Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg  dodine	Remarks
	Study 98-677  R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/12: 98677TL1 (Reverse curve)  France South	Golden	1) 1979  3) 28/07/98 3) 25/08/98  3) 11/08/98 3) 25/08/98  3) 25/08/98  3) 25/08/98	678 678 678 678 678 678 678 678 678 678 678 678 678 678 678	750 750 750 750 750 750 750 750 750 750 750 750 750 750 750	90 90 90 90 90 90 90 90 90 90 90 90 90 90 90	03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 30/06/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 15/07/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 30/07/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 11/08/98 (5)	BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 75  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 81	BBCH 77 BBCH 87-89  BBCH 81 BBCH 87-89  BBCH 87-89  BBCH 87-89	fruit fruit  fruit fruit  fruit  fruit	28 56  27 41  26  14	0.56 0.35  0.25 0.31  0.61  0.80	Residues were less than LOQ in untreated samples  Method of analysis : 45137 ( doc KII 4.2.1/01 )  LOQ : 0.050 mg/kg

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# Dodine – Annex B – Residues

**Table B.7-15 - Residue trials (cont.)**

Active substance and content	: Dodine 400 g/l	Commercial Product (name)	: Syllit 400 SC
Crop/crop group	: Pome fruits / Apple	Producer of commercial product	: Chimac Agriphar
Responsible body for reporting (name, address)	: Rhône Poulenc Agro	Indoor/Glasshouse/Outdoor	: Outdoor
Country	: France	Residues calculated as	: Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg  dodine	Remarks
	Study 98-677 R&D/CRLD/ AN/kd/ 9916188  18-August-1999  Rhône-Poulenc Agro European Zone  (Volume 28)	6.3.1/12: 98677TL1 (Reverse curve)  France South	Golden	1) 1979   3) 28/07/98 3) 25/08/98   3) 11/08/98 3) 25/08/98   3) 25/08/98   3) 25/08/98	678 678 678 678 678  678 678 678 678 678  678 678 678 678 678	750 750 750 750 750  750 750 750 750 750  750 750 750 750 750	90 90 90 90 90  90 90 90 90 90  90 90 90 90 90	03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 30/06/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 15/07/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 30/07/98 (5)  03/06/98 (1) 10/06/98 (2) 17/06/98 (3) 25/06/98 (4) 11/08/98 (5)	BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 75  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 77  BBCH 74 BBCH 74 BBCH 75 BBCH 75 BBCH 81	BBCH 77 BBCH 87-89  BBCH 81 BBCH 87-89  BBCH 87-89  BBCH 87-89	fruit fruit  fruit fruit  fruit  fruit	28 56  27 41  26  14	0.56 0.35  0.25 0.31  0.61  0.80	Residues were less than LOQ in untreated samples  Method of analysis : 45137 ( doc KII 4.2.1/01)  LOQ : 0.050 mg/kg

[illegible]

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**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content	: Dodine 400 g/l	Commercial Product (name)	: Syllit 400 SC
Crop/crop group	: Pome fruits / Apple	Producer of commercial product	: Chimac Agriphar
Responsible body for reporting (name, address)	: Rhône Poulenc Agro	Indoor/Glasshouse/Outdoor	: Outdoor
Country	: France	Residues calculated as	: Dodine

[illegible]



**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No	Study Id. no. Report no.	Trial(s) no. (type of trial)	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight  (g)	PHI days	Residues (average) mg/kg	Remarks
	Date of delivery	Location			foliar treatment									dodine	
					a.s. g/ha	water l/ha	a.s. g/hl								
	Study 99-517  R&D/CRLD/ AN/mba/ 0015548  29-June-00  Aventis CropScience European Zone	6.3.1/14: 99517AM2 (reverse curve trial)  France (Mesnil- Domqueur) North  North	Jonagold	1) 1991  2) 25/08/99 2) 23/09/99  2) 08/09/99 2) 23/09/99  2) 23/09/99  2) 23/09/99	687 687										

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**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content	: Dodine 400 g/l
Crop/crop group	: Pome fruits / Apple
Responsible body for reporting (name, address)	: Rhône Poulenc Agro
Country	: France

Commercial Product (name)	: Syllit 400 SC
Producer of commercial product	: Chimac Agriphar
Indoor/Glasshouse/Outdoor	: Outdoor
Residues calculated as	: Dodine

No	Study Id. no. Report no.  Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight (g)	PHI days	Residues (average) mg/kg	Remarks	
					foliar treatment									dodine		
					a.s. g/ha	water l/ha	a.s. g/ha									
	Study 99-517  R&D/CRLD/ AN/mba/ 0015548  29-June-00  Aventis CropScience European Zone	6.3.1/15: 99517OR1 (reverse curve trial)  France (Sigloy) North  North	Golden Smoother	1) 1991	687	751	91	08/06/99 (1)	BBCH 73	BBCH 75-85 BBCH 87-89	fruit fruit	n.r. n.r.	28 56	0.13 0.063	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.010 mg/kg  n.r. : not relevant	
					687	751	91	16/06/99 (2)	BBCH 73-74							
					687	751	91	23/06/99 (3)	BBCH 74							
				2) 25/08/99	687	751	91	30/06/99 (4)	BBCH 75							
					2) 20/09/99	687	751	91	28/07/99 (5)							BBCH 78
						687	751	91	08/06/99 (1)							BBCH 73
				2) 08/09/99	687	751	91	16/06/99 (2)	BBCH 73-74							
					2) 20/09/99	687	751	91	23/06/99 (3)	BBCH 74						
						687	751	91	30/06/99 (4)	BBCH 75						
				2) 20/09/99	687	751	91	11/08/99 (5)	BBCH 78-81							
					2) 20/09/99	687	751	91	08/06/99 (1)	BBCH 73						
						687	751	91	16/06/99 (2)	BBCH 73-74						
				687		751	91	23/06/99 (3)	BBCH 74							
				2) 20/09/99	687	751	91	30/06/99 (4)	BBCH 75							
					2) 20/09/99	687	751	91	25/08/99 (5)	BBCH 81						
2) 20/09/99	687	751	91			08/06/99 (1)	BBCH 73									
	687	751	91	16/06/99 (2)		BBCH 73-74										
	687	751	91	23/06/99 (3)	BBCH 74											
2) 20/09/99	687	751	91	30/06/99 (4)	BBCH 75											
	2) 20/09/99	687	751	91	08/09/99 (5)	BBCH 85										
		687	751	91	08/09/99 (5)	BBCH 85										
2) 20/09/99		687	751	91	08/09/99 (5)	BBCH 85										
	2) 20/09/99	687	751	91	08/09/99 (5)	BBCH 85										
		687	751	91	08/09/99 (5)	BBCH 85										

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
Crop/crop group : Pome fruits / Apple  
Responsible body for reporting (name, address) : Rhône Poulenc Agro  
Country : France  
Commercial Product (name) : Syllit 400 SC  
Producer of commercial product : Chimac Agriphar  
Indoor/Glasshouse/Outdoor : Outdoor  
Residues calculated as : Dodine

No	Study Id. no.	Trial(s) no.	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portio n analys ed	Average unit weight  (g)	PHI days	Residues (average) mg/kg	Remarks
	Report no.	(type of trial)			foliar treatment									Residues	
	Date of delivery	Location			a.s. g/ha	water l/ha	a.s. g/hl							dodine	
	Study 99-517  R&D/CRLD/ AN/mba/ 0015548  29-June-00  Aventis CropScience European Zone	6.3.1/16: 99517RS1 (reverse curve trial)  France (Celle les Condé) North  North	Douce Coet	1) 1989  2) 06/09/99 2) 05/10/99  2) 21/09/99 2) 05/10/99  2) 05/10/99  2) 05/10/99	687 687 719 687 687 687 739 687  687										

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No	Study Id. no. Report no.	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight  (g)	PHI days	Residues (average) mg/kg	Remarks
	Responsible body				a.s. g/ha	water l/ha	a.s. g/hl							dodine	
	Study 99-517  R&D/CRLD/ AN/mba/ 0015548  29-June-00  Aventis CropScience European Zone	6.3.1/17: 99517AV1 (reverse curve trial)  France (Robion) South  South	Granny	1) 1990  2) 16/08/99 2) 14/09/99  2) 31/08/99 2) 14/09/99  2) 14/09/99  2) 14/09/99	687 687										

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**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content	: Dodine 400 g/l	Commercial Product (name)	: Syllit 400 SC
Crop/crop group	: Pome fruits / Apple	Producer of commercial product	: Chimac Agriphar
Responsible body for reporting (name, address)	: Rhône Poulenc Agro	Indoor/Glasshouse/Outdoor	: Outdoor
Country	: France	Residues calculated as	: Dodine

[illegible]

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Apple  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No	Study Id. no. Report no.	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight  (g)	PHI days	Residues (average) mg/kg	Remarks
	foliar treatment				Residues (average) mg/kg										
	a.s. g/ha				water l/ha	a.s. g/hl	dodine								
	Study 99-517  R&D/CRLD/ AN/mba/ 0015548  29-June-00  Aventis CropScience European Zone	6.3.1/19: 99517LY1 (reverse curve trial)  France (St Didier sous Riverie) South  South	Golden	1) 1989  2) 09/08/99 2) 06/09/99  2) 24/08/99 2) 06/09/99  2) 06/09/99											

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
Crop/crop group : Pome fruits / Apple  
Responsible body for reporting (name, address) : Rhône Poulenc Agro  
Country : France  
Commercial Product (name) : Syllit 400 SC  
Producer of commercial product : Chimac Agriphar  
Indoor/Glasshouse/Outdoor : Outdoor  
Residues calculated as : Dodine

No	Study Id. no. Report no.	Trial(s) no. (type of trial)	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight  (g)	PHI days	Residues (average) mg/kg	Remarks
	Date of delivery	Location			foliar treatment									dodine	
					a.s. g/ha	water l/ha	a.s. g/ha								
	Study 99-517  R&D/CRLD/ AN/mba/ 0015548  29-June-00  Aventis CropScience European Zone	6.3.1/20: 99517TL1 (reverse curve trial)  France (Castelnaudary) South  South	Golden	1) 1979  2) 06/08/99 2) 02/09/99  2) 20/08/99 2) 02/09/99  2) 02/09/99  2) 02/09/99	687 687										

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Pear  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment foliar treatment			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days or hours	Residues (average) mg/kg dodine	Remarks
					a.s. g/ha	water l/ha	a.s. g/ha							
	Study 98-678 R&D/CRLD/ AN/mr/ 9916264 12-August-99 Rhône-Poulenc Agro European Zone	6.3.2/01: 98678AM1 (Decline study)  France North	Conférence	1) 1991	898	391	230	17/06/98 (1)	BBCH					Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.050 mg/kg  * A4 : 4th treatment  ** NR : not reported
					958	417	230	01/07/98 (2)	72					
					898	391	230	15/07/98 (3)	BBCH					
					898	391	230	30/07/98 (4)	73					
				3) 30/07/98					BBCH	BBCH	fruit	before A4 *	1.5	
				3) 30/07/98					73	73	fruit	2 hours	2.1	
				3) 13/08/98					BBCH	BBCH	fruit	14	2.0	
				3) 25/08/98					73	73	fruit	26	1.3	
		6.3.2/02: 98678AM2 (Decline study)  France North	Conférence	3) 09/09/98					BBCH	BBCH	fruit	41	0.78	
				1) NR **	898	417	215	17/06/98 (1)	73					
					898	417	215	01/07/98 (2)	BBCH	BBCH				
					898	139	647	15/07/98 (3)	81	81				
					898	139	647	30/07/98 (4)	BBCH	BBCH				
									87	87				
				3) 30/07/98					BBCH	BBCH	fruit	A4 * - 1h	1.2	
				3) 30/07/98					72		fruit	2 hours	2.8	
				3) 12/08/98					BBCH	BBCH	fruit	13	1.0	
				3) 25/08/98					74	BBCH	fruit	26	0.61	
				3) 09/09/98					BBCH	BBCH	fruit	41	0.57	
									74	BBCH				
									BBCH	BBCH				
									75	BBCH				
									77	BBCH				
									BBCH	BBCH				
									85					



**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Pear  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no.	Trial(s) no. (type of trial)	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days or hours	Residues (average) mg/kg	Remarks					
	Report no.	Location																	
	Date of delivery Responsible body																		
	Study 98-678  R&D/CRLD/ AN/mr/ 9916264  12-August-99  Rhône-Poulenc Agro European Zone	6.3.2/03: 98678OR1 (Decline study)  France North	Williams	1) 1955  3) 01/07/98 3) 01/07/98 3) 15/07/98 3) 29/07/98 3) 11/08/98	898 898 898 898	667 667 667 667	135 135 135 135	19/05/98 (1) 04/06/98 (2) 17/06/98 (3) 01/07/98 (4)	BBCH 72 BBCH 73 BBCH 73-74 BBCH 74-75			before A4 *	0.53 1.2 0.44 0.18 0.065	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.050 mg/kg  * A4 : 4 <sup>th</sup> treatment					
		6.3.2/04: 98678OR2 (Decline study)  France North	Conférence	1) 1955  3) 22/07/98 3) 22/07/98 3) 05/08/98 3) 19/08/98 3) 01/09/98	898 898 898 898	917 717 717 717	98 125 125 125	09/06/98 (1) 24/06/98 (2) 08/07/98 (3) 22/07/98 (4)	BBCH 71-72 BBCH 73-74 BBCH 74-75 BBCH 75-76			A4 * - 1h	0.91 1.2 1.2 0.48 0.61						

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Pear  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no.	Trial(s) no. (type of trial)	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analyse d	PHI days or hours	Residues (average) mg/kg	Remarks
	Report no.				Location	foliar treatment	Residues (average) mg/kg							
													a.s. g/ha	
	Study 98-678  R&D/CRLD/ AN/mr/ 9916264  12-August-99  Rhône-Poulenc Agro European Zone	6.3.2/05: 98678AV1 (Decline study)  France South  6.3.2/06: 98678LY1 (Decline study)  France South	Alexandrine          Williams	1) 1991   3) 27/07/98 3) 27/07/98 3) 10/08/98 3) 24/08/98 3) 08/09/98  1) 1958   3) 08/07/98 3) 08/07/98 3) 21/07/98 3) 04/08/98	898 898 898 898      898 898 898 898	400 400 400 400      368 368 368 368	224 224 224 224      244 244 244 244	04/06/98 (1) 16/06/98 (2) 29/06/98 (3) 27/07/98 (4)	BBCH 74 BBCH 75 BBCH 755 BBCH 760  BBCH 760 BBCH 760 BBCH 790 BBCH 790 BBCH 87	      fruit fruit fruit fruit fruit	      A4 * - 2h 2 hours 14 28 43	      0.48 1.6 0.67 0.60 0.46      0.76 2.4 1.0 0.54	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.050 mg/kg  * A4 : 4th treatment	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Pear  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analyse d	Average unit weight  (g)	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl							dodine	
	study 99-518 R&D/CRLD/A N/bva/0015687  Aug 08-2000  Aventis CropScience European Zone	6.3.2/07: 99518OR1 (decline study trial)  France (St Pryve-St Mesmin) North  6.3.2/08: 99518OR2 (decline study trial)  France (Sigloy) North  North	Passe- crassane         William	1) 1965 2) 31/08/99 2) 31/08/99 2) 14/09/99 2) 27/09/99 2) 12/10/99  1) 1989 2) 30/06/99 2) 30/06/99 2) 13/07/99 2) 29/07/99 2) 11/08/99	908 908 908 908 908 908  909 909 909 909 909 909	1000 1000 1000 1000 1000 1000  714 714 714 714 714 714	91 91 91 91 91 91  127 127 127 127 127 127	20/07/99 (1) 03/08/99 (2) 17/08/99 (3) 31/08/99 (4)  20/05/99 (1) 02/06/99 (2) 16/06/99 (3) 30/06/99 (4)	BBCH 74-75 BBCH 76 BBCH 79 BBCH 79 BBCH 80 BBCH 81-85 BBCH 87-89  BBCH 71 BBCH 72-73 BBCH 74 BBCH 75	BBCH 79 BBCH 79 BBCH 79 BBCH 80 BBCH 81-85 BBCH 87-89  BBCH 75 BBCH 75 BBCH 77 BBCH 81 BBCH 87	fruit fruit fruit fruit fruit fruit  fruit fruit fruit fruit fruit fruit	n.r. n.r. n.r. n.r. n.r. n.r.  n.r. n.r. n.r. n.r. n.r. n.r.	2 hours * 2 hours 14 27 42  2 hours * 2 hours 13 29 42	0.80 1.4 1.1 0.54 0.42  1.2 3.5 0.88 0.37 0.27	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.010 mg/kg  * Before last application  n. r. : not relevant

WARNING: This document forms part of an EC evaluation data package and should not be used in isolation. Registration must not be granted on the basis of this document.

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Pear  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no.  Date of delivery  Responsible body	Trial(s) no. (type of trial)  Location	Variety	Date of 1) Sowing or planting 2) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analyse d	Averag e unit weight  (g)	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl							dodine	
	study 99-518 R&D/CRLD/A N/bva/001568 7 Aug 08-2000	6.3.2/09: 99518AV1 (decline study trial) France (Cabannes) South	Alexan- drine	1) 1991 2) 19/07/99 2) 19/07/99 2) 02/08/99 2) 16/08/99 2) 31/08/99	909 909 909 909	400 400 400 400	227 227 227 227	08/06/99 (1) 22/06/99 (2) 05/07/99 (3) 19/07/99 (4)	BBCH 725 BBCH 728 BBCH 730 BBCH 735	BBCH 735 BBCH 735 BBCH 75 BBCH 75 BBCH 87	fruit fruit fruit fruit fruit	n.r. n.r. n.r. n.r. n.r.	2 hours * 2 hours 14 28 43	1.0 1.1 1.7 0.40 0.12	Residues were found in trial 99518AV2 sampling point P1 (0.029 mg/kg)  Method of analysis : 45137 (doc KII 4.2.1/01)
	Aventis CropScience European Zone	6.3.2/10: 99518AV2 (decline study trial) France (Eyragues) South  South	Guyot	1) 03/1957 2) 03/06/99 2) 03/06/99 2) 17/06/99 2) 01/07/99 2) 19/07/99	909 909 909 909 909	437 437 437 437 437	208 208 208 208 208	19/04/99 (1) 05/05/99 (2) 19/05/99 (3) 03/06/99 (4)	BBCH 69 BBCH 71 BBCH 72 BBCH 73	BBCH 73 BBCH 73 BBCH 73-74 BBCH 75-76 BBCH 87	fruit fruit fruit fruit fruit	n.r. n.r. n.r. n.r. n.r.	2 hours * 2 hours 14 28 46	0.80 2.8 0.68 0.29 0.11	LOQ : 0.010 mg/kg  * Before last application  n. r. : not relevant

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Pear  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight (g)	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl							dodine	
	Study 99-518 R&D/CRLD/A N/bva/0015687 Aug 08-2000 Aventis CropScience European Zone	6.3.2/11: 99518LY1 (decline study trial) France (St Didier sous Riverie) South  6.3.2/12: 99518LY2 (decline study trial) France (Marcilly d'Azergues) South  South	William       Params	1) 02/1989 2) 06/07/99 2) 06/07/99 2) 20/07/99 2) 03/08/99 2) 16/08/99  1) 1960 2) 15/07/99 2) 15/07/99 2) 30/07/99 2) 12/08/99 2) 27/08/99	909 909 909 909   909 909 909 909	641 641 641 673   731 758 758 758	142 142 142 135   124 120 120 120	25/05/99 (1) 08/06/99 (2) 22/06/99 (3) 06/07/99 (4)   04/06/99 (1) 17/06/99 (2) 30/06/99 (3) 15/07/99 (4)	BBCH 72 BBCH 73 BBCH 74 BBCH 75 BBCH 81 BBCH 87  BBCH 72 BBCH 74 BBCH 75 BBCH 77	BBCH 75 BBCH 75 BBCH 76 BBCH 81 BBCH 87  BBCH 77 BBCH 77 BBCH 79 BBCH 81 BBCH 85	fruit fruit fruit fruit fruit  fruit fruit fruit fruit fruit	n.r. n.r. n.r. n.r. n.r.  n.r. n.r. n.r. n.r. n.r.	2 hours * 2 hours 14 28 41  2 hours * 2 hours 15 28 43	0.32 1.9 0.43 0.25 0.13  0.59 1.9 0.88 0.31 0.25	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.010 mg/kg  * Before last application  n. r. : not relevant

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Pear  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight (g)	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/ha							dodine	
	Study 99-518  R&D/CRLD/ AN/bva/001 5687 Aug 08-2000	6.3.2/13: 99518TL1 (decline study trial) France (Villeneuve du Pareage) South	Conference	1) 1962 2) 29/07/99 2) 29/07/99 2) 10/08/99 2) 24/08/99 2) 07/09/99	909 909 909 909	833 833 833	109 109 109	22/06/99 (1) 05/07/99 (2) 16/07/99 (3) 29/07/99 (4)	BBCH 73 BBCH 73 BBCH 73-75 BBCH 75	BBCH 75 BBCH 75 BBCH 77 BBCH 81-85 BBCH 87	fruit fruit fruit fruit fruit	n.r. n.r. n.r. n.r. n.r.	2 hours * 2 hours 12 26 40	0.50 1.7 0.42 0.26 0.18	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)
	Aventis CropScience European Zone	6.3.2/14: 99518TL2 (decline study trial) France (Bazus) South  South	Comices	1) 11/1990 2) 02/08/99 2) 02/08/99 2) 16/08/99 2) 30/08/99 2) 08/09/99	909 909 909 909	500 500 500 500	182 182 182	18/06/99 (1) 02/07/99 (2) 16/07/99 (3) 02/08/99 (4)	BBCH 74 BBCH 75 BBCH 75 BBCH 77	BBCH 77 BBCH 77 BBCH 81-85 BBCH 87 BBCH 89	fruit fruit fruit fruit fruit	n.r. n.r. n.r. n.r. n.r.	2 hours * 2 hours 14 28 37	0.49 0.52 0.22 0.16 0.11	LOQ : 0.010 mg/kg  * Before last application  n. r. : not relevant

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Pome fruits / Pear  
 Responsible body for reporting (name, address) : Phytopharmacy department  
 Country : Belgium

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Sampling	Application rate per treatment  foliar treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight (g)	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl							dodine	
	Study 20238  March 28- 2002  Belgian ministry of Agriculture Phyto- pharmacy department  (Volume 29)	6.3.2/15: 20238/1 (Harvest trial) Belgium (Gembloux) North  6.3.2/16: 20238/2 (Harvest trial) Belgium (Gembloux) North	Conference       Durondeau	2) 10/09/01       2) 10/09/01	871 766 787 896	334 295 303 345	260 260 260 260	02/07/01 (1) 16/07/01 (2) 30/07/01 (3) 13/08/01 (4)	BBCH 76 BBCH 77 BBCH 78 BBCH 79	BBCH 87       BBCH 87	fruit       fruit	n.r.       n.r.	28       28	0.37       0.45	Residues were less than LOQ in untreated samples  Method of analysis : MEREDODINE based on 45137 (doc KII 4.2.1/01)  LOQ : 0.05 mg/kg  n. r. : not relevant

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Report no. Date of delivery  Responsible body	Trial no. Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment		Dates of treatment(s) or number of treatment and last date	Growth stage at last treatment	Portion analysed	PHI hours / days	Residues (average) mg/kg	Remarks
					g a. i./ha	water l/ha					dodine	
	Study 97-547  R&D/CRLD AN/dbc/ 9815779  18-Aug-98  RPA France	6.3.3/01: 97547DJ1 Coulange- la-Vineuse (89) (France) North	Starking	1) 1986 3 ) 30-Apr-97  07-May-97 14-May-97 23-Jun-97	800	300	3/ 30-Apr-97	BBCH 74	fruit	hours 2 days 7 14 54	4.5  1.3 0.70 0.053	foliar treatment  method of analysis : 45137 (doc KII 4.2.1/01)
		6.3.3/02: 97547DJ2 Jussy (89) (France) North	Sunburst	1) 1987 3) 30-Apr-97  07-May-97 14-May-97 23-Jun-97	912 (T1) 800 (T2, T3)	342 (T1) 300 (T2, T3)	3/ 30-Apr-97	BBCH 75	fruit	hours 2 days 7 14 54	2.8  0.35 0.27 0.051	LOD : 0.050 mg/kg



**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Report no. Date of delivery Responsible body	Trial no. Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment (average)		Dates of treatment (s) or number of treatment and last date	Growth stage at last treatment	Portion analysed	PHI hours / days	Residues (average) mg/kg	Remarks
					g a. i./ha	water l/ha					dodine	
	study 97-548 &D/CRLD/ AN/vt/ 9815753  30-July-98  RPA France	6.3.3/03: 97548PAD1 Les Chères (69) (France) South	Bigarreau Van	1) 1986 3 ) 24-Apr-97  30-Apr-97 07-May-97 05-Jun-97	820 (T1) 811 (T2) 816 (T3)	405 (T1) 401 (T2) 403 (T3)	3 / 24-Apr-97	5 mm good, dry	fruit	hours 2 days 6 13 42	1.0  1.1 0.77 0.074	foliar treatment  method of analysis : 45137 (doc KII 4.2.1/01)  LOD : 0.050 mg/kg

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Report no. Date of delivery  Responsible body	Trial no. Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Harvest	Application rate per treatment		Dates of treatment (s) or number of treatment and last date	Growth stage at last treatment	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
					g a. i./ha	water l/ha					dodine	
	Study 97-549  R&D/CRLD/ AN/vt/ 9815754  30-July-98  RPA France	6.3.3/04: 97549DJ1 Coulange la vineuse (89) (France) North	Sunburst	1) 1991 3 ) 23-Jun-97	800	300	3 / 30-Apr-97	BBCH75	fruit	54	< 0.050	foliar treatment  method of analysis : 45137 (doc KII 4.2.1/01)  LOD : 0.050 mg/kg
		6.3.3/05: 97549DJ2 Jussy (89) (France) North	Starking	1) 1975 3 ) 23-Jun-97	800	300	3 / 30-Apr-97	BBCH75	fruit	54	0.060	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Report no. Date of delivery  Responsible body	Trial no. Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Harvest	Application rate per treatment		Dates of treatment (s) or number of treatment and last date	Growth stage at last treatment	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
					g a. i./ha	water l/ha					dodine	
	Study 97-550  R&D/CRLD/ AN/vt/ 9815752  21-August-98  RPA France	6.3.3/06: 97550PAD1 Les Cheres (69) (France) South	Lempereur	1) 1989 3 ) 26-May-97	819 (T1)	405 (T1)	3 / 24-Apr-97	5 mm, good, dry	fruit	32	0.083	foliar treatment  method of analysis : 45137 (doc KII 4.2.1/01)  LOD : 0.050 mg/kg
					803 (T2)	397 (T2)						
		6.3.3/07: 97550PAD2 Les Cheres (69) (France) South	Geant Hedelfingen	1) 1988 3 ) 13-Jun-97	809 (T3)	400 (T3)	3 / 30-Apr-97	swelling	fruit	44	<0.050	
					818 (T1)	404 (T1)						
					820 (T2)	405 (T2)						
					814 (T3)	402 (T3)						

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Harvest	Application rate per treatment (average) <b>foliar treatment</b>			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl						dodine	
	Study 98-510 R&D/CRLD/ AN/mr/ 9915470 4-May-99 Rhône-Poulenc Agro European Zone	6.3.3/08: 98510DJ1 (Harvest)  France North	Sunt	1) 1992	798	219	365	06/04/98 (1)	BBCH 60-61 BBCH 67 BBCH 75	BBCH 87	fruit (without stone) whole fruit	40	< 0.050  < 0.050	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.050 mg/kg
				3) 23/06/98	798	219	365	22/04/98 (2)						
					798	219	365	14/05/98 (3)						
		6.3.3/09: 98510AV1 (Harvest)  France South	Burlat	1) 15/02/78	798	250	319	23/03/98 (1)	BBCH61 BBCH 67 BBCH 73	BBCH 87- 89	fruit (without stone) whole fruit	21	0.152  0.136	
					798	250	319	10/04/98 (2)						
					798	250	319	29/04/98 (3)						
				3) 20/05/98										

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Planting 2) Flowering 3) Sampling	Application rate per treatment (average) foliar treatment			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl						dodine	
	Study 98-511 R&D/CRLD/ AN/mr/ 9915447 4-May-99 Rhône-Poulenc Agro European Zone	6.3.3/10: 98511DJ1 (decline study) France North	Sunburst	1) 1978  3) 14/05/98 3) 20/05/98 3) 28/05/98 3) 23/06/98	798 798 798	250 250 250	319 319 319	06/04/98 (1) 22/04/98 (2) 14/05/98 (3)	BBCH 60-61 BBCH 67 BBCH 75	BBCH 75 BBCH 76 BBCH 77 BBCH 87	whole fruit whole fruit whole fruit flesh whole fruit	2 hours 6 14 40 40	1.8 1.1 not analysed < 0.050 < 0.050	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.050 mg/kg
		6.3.3/11: 98511BX1 (decline study) France South	Sunburst	1) 1990  3) 11/05/98 3) 18/05/98 3) 25/05/98 3) 08/06/98	798 798 798	300 300 300	266 266 266	24/03/98 (1) 21/04/98 (2) 11/05/98 (3)	BBCH 61 BBCH 69 BBCH 73	BBCH 73 BBCH 77 BBCH 81 BBCH 89	whole fruit whole fruit whole fruit flesh whole fruit	2 hours 7 14 28 28	2.0 0.96 0.46 0.11 0.11	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment  foliar treatment			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Averag e unit weight (g)	PHI days	Residues (average ) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/ha							dodine	
	Study 99-514 R&D/CRLD/AN/ mba/0015213  March 20-2000  Aventis CropScience European Zone	6.3.3/12: 99514DJ1 (decline study)  France (Jussy) North	Sunburst	1) 1978  2) 10/05/99 2) 17/05/99 2) 26/05/99 2) 24/06/99	808 808 808	250 250 250	323 323 323	06/04/99 (1) 22/04/99 (2) 10/05/99 (3)	BBCH 61 BBCH 67 BBCH 73	BBCH 73 BBCH 73 BBCH 77-81 BBCH 89	fruit fruit fruit stoned fruit whole fruit*	n.a. n.a. n.a. n.a.	2 hours 7 16 45	1.8 1.2 0.70 0.060 0.055*	Residues were less than LOQ in untreated samples, except at PHI=12 days : 0.095 mg/kg in trial with variety stark  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.010 mg/kg  n.a. : not applicable  * residues determination obtained by calculation
		6.3.3/13: 99514TL1 (decline study)  France (Belcastel) South	Stark	1) 1991  2) 30/04/99 2) 07/05/99 2) 12/05/99 2) 11/06/99	808 808 808	600 600 600	135 135 135	29/03/99 (1) 09/04/99 (2) 30/04/99 (3)	BBCH 60 BBCH 67 BBCH 73	BBCH 73 BBCH 73-75 BBCH 75 BBCH 87-89	fruit fruit fruit stoned fruit whole fruit*	n.a. n.a. n.a. n.a.	2 hours 7 12 42	2.2 0.71 0.56 0.040 0.036*	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no.	Trial(s) no. (type of trial)	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment			Date(s) of treatment  (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight  (g)	PHI days	Residues (average) mg/kg	Remarks	
	Report no.				Location	foliar treatment								dodine		
						a.s. g/ha	water l/ha									a.s. g/hl
	Study 99-515  R&D/CRLD/AN/ bva/0015186  March 17-2000  Aventis CropScience European Zone	6.3.3/14: 99515TL1 (harvest study)  France (Villeneuve du Paréage) South	Burlat hâtive	1) 1991  2) 07/06/99	808 808 808	476 476 476	170 170 170	29/03/99 (1) 09/04/99 (2) 30/04/99 (3)	BBCH 59-60 BBCH 67 BBCH 73-75	BBCH 89	stoned fruit whole fruit *	n.a.	38	0.036 0.032 *	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.010 mg/kg  n.a. : not applicable  * residues determination obtained by calculation	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Cherry  
 Responsible body for reporting (name, address) : Phytopharmacy department  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Harvest	Application rate per treatment  foliar treatment			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	Average unit weight (g)	PHI days	Residues (average ) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/hl							dodine	
	Study 20253  April 16, 2002  Belgian ministry of Agriculture Phyto- pharmacy department (Analytics)  Promo-Vert SA (Field)	6.3.3/15: 01FARCHP07 (Harvest trial) France (Jussy) North	Marmotte	1) 1980	816 800 792	1022 998 990	80 80 80	07/05/01 (1) 21/05/01 (2) 05/06/01 (3)	BBCH 71 BBCH 76 BBCH 81	BBCH 85	whole fruit	n.a.	13	0.14	Residues were less than LOQ in untreated samples  Method of analysis : <b>MEREDODIN</b> E based on 45137 (doc KII 4.2.1/01)
				2) 18/06/01											
		6.3.3/16: 01FARCHP08 (Harvest trial) France (Murs) South	Sumit	1) 1981	768 796 792	914 945 942	84 84 84	03/05/01 (1) 17/05/01 (2) 31/05/01 (3)	BBCH 72 BBCH 74 BBCH 78	BBCH 89	whole fruit	n.a.	14	0.14	LOQ : 0.05 mg/kg  n. r. : not relevant
				2) 14/06/01											



**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Peach  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Report no. Date of delivery  Responsible body	Trial no. Location	Variety	Date of 1) Sowing or 2) Flowering 3) Sampling	Application rate per treatment		Dates of treatment (s) or number of treatment and last date	Growth stage at last treatment	Portion analysed	PHI days	Residues mg/kg (average)	Remarks
					g a. i./ha	water l/ha					dodine	
	Study 97-512  R&D/CRLD/A N/vt/ 9815751  30-July-98  RPA France	6.3.4/01: 97512AV1 Meynes (30) (France) South	Snow Queen	1) 1985 3) 27-May-97 11-Jun-97 27-Jun-97	900	234	5 / 24-Mar-97	BBCH71	fruit (whole)	64 79	< 0.050 < 0.050	foliar treatment
									fruit (flesh)	95	< 0.050	method of analysis : 45137 (doc KII 4.2.1/01)
									fruit (whole)	95	< 0.050	
		6.3.4/02: 97512TL1 Boulac (31) (France) South	Maycrest	1) 1988 3) 14-May-97 27-May-97 05-Jun-97	900	952	5 / 17-Mar-97	BBCH69	fruit (whole)	58 71	0.063 0.073	LOD : 0.050 mg/kg
									fruit (flesh)	80	< 0.050	
									fruit (whole)	80	< 0.050	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Peach  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France

Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Report no. Date of delivery	Trial no. Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Harvest	Application rate per treatment		Dates of treatment (s) or number of treatment and last date	Growth stage at last treatment	Portion analysed	PHI days	Residues mg/kg	Remarks
					g a.i./ha	water l/ha					dodine	
	Study 97-513  R&D/CRLD/ AN/vt/ 9815816  30-July-98  RPA France  (Volume 31)	6.3.4/03: 97513AV1 Barbentane (13) (France) South  6.3.4/04: 97513BX1 Ste Bazeille (47) (France) South	Silverking       Royal Glory	1) 1992 3) 09-Jun-97   1) 1990 3) 24-Jun-97	900	457	5 / 14-Mar-97	BBCH 67-69	fruit (without stone)	87	< 0.050	foliar treatment  method of analysis : 45137 (doc KII 4.2.1/01)  LOD : 0.050 mg/kg
					900	333 (T1)  288 (T2, T3, T4, T5)	5 / 10-Apr-97	BBCH 74	fruit (without stone)	75	< 0.050	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Peach  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Harvest	Application rate per treatment (average) foliar treatment			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/ha						dodine	
	Study 98-530 R&D/CRLD/ AN/mr/ 9915353 5-May-99 Rhône-Poulenc Agro European Zone (Volume 31)	6.3.4/05: 98530LY1 (harvest)  France South	Redwing	1) 03/1987   3) 21/07/98	898 898 898 898 898	252 252 252 252 252	356 356 356 356 356	16/02/98 (1) 06/03/98 (2) 13/03/98 (3) 19/03/98 (4) 06/04/98 (5)	BBCH 01 BBCH 09 BBCH 61 BBCH 65 BBCH 69	BBCH 89	flesh	106	< 0.050 *	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.050 mg/kg  * No residues were detected (< limit of detection (0.010 mg/kg))
		6.3.4/06: 98530LY2 (harvest)  France South	Barbara	1) 03/1986   3) 08/07/98	898 898 898 898 898	320 352 352 352 352	281 255 255 255 255	19/02/98 (1) 06/03/98 (2) 13/03/98 (3) 19/03/98 (4) 06/04/98 (5)	BBCH 01 BBCH 09 BBCH 57-60 BBCH 65 BBCH 69	BBCH 87	flesh	93	< 0.050 *	

**Dodine – Annex B – Residues**

**Table B.7-15 - Residue trials (cont.)**

Active substance and content : Dodine 400 g/l  
 Crop/crop group : Stone fruits / Peach  
 Responsible body for reporting (name, address) : Rhône Poulenc Agro  
 Country : France  
 Commercial Product (name) : Syllit 400 SC  
 Producer of commercial product : Chimac Agriphar  
 Indoor/Glasshouse/Outdoor : Outdoor  
 Residues calculated as : Dodine

No.	Study Id. no. Report no. Date of delivery Responsible body	Trial(s) no. (type of trial) Location	Variety	Date of 1) Sowing or planting 2) Flowering 3) Sampling	Application rate per treatment (average) foliar treatment			Date(s) of treatment (treatment no.)	Growth stage at treatment	Growth stage at sampling	Portion analysed	PHI days	Residues (average) mg/kg	Remarks
					a.s. g/ha	water l/ha	a.s. g/ha						dodine	
	Study 98-531 R&D/CRLD/ AN/dbe/ 9915475 05-May-99 Rhône-Poulenc Agro European Zone (Volume 31)	6.3.4/07: 98531BX1 (Decline study)  France South  6.3.4/08: 98531TL1 (Decline study)  France South	Daisy	1) 01/1990  3) 20/05/98 3) 17/06/98 3) 07/07/98	898	444	202	10/02/98 (1)	BBCH 02	BBCH 74 BBCH 76 BBCH 89	fruit fruit fruit (without stone) whole fruit	57 85 105	0.053 < 0.050* < 0.050* < 0.050*	Residues were less than LOQ in untreated samples  Method of analysis : 45137 (doc KII 4.2.1/01)  LOQ : 0.050 mg/kg  *No residues were detected (< limit of detection (0.010 mg/kg))
					898	444	202	26/02/98 (2)	BBCH 10					
					898	444	202	06/03/98 (3)	BBCH 60					
					898	444	202	17/03/98 (4)	BBCH 67					
					898	444	202	24/03/98 (5)	BBCH 69					
			Maycrest	1) 01/02/88  3) 10/06/98	898	952	94	13/02/98 (1)	BBCH 01-03	BBCH 85-87	fruit (without stone) whole fruit	76	< 0.050* < 0.050*	
					898	952	94	24/02/98 (2)	BBCH 09-10					
					898	952	94	03/03/98 (3)	BBCH 57-59					
					898	952	94	16/03/98 (4)	BBCH 67					
					898	952	94	26/03/98 (5)	BBCH 69					

Legend to tables 1 to 37:

North = Northern (climatically defined) part of the European Union member states  
 South = Southern (climatically defined) part of the European Union member states

## B.7.7 Effects of industrial processing and/or household preparation (Annex IIA 6.5; Annex IIIA 8.4)

### B.7.7.1 Effects on the nature of the residues

#### Nature of the residue of $^{14}\text{C}$ dodine after thermal processing.

Noorloos, B. van (2004)

#### Guidelines

EU Dir. 91/414, Working Document 7035/VI/95 rev.5 (1997): processing studies

#### GLP

Yes

#### Materials and methods

ISO common name: dodine; IUPAC name: 1-dodecylguanidinium acetate; cold Technical substance: batch 005/044/01.01, purity 98.6%, radio labelled technical substance (labelled on the guanidine group): batch 011009, radiochemical purity 100%.

The goal of this study was to establish whether or not breakdown or reaction products arise from residues of dodine in the fruits during thermal processing.

The following processing practices were simulated by aqueous hydrolysis conditions without the presence of fruit matrices according to the guidelines:

- Pasteurisation: 90°C and pH 4 during 20 min.
- Sterilisation: 121°C and pH 6 during 20 min.
- Baking/brewing/boiling: 100°C and pH 5 during 60 min.

Temperature and pH were monitored regularly during the test. After processing, HPLC and LSC were used for analysis of test solutions and determination of radioactivity.

#### Findings

Expected temperature and pH were achieved according to the protocol. The mass balances were 98.7% (pH 4, 90°C), 92.9% (pH 5, 100°C) and 96.9% (pH 6, 121°C) of the applied radioactivity and thus within the range of acceptability of 90-110% (see B.7-16). The radioactivity in each of the test solutions was within the range 82.2-97.1% of the applied, indicating that almost all radioactivity remained in the test solutions during processing.

**Table B.7-16- Recovery of the applied radioactivity in the various fractions (% of applied)**

Processing	Test solution	Rinsates	Extracts of the foam trap	Mass balance
pH 4, 90°C	97.1	1.5	0.1	98.7
pH 5, 100°C	82.2	9.8 <sup>1</sup>	0.9	92.9
pH 6, 121°C	94.7	1.9	0.3	96.9

<sup>1</sup>. First rinsate: 9.6%. Second rinsate: 0.2%

All test solutions as well as the first rinsate of the flask that had been at 100°C for 60 min. were subjected to HPLC on the day of sampling. The percentage of the parent compound dodine was 100% in all test solutions and in the flask rinsate. Dodine is therefore considered hydrolytically stable at elevated temperatures and pH 4, 5 or 6.

### B.7.7.2 Effects on the level of residues

#### **Magnitude of the residue of Dodine (n-dodecylguanidine acetate) in/on apple processed fractions after ground treatment with Syllit 65W.**

Wargo J.P. (1996)

#### Guidelines

FIFRA O-171-4 (k)

#### GLP

Yes

#### Materials and methods

Test material: ISO common name: dodine; IUPAC name: 1-dodecylguanidinium acetate; formulated as a 65% WP, batch 09JK0107-3, purity: 63.4%; crop tested: Apple, Twenty Ounce variety, in an orchard located in the state of New-York / USA.

The goal of this study was to generate magnitude of residue on apple and apple processed fractions.

During the field phase, Syllit 65% WP was applied 6 times at a rate of ca. 7.3 kg a.s./ha by foliar spraying. All fruit samples were collected 7 days after the last application. The samples were processed the day after into fresh juice and wet pomace using procedures which closely simulate commercial practices. Whole fruit samples were also collected. Samples were frozen immediately after processing. The freezer storage interval for these samples was approx 14 months but dodine was shown to be stable in freezer during this period.

#### Findings:

Dodine levels in the untreated control samples were below the LOQ of 0.05 ppm. The overall mean recoveries of dodine from fortified untreated control samples of apple processed fractions was 80.9% ( $\pm 9.6$ , n=2) for whole apples, 106.25% ( $\pm 13.95$ , n=2) for juice and 94.4% (n=1) for wet pomace. Treated apple processed fraction samples showed a mean residue value of 1.67 ppm in the starting whole apples, 0.13 ppm in the juice and 7.77 ppm in the wet pomace.

**Table B.7-17 - Mean residues of dodine in apple processed fractions following treatment with Syllit 65 WP.**

Matrix	Mean dodine residue (ppm)	Range of dodine residue (ppm)
Whole apples	1.52 $\pm$ 0.42	0.91 to 1.81
Apple-juice	0.13 $\pm$ 0.01	0.12 to 0.13
Apple wet pomace	7.77 $\pm$ 0.62	7.33 to 8.21

#### Conclusions

These results show that the residue does increase in the wet pomace (concentration factor of 5) with very little residue found in the juice (reduction factor of 12).

### **B.7.8 Livestock feeding studies (Annex IIA 6.4; Annex IIIA 8.3)**

If we consider the residue in pomace of 4,65mg/kg obtained with the highest residue in apples - 0.93 mg/kg and the concentration factor (from apple into pomace) of 5, the intake calculation gives 20 mg/kg diet/day on a dry weight basis. Total radioactive residues in the goat tissues from the goat metabolism study, were higher in the liver (0.17 ppm) and kidney (0.11 ppm).

## Dodine – Annex B – Residues

These two facts seem to be sufficient to require a feeding study, however the metabolism study in lactating goat, using 13 ppm in the diet indicate that dodine was a minor component in all edible tissues (0.001 mg/kg in muscle, 0.004 mg/kg in liver and 0.003 mg/kg in kidney) and was not present in milk.

Even if the dose fed to the goats in the metabolism studies was double, the dodine residue values in the edible tissues would be below 0.01 mg/kg.

The other metabolites found in the metabolism of the goat are three alkyl guanidine carboxylic acids (dodecyl guanidine carboxylic acid, octylguanidine carboxylic acid and hexylguanidine carboxylic acid, representing ppm), however these are considered metabolites of no toxicological relevance and that's the reason why we can conclude that the residues resulting from a livestock feeding study should also not be of concern.

### B.7.9 Residues in succeeding crops (Annex IIA 6.6; Annex III 8.5)

Attending to the proposed uses (fruit trees); no evaluation is needed in this matter as there are no rotational crops.

### B.7.10 Proposed pre-harvest intervals for envisaged uses, or withholding periods, in the case of post-harvest uses (Annex IIA 6.8; Annex IIIA 8.7)

The pre-harvest intervals proposed are:

Apples and pears: 28 days;

Cherries: 14 days;

Peaches: 75 days.

### B.7.11 Community MRLs and MRLs in E.U. Member States (Annex IIA 12.2)

EU MRLs were set in Dir. 88/298 EEC, 16/5/88 (Table B.7-18)

**Table B.7-18 - Community MRLs**

Commodity	Community MRL (mg/kg)
Pome fruits (apple, pear, others)	1.0
Stone fruits (peach, cherry, plums, others)	1.0
Other fruit and vegetables	0.2

### B.7.12 Proposed EU MRLs and justification for the acceptability of those MRL (Annex IIA 6.7; Annex IIIA 8.6)

#### B.7.12.1 Apples

MRL proposal: 1 mg/kg.

North E.U.: Eight residue trials (five treatments with 678-687 g a.s./ha; 85-195 g a.s./hl; PHI:28 days).

Residue values: 0.088, 0.114, 0.121, 0.160, 0.180, 0.263, 0.277, 0.383mg/kg.

South E.U: Eight residue trials (five treatments with 678-687 g a.s./ha; 82-285 g a.s./hl; PHI:28 days )

Residue values: 0.126, 0.267, 0.303, 0.310, 0.357, 0.440, 0.727, 0.930mg/kg.

## **Dodine – Annex B – Residues**

North and South: R max: 0.89mg/kg; R(ber): 1.367mg/kg; STMR: 0.27mg/kg.

### **B.7.12.2 Pears**

MRL proposal: 1 mg/kg.

North E.U.: Eight residue trials (four treatments with 741-909 g a.s./ha; 91-260 g a.s./hl; PHI:28 days).

Residue values: 0.180, 0.370, 0.370, 0.480, 0.540, 0.610, 1.3mg/kg.

South E.U. : Eight residue trials (four treatments with 898-909 g a.s./ha; 109-227 g a.s./hl; PHI:28 days)

Residue values: 0.160, 0.250, 0.260, 0.290, 0.310, 0.4, 0.54, 0.6.

North and South: R max: 1.12; R(ber): 1.08; STMR: 0.39mg/kg.

### **B.7.12.3 Cherries**

MRL proposal: 1 mg/kg.

North E.U.: Four residue trials (three treatments with 792-912 g as./ha; 80-323 g a.s./hl; PHI:14 days).

South E.U : Four residue trials (four treatments with 898-909 g a.s./ha; 84-319 g a.s./hl; PHI:14 days)

Residue values: 2x0.14, 0.27, 0.46, 0.56, 2x0.7, 0.77 mg/kg.

North and South: R max: 1.29mg/kg; R(ber): 1.4mg/kg; STMR: 0.51mg/kg

### **B.7.12.4 Peaches**

MRL proposal: 0.1 mg/kg (for a 75 days PHI).

There are only two residue trials from the South of the E.U. according to the proposed GAP (five treatments with 95 and 202 g a.s./hl. Residue values: 0.053, 0.063 mg/kg.

There are no sufficient data to propose an MRL for the proposed GAP.

For a PHI of 75 days and considering also the higher concentrations (>25%), we have seven residue trials (94-272 g a.s./hl, PHI 71-93 days). Residue values: 6x<0.05 mg/kg, 0.073. Rmax: 0.08mg/kg; R(ber): 0.12mg/kg; STMR: 0.05mg/kg.

### **B.7.13 Proposed EU Import tolerances and justification for the acceptability of those residues**

There are no import tolerances for dodine.

### **B.7.14 Basis for differences, if any, in conclusions reached having regard to established or proposed CAC MRLs**

The CAC MRLs are in table B.7-19.



**Table B. 7-19 - CAC MRLs**

Commodity	CODEX MRL (mg/kg)
pome fruit	5
peach	5
cherries	3
nectarine	5

#### B.7.14.1 Apples and pears

The CAC MRL of 5 mg/kg for pome fruit was established considering the GAP from USA (6x0,75-2,2 kg a.s./ha; 0.07-0.43 g a.s./hl; 7 days PHI), more critical than the EU GAP.

#### B.7.14.2 Peaches

The CAC MRL of 5 mg/kg for peaches was established considering the GAP from USA (5x1,5-3 kg a.s./ha; 0.07-0.31 kg a.s./hl; 15 days PHI), more critical than the EU GAP.

#### B.7.14.3 Cherries

The CAC MRL of 3 mg/kg for cherries was based on a GAP from Canada (6x1,5 kg a.s./ha; 0.07-0.22 kg a.s./hl; 7 days PHI), more critical than the EU GAP.

#### B.7.15 Estimates of potential and actual dietary exposure through diet and other means (Annex IIA 6.9; Annex IIIA 8.8)

The estimates have been carried out using the LMR and the STMR values. The WHO Standard European diet, the Portuguese diet and the UK Pesticide Safety Directorate Chronic Consumer Risk Assessment Model (ver.1.0) were considered.

**Table B. 7-20 - Chronic risk assessment (TMDI) for Portuguese consumers (60 kg bw).**

Commodity	dodine (mg/kg)	consumption (kg/day)	TMDI (mg/kg bw/day)	% of ADI
apples	1	0.0630	0.0630	1.05
pears	1	0.0203	0.0203	0.34
cherries	1	0.0022	0.0022	0.04
peaches	0.1	0.021	0.0021	0.04
<b>TOTAL</b>			<b>0.09</b>	<b>1.47</b>
<b>TMDI =</b>	<b>0.0015</b>			
<b>ADI =</b>	<b>0.1</b>	mg/kg/day		
	<b>1.47</b>	% of ADI		

**Table B. 7-21 - Chronic risk assessment (TMDI) for European consumers (60 kg bw).**

Commodity	dodine (mg/kg)	consumption (kg/day)	TMDI (mg/kg bw/day)	% of ADI
apples	1	0.040	0.040	0.67
pears	1	0.011	0.0113	0.19
cherries	1	0.003	0.003	0.05
peaches	0.1	0.013	0.0013	0.02
<b>TOTAL</b>			<b>0.06</b>	<b>0.93</b>
<b>TMDI =</b>		<b>0.0009</b>		
<b>ADI =</b>		<b>0.1</b> mg/kg/day		
		<b>0.93</b> % of ADI		

**Table B. 7-22 - Chronic risk assessment (IEDI) for European consumers (60 kg bw).**

Commodity	dodine (mg/kg)	consumption (kg/day)	IEDI (mg/kg bw/day)	% of ADI
apples	0.27	0.04	0.0108	0.18
pears	0.39	0.011	0.0044	0.07
cherries	0.51	0.003	0.002	0.03
peaches	0.05	0.013	0.0006	0.01
<b>TOTAL</b>			<b>0.02</b>	<b>0.3</b>

<b>IEDI =</b>	<b>0.0003</b>	mg/kg bw day
<b>ADI =</b>	<b>0.1</b>	mg/kg/day
	<b>0.3</b>	% of ADI

**Table B. 7-23 – Chronic risk assessment for Portuguese (IEDI) consumers ( 60 kg bw)**

Commodity	dodine (mg/kg)	Consumption (kg/day)	NEDI	% of ADI
apples	0.27	0.063	0.01701	0.28
pears	0.39	0.0203	0.007917	0.13
cherries	0.51	0.0022	0.001122	0.02
peaches	0.05	0.0214	0.001070	0.02
<b>TOTAL</b>			<b>0.03</b>	<b>0.45</b>

<b>NEDI =</b>	<b>0.0005</b>	mg/kg bw/day
<b>ADI =</b>	<b>0.1</b>	mg/kg/day
	<b>0.45</b>	% do ADI

**Table B. 7-24– PSD Chronic risk assessment model (total intake based on 97.5th percentile)**

	ADULT	INFANT	TODDLER	4-6 YEARS	7-10 YEARS	11-14 YEARS	15-18 YEARS	VEGE-TARIAN	ELDERLY (OWN HOME)	ELDERLY (RESIDENTIAL)
mg/kg bw/day	0.00127	0.00331	0.00657	0.00397	0.00290	0.00183	0.00153	0.00164	0.00148	0.00076
% of ADI	1%	3%	7%	4%	3%	2%	2%	2%	1%	<1%

### Conclusions

Considering the Acceptable Daily Intake of 0.1 mg/kg bw/day and the chronic risk assessment calculations it can be concluded that only a small percentage (0.3-7%) of the ADI is reached with the proposed uses.

## **B.7.16 Summary and evaluation of residue behaviour (Annex IIA 6.10; Annex IIIA 8.9)**

### Metabolism in plants

In plants (apples, strawberries and pecans), dodine is the residue of concern and it is degraded to terminal residues of guanidine or urea. Dodine accounted for 79% TRR in apples; about 80% of the residues were associated with apple peels. In strawberries dodine represented 85-89% TRR. In pecans the major metabolite was guanidine (36% TRR); dodine represents 13.2% TRR and urea 4.4% TRR.

The terminal carbon of the dodecyl chain of dodine is oxidized to a carboxyl group and then the chain is degraded, apparently two carbon atoms at a time, consistent with  $\beta$ -oxidation, until all that remains are the terminal metabolites: guanidine and urea.

### Metabolism in livestock

In goats dodine was extensively metabolized. After dosing 13 ppm in the diet, 68% TRR was excreted in urine and faeces and 0.05% in milk (0.014 ppm), while less than 1% remained in the edible tissues (0.020 ppm in muscle, 0.11 ppm in kidney and 0.17 ppm in liver). In these tissues dodine was present in small percentages ( $\leq 5.2\%$ ,  $\leq 0.004$  ppm). No dodine was detected in milk. Urea was present in all the edible tissues. Alkyl guanidine carboxylic acids (dodecylguanidine carboxylic acid, octylguanidine carboxylic acid and hexylguanidine carboxylic acid) were the largest portion of the residue in the edible meat tissues (52% TRR -  $\leq 0.01$  ppm in muscle), 41% TRR -  $\leq 0.07$  ppm in liver and 50% TRR -  $\leq 0.05$  ppm in kidney). The presence in those metabolites of the carboxylic acid groups at the distal end of the alkyl group, besides the quaternary amine, makes them unlikely to share any of the biological effects of dodine and are not expected to have dodine toxicity. Being so, the proposed residue definition for products of animal origin should be also dodine.

### Residue trials and LMR proposals

The intended GAP for apples and pears for the North and South of E.U. is: max. 5x0.045-0.18kg a.s./hl; PHI of 28 days.

For apples there are 16 acceptable residue trials, located in France (in 1998 e 1999). Eight are from the North and eight from the South. The residues found in the whole fruit are for the North: 0.088, 0.114, 0.121, 0.160, 0.180, 0.263, 0.277, 0.383 mg/kg; and for the South: 0.126, 0.267, 0.303, 0.310, 0.357, 0.440, 0.727, 0.930 mg/kg. Considering together the North and South, the  $R_{max}$  is 0.89mg/kg, the  $R(ber)$  is 0.74mg/kg, the STMR: 0.27mg/kg and the HR:0.93mg/kg. The MRL proposal is:1 mg/kg.

There are also 16 acceptable residue trials in pears, located in France (in 1998, 1999 and 2001). Eight are from the North and eight from the South. The residues in the whole fruit are: North: 0.180, 2x0.370, 0.450, 0.480, 0.540, 0.610, 1.300 mg/kg; South: 0.160, 0.250, 0.260, 0.290, 0.310, 0.400, 0.540, 0.600 mg/kg. Considering the North and South the  $R_{max}$  is 1.12, the  $R(ber)$  is 1.08, the STMR is 0.39mg/kg and the HR is 1.3 mg/kg. The MRL proposal is:1 mg/kg.

For cherries the intended GAP for the North and South of E.U. is: max. 3x0.05-0.16kg a.s./hl; PHI of 14 days.

## **Dodine – Annex B – Residues**

The acceptable data base contains eight residue trials located in France (in 1997, 1998, 1999 and 2001). Four are from the North and four from the South. The residues in the whole fruit are for the North/South: 2x0.14, 0.27, 0.46, 0.56, 2x0.70, 0.77 mg/kg. The R<sub>max</sub> is 1.29mg/kg, the R<sub>(ber)</sub> is 1.4mg/kg, the STMR is 0.51mg/kg and the HR is 0.77mg/kg. The MRL proposal is 1 mg/kg.

For peaches the intended GAP is for the South of E.U. is: max. 5x0.06-0.18kg a.s./hl; PHI of 60 days.

The acceptable data base contains two residue trials located in the South of France (in 1997 and 1998). The residues in the whole fruit are: 0.053 and 0.063 mg/kg. For this PHI we have only two more trials, but with a higher concentration of application (>than 25%), giving residues < 0.05 mg/kg. For a PHI of 75 days and considering also the higher concentrations (>25%), we have seven residue trials (94-272 g a.s./hl, PHI of 71-93 days), located in France (1997 and 1998). Residue values: 6x<0.05, 0.073mg/kg. The R<sub>(ber)</sub> is 0.12mg/kg the STMR:0.05mg/kg and the HR:0.073 mg/kg. The MRL proposal is 0.1 mg/kg (for a 75 days PHI).

### Stability of the residues

The storage stability of the residue of dodine was evaluated in two studies. The residue was stable in apple, apple juice, apple wet pomace, peaches and cherries when stored at -18/-20°C, during 18 months.

Derivatized dodine showed to be stable in the pear and cherry extracts for at least 5 days at ambient temperature.

### Livestock feeding studies

Fruit pomace can represent 10 or 30% in the feed intake of dairy cattle and beef cattle, respectively. If we consider the residue in pomace of 4,65mg/kg obtained with the highest residue in apples - 0.93 mg/kg and the concentration factor (from apple into pomace) of 5, the intake calculation gives 20 mg/kg diet/day on a dry weight basis. Total radioactive residues in the goat tissues from the goat metabolism study, were 0.17 ppm in the liver and 0.11 ppm in kidney.

According to this a livestock feeding study seemed to be necessary to determine the residue in products of animal origin. However it seems unessential if we consider the following:

- the metabolism study in lactating goat, using 13 ppm in the diet indicate that dodine was a minor component in all edible tissues (0.004 mg/kg in the liver and 0.003 mg/kg in kidney) and was not present in milk;
- even if the dose fed to the goats in the metabolism studies was double (2x13 ppm), considering that the calculated intake of pomace is 20 mg/kg diet/day, the dodine residue values in edible tissues and milk would be below 0.01 mg/kg;
- the other metabolites found in the metabolism of the goat are three alkyl guanidine carboxylic acids (dodecyl guanidine carboxylic acid, octylguanidine carboxylic acid and hexylguanidine carboxylic acid, representing 52% TRR in muscle, 44% TRR in liver and 55% TRR in kidney), however, the presence in those metabolites of the carboxylic acid groups at the distal end of the alkyl group, besides the quaternary amine, makes them unlikely to share any of the biological effects of dodine and are not expected to have dodine toxicity.

Being so, the proposed residue definition for products of animal origin must be dodine.

### Effects of industrial processing

Treated apple processed fraction samples showed a mean residue value of 1.67 ppm in the whole apples, 0.13 ppm in the juice (reduction factor of 12) and 7.77 ppm in the wet pomace (concentration factor of 5).

## **Dodine – Annex B – Residues**

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### Risk assessment

Considering the Acceptable Daily Intake of 0.1 mg/kg bw/day and the chronic risk assessment estimative, it can be concluded that only a small percentage (0.3-7%) of the ADI is reached with the intended uses for dodine.

WARNING: This document forms part of an EC evaluation data package and should not be read in isolation. Registration must not be granted on the basis of this document.

**Dodine – Annex B – Residues**

**B.7.17 References relied on**

<b>Annex point / reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No GLP or GEP status (where relevant), Published or not</b>	<b>Data Protection claimed Y/N</b>	<b>Owner</b>
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**Annex IIA**

IIA, 6.0/01	Yang J.	1998	Storage stability of the residue of Dodine (n-dodecylguanidine acetate) in/on fruits and their processed fractions. Rhone Poulenc Ag Company / USA ,EC-96-357 GLP Unpublished	Y	CAG
IIA, 6.0/02	Zenide D.	2001	Dodine : Freezer storage stability in apples and cherries. BATTELLE / Switzerland, 98-174 (ID # A-01-99-02) GLP Unpublished	Y	CAG
IIA, 6.1/01	Mohseni R., Ewing A. et al.	1992	A metabolism study with C14 Dodine on apples, PTRL-West Inc / USA, 286W-1 GLP Unpublished	Y	CAG
IIA, 6.1/02	Mohseni R., Kimmel E.C. et al.	1993	A metabolism study with C14 Dodine on strawberries PTRL-West Inc / USA 287W-1 GLP Unpublished	Y	CAG
IIA, 6.1/03	Baker F., McKemie D., Kimmel E.C.	1998	A metabolism study with C14 Dodine on pecans PTRL-West Inc / USA 643W-1 GLP Unpublished	Y	CAG
IIA, 6.2/01	Langford-Pollard A.D.	1996-	14C-Dodine : metabolism in the goat. Huntingdon Life Sciences / UK RNP477/961299 GLP Unpublished	Y	CAG
IIA, 6.3.1/01-04	Maestraci M.	1998	Dodine : formulation EXP10343A (SC). Trials France 1997. Residues in apple. Decline study. (season 1997) Rhone Poulenc Agro / France 97-528 GLP Unpublished	Y	CAG
IIA, 6.3.1/05-12	Baudet L., Yslan F.	1999	Dodine : formulation EXP10343A (SC). North/France 1998 – 4 reverse curve trials, South/France 1998 – 4 reverse curve trials. Residues in apple (fruit). (season 1998) Rhone Poulenc Agro / France 98-677 GLP Unpublished	Y	CAG

**Dodine – Annex B – Residues**

<b>Annex point / reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No GLP or GEP status (where relevant), Published or not</b>	<b>Data Protection claimed  Y/N</b>	<b>Owner</b>
IIA, 6.3.1/13-20	Venet C., Yslan F.	2000	Dodine : formulation EXP10343A (SC). North/France 1999 – 4 reverse curve trials, South/France 1999 – 4 reverse curve trials. Residues in apple (fruit). (season 1999) Rhone Poulenc Agro / France 99-517 GLP Unpublished	Y	CAG
IIA, 6.3.2/01-06	Baudet L., Yslan F.	1999	Dodine : formulation EXP10343A (SC). North/France 1998 – 4 decline study trials, South/France 1998 – 4 decline study trials. Residues in pear (fruit). (season 1998) Rhone Poulenc Agro / France 98-678 GLP Unpublished	Y	CAG
IIA, 6.3.2/07-14	Venet C., Yslan F.	2000	Dodine : formulation EXP10343A (SC). North/France 1999 – 2 decline study trials, South/France 1999 – 6 decline study trials. Residues in pear (fruit). (season 1999) Rhone Poulenc Agro / France 99-518 GLP Unpublished	Y	CAG
IIA, 6.3.2/15-16	Pigeon O.	2002	Determination of residues of dodine in pear after treatment with Syllit. Final report. (season 2001) Department de phytopharmacie / Belgium 20238 GLP Unpublished	Y	CAG
IIA 6.3.3/01-02	Maestracci M.	1998	Dodine : formulation EXP10343A (SC). Trials France 1997. Residues in cherry. Decline study. (season 1997) Rhone Poulenc Agro / France 97-547 GLP Unpublished	Y	CAG
IIA, 6.3.3/03	Maestracci M.	1998	Dodine : formulation EXP10343A (SC). Trials France 1997. Residues in cherry. Decline study. (season 1997) Rhone Poulenc Agro / France 97-548 GLP Unpublished	Y	CAG
IIA 6.3.3/04-05	Maestracci M.	1998	Dodine : formulation EXP10343A (SC). Trials France 1997. Residues in cherry. (season 1997) Rhone Poulenc Agro / France 97-549 GLP Unpublished	Y	CAG
IIA,	Maestracci M.	1998	Dodine : formulation EXP10343A (SC).	Y	CAG

**Dodine – Annex B – Residues**

<b>Annex point / reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No GLP or GEP status (where relevant), Published or not</b>	<b>Data Protection claimed  Y/N</b>	<b>Owner</b>
6.3.3/06-07			Trials France 1997. Residues in cherry. (season 1997) Rhone Poulenc Agro / France 97-550 GLP Unpublished		
IIA, 6.3.3/08-09	Baudet L., Yslan F.	1999	Dodine : formulation EXP10343A (SC). North/France 1998 – 1 harvest trial, South/France 1998 – 1 harvest trial. Residues in cherry (flesh). (season 1998) Rhone Poulenc Agro / France 98-510 GLP Unpublished	Y	CAG
IIA, 6.3.3/10-11	Baudet L., Yslan F.	1999	Dodine : formulation EXP10343A (SC). North/France 1998 – 1 decline study trial, South/France 1998 – 1 decline study trial. Residues in cherry (whole fruit, flesh). (season 1998) Rhone Poulenc Agro / France 98-511 GLP Unpublished	Y	CAG
IIA, 6.3.3/12-13	Venet C., Yslan F.	2000	Dodine : formulation EXP10343A (SC). North/France 1999 – 1 decline curve trial, South/France 1999 – 1 decline curve trial. Residues in cherry (fruit and stoned fruit). (season 1999) Rhone Poulenc Agro / France 99-514 GLP Unpublished	Y	CAG
IIA, 6.3.3/14	Venet C., Yslan F.	2000	Dodine : formulation EXP10343A (SC). South/France 1999 – 1 harvest trial. Residues in cherry (stoned fruit). (season 1999) Rhone Poulenc Agro / France 99-515 GLP Unpublished	Y	CAG
IIA, 6.3.3/15-16	Pigeon O.	2002	Determination of residues of dodine in cherry after treatment with dodine 400SC. (season 2001) Department of phytopharmacy / Belgium 20253 GLP Unpublished	Y	CAG
IIA, 6.3.4/01-02	Maestracci M.	1998	Dodine : formulation EXP10343A (SC). Trials France 1997. Residues in Peach. Decline study. (season 1997) Rhone Poulenc Agro / France 97-512 GLP Unpublished	Y	CAG



**Dodine – Annex B – Residues**

<b>Annex point / reference number</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Source (where different from company) Company, Report No GLP or GEP status (where relevant), Published or not</b>	<b>Data Protection claimed  Y/N</b>	<b>Owner</b>
IIA, 6.3.4/03-04	Maestracci M.	1998	Dodine : formulation EXP10343A (SC). Trials France 1997. Residues in peach. (season 1997) Rhone Poulenc Agro / France 97-513 GLP Unpublished	Y	CAG
IIA, 6.3.4/05-06	Baudet L., Yslan F.	1999	Dodine : formulation EXP10343A (SC). South/France 1998 – 2 harvest trials. Residues in peach (flesh).. study # 98-530, GLP, unpublished (season 1998) Rhone Poulenc Agro / France 98-530 GLP Unpublished	Y	CAG
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IIA, 6.5.1/01	Noorloos, B. van	2004	Nature of the residue of C14 dodine after thermal processing Notox Lab./NL 397507 GLP Unpublished	Y	CAG
IIA, 6.5.2/01	Wargo J.P.	1996	Magnitude of the residue of dodine (n- dodecylguanidine acetate) in/on apple processed fractions after ground treatment with Syllit 65W. Rhone Poulenc Agro / USA US95X05R / File N° 45177 GLP Unpublished	Y	CAG
IIA, 6.8.c/01	Macy L.J.	2000	Dodine: dissipation of dislodgeable foliar dodine residues from Peaches treated with Syllit 65W ABC Lab + Southeast Ag + Horizon Lab / USA, 99X17415 GLP Unpublished	Y	CAG

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