



SR-EBDC

D-15557

2-3-94
Ref
#8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EBDC/ETU Special Review. DRES Dietary Exposure and Risk Estimates for Use of **Maneb** on **Collards, Mustard Greens, and Turnip Tops**. Estimates Based on New Residue Studies.

FROM: Richard Griffin *Richard Griffin 2/3/94*
Chemistry Branch I / Tolerance Support
Health Effects Division (7509C)

THROUGH: Debra Edwards, Chief *Debra Edwards 2/3/94*
Chemistry Branch I / Tolerance Support
Health Effects Division (7509C)

TO: Amy Farrell
Special Review Branch
Special Review and Reregistration Division (7508W)

The following exposure/risk estimates are based on the residue and toxicology of the common EBDC metabolite/degradate, ETU.

Toxicological endpoints for ETU risk assessment:

- RfD: The Agency approved (2/20/91) Reference Dose for ETU is 0.00008 mg/kg body weight/day, based on the LEL (0.25 mg/kg body weight/day) of a 2-year rat study and an uncertainty factor of 3,000.
- Carcinogenicity: ETU is classified as a Group B2 carcinogen with an upper-bound potency factor (Q₁*) of 1.1 x 10⁻¹ (mg/kg/day)⁻¹.

Residue chemistry:

In association with a request for a hearing on the cancellation of maneb use on leafy greens, growers have submitted field trial, residue decline, and residue reduction studies (2 studies, each with 3 parts) on collards, with an agreed translation to mustard greens and turnip tops. Based on new data, Chemistry Branch II (Susan Hummel memo, 1/25/94) has revised the EBDC and ETU residue



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estimates for dietary exposure.

EBDC (maneb) and ETU residue estimates per DRES food-form for collards, mustard greens, and turnip tops are summarized in Table 1. EBDC/maneb exposure estimates are factored by a metabolic conversion rate of 7.5% to account for the in vivo metabolic conversion to ETU, then added to the ETU (direct) exposure estimates.

Percent crop treated:

As in the PD 4, collards, mustard greens, and turnip tops are assessed with the BEAD estimate of 90% crop treated.

Consumption database:

1977-78 USDA Nationwide Individual Food Consumption Survey.

ETU chronic exposure/percent RfD/carcinogenic risk estimates:

Overall U.S. population:

| | | | | |
|----------------------|-------------|-----------|-----------|----------|
| Turnip tops..... | 0.000002299 | mg/kg/day | (3% RfD) | (2.5E-7) |
| Collards..... | 0.000003441 | | (4% RfD) | (3.8E-7) |
| Mustard greens..... | 0.000002639 | | (3% RfD) | (2.9E-7) |
| Greens combined..... | 0.000008380 | | (10% RfD) | (9.2E-7) |

Non-nursing infants:

| | | | | |
|---------------------|--------------|-----------|-----------|--|
| Turnip tops..... | <0.000000001 | mg/kg/day | (<1% RfD) | |
| Collards..... | 0.000002882 | | (4% RfD) | |
| Mustard greens..... | <0.000000001 | | (<1% RfD) | |

Children (1-6):

| | | | | |
|---------------------|-------------|-----------|-----------|--|
| Turnip tops..... | 0.000002840 | mg/kg/day | (4% RfD) | |
| Collards..... | 0.000005661 | | (7% RfD) | |
| Mustard greens..... | 0.000003471 | | (4% RfD) | |

cc: R. Griffin files
Dietary Exposure Section (SAB)
Albin Kocialski (CCB)
Chemistry Branch II
RF

| CHEMICAL | STUDY TYPE | EFFECTS | REFERENCE DOSES | | DATA GAPS/COMMENTS | STATUS |
|---|---|--|-----------------|----------|---|---|
| | | | PADI | UF | | |
| Ethylene thiourea (ETU) Caswell #443AA CAS No. 96-45-7 A.I. CODE: 600016 CFR No. 180. | 2yr feeding- rat NOEL= 0.0000 mg/kg LEL= 0.2500 mg/kg 5.00 ppm ONCO: B2 (CAG/HED) | Increased incidence of thyroid hyperplasia. Evidence of oncogenicity in rats (thyroid) and mice (liver). | 0.11000 | 0.000080 | Reproduction- rat Chronic feeding- dog UF 3000 for data gaps, lack of NOEL. q* calculated. EBDC plant metabolite. | EPA verified 12/09/86. HED reassess 10/30/87. EPA deferred 02/25/88. WHO last reviewed 1988. EPA verified 02/20/91. On IRIS. |

| FOOD CODE | FOOD | PET.# | TOLERANCE (ppm) | ANTICIPATED RESIDUE (ppm) | AR STATISTIC TYPE | % CROP TREATED | RES. VALUE USED IN TAS RUN (ppm) |
|-----------|----------------|-------|-----------------|---------------------------|-------------------|----------------|----------------------------------|
| 13009AA | COLLARDS | 51 | 0.000000 | 0.240000 | FT | 90.00 | 0.216000 |
| 13009AA | COLLARDS | 63 | 0.000000 | 0.200000 | FT | 90.00 | 0.180000 |
| 13021AA | MUSTARD GREENS | 21 | 0.000000 | 0.200000 | FT | 90.00 | 0.180000 |
| 13021AA | MUSTARD GREENS | 63 | 0.000000 | 0.200000 | FT | 90.00 | 0.180000 |
| 13026AA | TURNIPS-TOPS | 10 | 0.000000 | 0.050000 | FT | 90.00 | 0.045000 |
| 13026AA | TURNIPS-TOPS | 21 | 0.000000 | 0.200000 | FT | 90.00 | 0.180000 |
| 13026AA | TURNIPS-TOPS | 31 | 0.000000 | 0.200000 | FT | 90.00 | 0.180000 |

ANTICIPATED RESIDUE INFORMATION FOR CASHELL NUMBER 999ZZZ

| CHEMICAL | STUDY TYPE | EFFECTS | REFERENCE DOSES | DATA GAPS/COMMENTS | STATUS |
|---|--|---------|--|--------------------|--------|
| EBDC'S COMBINED Cashell #999ZZZ CAS No. A.I. CODE: CFR No. 180. | NOEL= 0.0000 mg/kg 0.00 ppm LEL= 0.0000 mg/kg 0.00 ppm ONCO: | | UF --->0 OPP Rfd= 1.000000 EPA Rfd= 1.000000 | | |

| FOOD CODE | FOOD | FOOD FORM | PET. # | TOLERANCE (ppm) | ANTICIPATED RESIDUE (ppm) | AR STATISTIC TYPE | % CROP TREATED | RES. VALUE USED IN TAS RUN (ppm) |
|-----------|----------------|----------------------------------|--------|-----------------|---------------------------|-------------------|----------------|----------------------------------|
| 13009AA | COLLARDS | 51 COOKED-CANNED | | P 0.000000 | 0.004000 | FT | 90.00 | 0.003600 |
| 13009AA | COLLARDS | 63 COOKED-FRESH OR FROZEN-BOILED | | P 0.000000 | 0.025000 | FT | 90.00 | 0.022500 |
| 13021AA | MUSTARD GREENS | 21 COOKED-NFS | | P 0.000000 | 0.025000 | FT | 90.00 | 0.022500 |
| 13021AA | MUSTARD GREENS | 63 COOKED-FRESH OR FROZEN-BOILED | | P 0.000000 | 0.025000 | FT | 90.00 | 0.022500 |
| 13026AA | TURNIPS-TOPS | 10 RAW-FRESH OR NFS | | P 0.000000 | 0.760000 | FT | 90.00 | 0.684000 |
| 13026AA | TURNIPS-TOPS | 21 COOKED-NFS | | P 0.000000 | 0.023000 | FT | 90.00 | 0.020700 |
| 13026AA | TURNIPS-TOPS | 31 COOKED-FRESH OR CANNED | | P 0.000000 | 0.023000 | FT | 90.00 | 0.020700 |

TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

| CHEMICAL INFORMATION | STUDY TYPE | EFFECTS | REFERENCE DOSES | DATA GAPS/COMMENTS | STATUS |
|---|---|--|--|---|---|
| Ethylene thiourea (ETU) Cashell #443AA CAS No. 96-45-7 A.I. CODE: 600016 CFR No. 180. | 2yr feeding- rat NOEL= 0.0000 mg/kg 0.00 ppm LEL= 0.2500 mg/kg 5.00 ppm ONCO: B2 (CAG/HED) | Increased incidence of thyroid hyperplasia. Evidence of oncogenicity in rats (thyroid) and mice (liver). | PADI UF -->3000 OPP Rfd= 0.000080 EPA Rfd= 0.000080 Q*: 0.11000 | Reproduction- rat Chronic feeding- dog UF 3000 for data gaps, lack of NOEL. q* calculated. EBDC plant metabolite. | EPA verified 12/09/86. HED reassess 10/30/87. EPA deferred 02/25/88. WHO last reviewed 1988. EPA verified 02/20/91. On IRIS. |

COMMODITY CONTRIBUTION BY RAC FOR: U.S. POPULATION - 48 STATES

| FOOD CODE | FOODNAME/FOODFORM | TOLERANCE (PPH) | TMRC TYPE (UG/KG/DAY) | %RFD | TMRC ONCO RISK | ANTICIPATED RESIDUE (PPM) | ARC (UG/KG/DAY) | %RFD | ARC ONCO RISK |
|---|---|-----------------|-----------------------|-------|----------------|-------------------------------|----------------------------------|-------------------------|---|
| 13026AA | TURNIPS-TOPS 10 RAW-FRESH OR NFS 21 COOKED-NFS 31 COOKED-FRESH OR CANNED | 0.000 | P 0.000000 | 0.000 | 0.000000000000 | 0.04500 0.18000 0.18000 | 0.000196 0.000633 0.001231 | 0.245 0.791 1.539 | 0.00000002156 0.00000006963 0.00000013541 |
| CROP GROUP TOTALS FOR LEAVES OF ROOT AND TUBER VEG.: | | | | | | | | | |
| | | 0.000 | P 0.000000 | 0.000 | 0.000000000000 | 0.21600 0.18000 | 0.000049 0.003361 | 0.061 4.201 | 0.00000000539 0.00000036971 |
| 13021AA | MUSTARD GREENS 21 COOKED-NFS 63 COOKED-FRESH OR FROZEN-BOILED | 0.000 | P 0.000000 | 0.000 | 0.000000000000 | 0.18000 0.18000 | 0.000047 0.002568 | 0.059 3.210 | 0.00000000517 0.00000028248 |
| CROP GROUP TOTALS FOR BRASSICA (COLE) LEAFY VEGETABLES: | | | | | | | | | |
| | | 0.000 | P 0.000000 | 0.000 | 0.000000000000 | 0.006025 | 0.006025 | 7.531 | 0.000000066275 |

GRAND TOTALS FOR U.S. POPULATION - 48 STATES

| | | | | | |
|----------|-------|----------------|----------|--------|---------------|
| 0.000000 | 0.000 | 0.000000000000 | 0.008085 | 10.106 | 0.00000088935 |
|----------|-------|----------------|----------|--------|---------------|

TOLERANCE TYPE: N=NEW; A=PENDING; P=PUBLISHED
 TMRC=THEORETICAL MAXIMUM RESIDUE CONTRIBUTION
 ARC = ANTICIPATED RESIDUE CONTRIBUTION
 RFD = REFERENCE DOSE

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TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

| CHEMICAL INFORMATION | | STUDY TYPE | EFFECTS | REFERENCE DOSES | DATA GAPS/COMMENTS | STATUS |
|----------------------|--|--------------------|---------|-------------------|--------------------|--------|
| EBDC'S COMBINED | | NOEL= 0.0000 mg/kg | | UF -->0 | | |
| Cashell #999ZZZ | | 0.00 ppm | | OPP Rfd= 1.000000 | | |
| CAS No. | | LEL= 0.0000 mg/kg | | EPA Rfd= 1.000000 | | |
| A.I. CODE: | | ONCO: | | | | |
| CFR No. 180. | | | | | | |

COMMODITY CONTRIBUTION BY RAC FOR: U.S. POPULATION - 48 STATES

| FOOD CODE | FOODNAME/FOODFORM | TOLERANCE (PPM) | TYPE | TMRC (UG/KG/DAY) | %RFD | TMRC ONCO RISK | ANTICIPATED RESIDUE (PPM) | ARC (UG/KG/DAY) | %RFD | ARC ONCO RISK |
|---|----------------------------------|-----------------|------|------------------|-------|----------------|---------------------------|-----------------|-------|---------------|
| 13026AA | TURNIPS-TOPS | 0.000 | P | 0.000000 | 0.000 | 0.000000000000 | 0.68400 | 0.002980 | 0.000 | 0.00000002459 |
| | 10 RAW-FRESH OR NFS | | | | | | 0.02070 | 0.000073 | 0.000 | 0.00000000060 |
| | 21 COOKED-NFS | | | | | | 0.02070 | 0.000142 | 0.000 | 0.00000000117 |
| | 31 COOKED-FRESH OR CANNED | | | | | | | | | |
| CROP GROUP TOTALS FOR LEAVES OF ROOT AND TUBER VEG.: | | | | | | | | | | |
| | | 0.000000 | | 0.000000 | 0.000 | 0.000000000000 | 0.003195 | 0.000000 | 0.000 | 0.00000002636 |
| 13009AA | COLLARDS | 0.000 | P | 0.000000 | 0.000 | 0.000000000000 | 0.00360 | 0.000001 | 0.000 | 0.00000000001 |
| | 51 COOKED-CANNED | | | | | | 0.02250 | 0.000420 | 0.000 | 0.00000000347 |
| | 63 COOKED-FRESH OR FROZEN-BOILED | | | | | | | | | |
| 13021AA | MUSTARD GREENS | 0.000 | P | 0.000000 | 0.000 | 0.000000000000 | 0.02250 | 0.000006 | 0.000 | 0.00000000005 |
| | 21 COOKED-NFS | | | | | | 0.02250 | 0.000321 | 0.000 | 0.00000000265 |
| | 63 COOKED-FRESH OR FROZEN-BOILED | | | | | | | | | |
| CROP GROUP TOTALS FOR BRASSICA (COLE) LEAFY VEGETABLES: | | | | | | | | | | |
| | | 0.000000 | | 0.000000 | 0.000 | 0.000000000000 | 0.000748 | 0.000000 | 0.000 | 0.00000000617 |

GRAND TOTALS FOR U.S. POPULATION - 48 STATES

| | | | | | |
|----------|-------|----------------|----------|-------|---------------|
| 0.000000 | 0.000 | 0.000000000000 | 0.003943 | 0.000 | 0.00000003253 |
|----------|-------|----------------|----------|-------|---------------|

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TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

| CHEMICAL INFORMATION | STUDY TYPE | EFFECTS | REFERENCE DOSES | DATA GAPS/COMMENTS | STATUS |
|---|---|--|--|--|---|
| Ethylene thiourea (ETU) Cashell #443AA CAS No. 96-45-7 A.I. CODE: 600016 CFR No. 180. | 2yr feeding- rat NOEL= 0.0000 mg/kg 0.00 ppm LEL= 0.2500 mg/kg 5.00 ppm ONCO: B2 (CAG/HED) | Increased incidence of thyroid hyperplasia. Evidence of oncogenicity in rats (thyroid) and mice (liver). | PADI UF -->3000 OPP Rfd= 0.000080 EPA Rfd= 0.000080 q*: 0.11000 | Reproduction- rat Chronic feeding- dog UF 3000 for data gaps, lack of NOEL. q* calculated. EBDC plant metabolite. | EPA verified 12/09/86. HED reassess 10/30/87. EPA deferred 02/25/88. WHO last reviewed 1988. EPA verified 02/20/91. On IRIS. |

COMMODITY CONTRIBUTION BY RAC FOR: NON-NURSING INFANTS (< 1 YEAR OLD)

| FOOD CODE | FOODNAME/FOODFORM | TOLERANCE (PPH) | TYPE | TMRC (UG/KG/DAY) | %RFD | ANTICIPATED RESIDUE (PPM) | ARC (UG/KG/DAY) | %RFD |
|---|---|-----------------|------|------------------|-------|-------------------------------|----------------------------------|-------------------------|
| 13026AA | TURNIPS-TOPS 10 RAW-FRESH OR NFS 21 COOKED-NFS 31 COOKED-FRESH OR CANNED | 0.000 | P | 0.000000 | 0.000 | 0.04500 0.18000 0.18000 | 0.000000 0.000000 0.000000 | 0.000 0.000 0.000 |
| CROP GROUP TOTALS FOR LEAVES OF ROOT AND TUBER VEG.: | | | | | | | | |
| | | 0.000 | P | 0.000000 | 0.000 | 0.21600 0.18000 | 0.000000 0.002856 | 0.000 3.570 |
| 13009AA | COLLARDS 51 COOKED-CANNED 63 COOKED-FRESH OR FROZEN-BOILED | 0.000 | P | 0.000000 | 0.000 | 0.18000 0.18000 | 0.000000 0.000000 | 0.000 0.000 |
| 13021AA | MUSTARD GREENS 21 COOKED-NFS 63 COOKED-FRESH OR FROZEN-BOILED | 0.000 | P | 0.000000 | 0.000 | 0.18000 0.18000 | 0.000000 0.000000 | 0.000 0.000 |
| CROP GROUP TOTALS FOR BRASSICA (COLE) LEAFY VEGETABLES: | | | | | | | | |
| | | 0.000 | P | 0.000000 | 0.000 | 0.000000 | 0.000000 | 0.000 |

GRAND TOTALS FOR NON-NURSING INFANTS (< 1 YEAR OLD)

0.000000 0.000 0.000000 0.002856 3.570

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 ARC = ANTICIPATED RESIDUE CONTRIBUTION
 RFD = REFERENCE DOSE

TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

| CHEMICAL INFORMATION | | STUDY TYPE | EFFECTS | REFERENCE DOSES | DATA GAPS/COMMENTS | STATUS |
|----------------------|--|--------------------|---------|-------------------|--------------------|--------|
| EBDC'S COMBINED | | | | UF -->0 | | |
| Caswell #999ZZZ | | NOEL= 0.0000 mg/kg | | OPP Rfd= 1.000000 | | |
| CAS No. | | 0.00 ppm | | EPA Rfd= 1.000000 | | |
| A.I. CODE: | | LEL= 0.0000 mg/kg | | | | |
| CFR No. 180. | | 0.00 ppm | | | | |
| | | ONCO: | | | | |

COMMODITY CONTRIBUTION BY RAC FOR: NON-NURSING INFANTS (< 1 YEAR OLD)

| FOOD CODE | FOODNAME/FOODFORM | TOLERANCE (PPM) | TYPE | TMRC (UG/KG/DAY) | %RFD | ANTICIPATED RESIDUE (PPM) | ARC (UG/KG/DAY) | %RFD |
|---|----------------------------------|-----------------|------|------------------|-------|---------------------------|-----------------|-------|
| 13026AA | TURNIPS-TOPS | 0.000 | P | 0.000000 | 0.000 | 0.68400 | 0.000000 | 0.000 |
| | 10 RAW-FRESH OR NFS | | | | | 0.02070 | 0.000000 | 0.000 |
| | 21 COOKED-NFS | | | | | 0.02070 | 0.000000 | 0.000 |
| | 31 COOKED-FRESH OR CANNED | | | | | | | |
| CROP GROUP TOTALS FOR LEAVES OF ROOT AND TUBER VEG.: | | | | | | | | |
| | | 0.000 | | 0.000000 | 0.000 | 0.000000 | 0.000000 | 0.000 |
| 13009AA | COLLARDS | 0.000 | P | 0.000000 | 0.000 | 0.00360 | 0.000000 | 0.000 |
| | 51 COOKED-CANNED | | | | | 0.02250 | 0.000357 | 0.000 |
| | 63 COOKED-FRESH OR FROZEN-BOILED | | | | | | | |
| 13021AA | MUSTARD GREENS | 0.000 | P | 0.000000 | 0.000 | 0.02250 | 0.000000 | 0.000 |
| | 21 COOKED-NFS | | | | | 0.02250 | 0.000000 | 0.000 |
| | 63 COOKED-FRESH OR FROZEN-BOILED | | | | | | | |
| CROP GROUP TOTALS FOR BRASSICA (COLE) LEAFY VEGETABLES: | | | | | | | | |
| | | 0.000 | | 0.000000 | 0.000 | 0.000357 | 0.000357 | 0.000 |

GRAND TOTALS FOR NON-NURSING INFANTS (< 1 YEAR OLD)

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 ARC = ANTICIPATED RESIDUE CONTRIBUTION
 RFD = REFERENCE DOSE

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TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

| CHEMICAL INFORMATION | STUDY TYPE | EFFECTS | REFERENCE DOSES | DATA GAPS/COMMENTS | STATUS |
|---|---|--|--|---|---|
| Ethylene thiourea (ETU) Caswell #443AA CAS No. 96-45-7 A.I. CODE: 600016 CFR No. 180. | 2yr feeding- rat NOEL= 0.0000 mg/kg 0.00 ppm LEL= 0.2500 mg/kg 5.00 ppm ONCO: B2 (CAG/HED) | Increased incidence of thyroid hyperplasia. Evidence of oncogenicity in rats (thyroid) and mice (liver). | PADI UF -->3000 OPP Rfd= 0.000080 EPA Rfd= 0.000080 q*: 0.11000 | Reproduction- rat Chronic feeding- dog UF 3000 for data gaps, lack of NOEL. q* calculated. EBDC plant metabolite. | EPA verified 12/09/86. HED reassess 10/30/87. EPA deferred 02/25/88. WHO last reviewed 1988. EPA verified 02/20/91. On IRIS. |

COMMODITY CONTRIBUTION BY RAC FOR: CHILDREN (1-6 YEARS OLD)

| FOOD CODE | FOODNAME/FOODFORM | TOLERANCE (PPM) | TYPE | TMRC (UG/KG/DAY) | %RFD | ANTICIPATED RESIDUE (PPM) | ARC (UG/KG/DAY) | %RFD |
|---|---|-----------------|------|------------------|-------|-------------------------------|----------------------------------|-------------------------|
| 13026AA | TURNIPS-TOPS 10 RAW-FRESH OR NFS 21 COOKED-NFS 31 COOKED-FRESH OR CANNED | 0.000 | P | 0.000000 | 0.000 | 0.04500 0.18000 0.18000 | 0.000259 0.000632 0.001634 | 0.324 0.790 2.043 |
| CROP GROUP TOTALS FOR LEAVES OF ROOT AND TUBER VEG.: | | | | | | | | |
| | | 0.000 | P | 0.000000 | 0.000 | 0.21600 0.18000 | 0.000000 0.005609 | 0.000 7.011 |
| 13021AA | MUSTARD GREENS 21 COOKED-NFS 63 COOKED-FRESH OR FROZEN-BOILED | 0.000 | P | 0.000000 | 0.000 | 0.18000 0.18000 | 0.000024 0.003415 | 0.030 4.269 |
| CROP GROUP TOTALS FOR BRASSICA (COLE) LEAFY VEGETABLES: | | | | | | | | |
| | | 0.000 | P | 0.000000 | 0.000 | 0.009048 | | 11.310 |

GRAND TOTALS FOR CHILDREN (1-6 YEARS OLD)

0.011573 14.466

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TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

| CHEMICAL INFORMATION | | STUDY TYPE | EFFECTS | REFERENCE DOSES | DATA GAPS/COMMENTS | STATUS |
|---------------------------------------|--|--------------------------------|---------|---|--------------------|--------|
| EBDC'S COMBINED Caswell #999ZZZ | | NOEL= 0.0000 mg/kg 0.00 ppm | | UF -->0 OPP Rfd= 1.000000 EPA Rfd= 1.000000 | | |
| CAS No. A.I. CODE: CFR No. 180. | | LEL= 0.0000 mg/kg 0.00 ppm | | | | |
| | | ONCO: | | | | |

COMMODITY CONTRIBUTION BY RAC FOR: CHILDREN (1-6 YEARS OLD)

| FOOD CODE | FOODNAME/FOODFORM | TOLERANCE (PPM) | TYPE | TMRC (UG/KG/DAY) | %RFD | ANTICIPATED RESIDUE (PPM) | ARC (UG/KG/DAY) | %RFD |
|---|---|-----------------|------|------------------|-------|-------------------------------|----------------------------------|-------------------------|
| 13026AA | TURNIPS-TOPS 10 RAW-FRESH OR NFS 21 COOKED-NFS 31 COOKED-FRESH OR CANNED | 0.000 | P | 0.000000 | 0.000 | 0.68400 0.02070 0.02070 | 0.003940 0.000073 0.000188 | 0.000 0.000 0.000 |
| CROP GROUP TOTALS FOR LEAVES OF ROOT AND TUBER VEG.: | | | | | | | | |
| | | 0.000 | P | 0.000000 | 0.000 | 0.00360 0.02250 | 0.000000 0.000701 | 0.000 0.000 |
| 13009AA | COLLARDS 51 COOKED-CANNED 63 COOKED-FRESH OR FROZEN-BOILED | 0.000 | P | 0.000000 | 0.000 | 0.02250 0.02250 | 0.000003 0.000427 | 0.000 0.000 |
| 13021AA | MUSTARD GREENS 21 COOKED-NFS 63 COOKED-FRESH OR FROZEN-BOILED | 0.000 | P | 0.000000 | 0.000 | 0.001131 | | 0.000 |
| CROP GROUP TOTALS FOR BRASSICA (COLE) LEAFY VEGETABLES: | | | | | | | | |
| | | 0.000 | P | 0.000000 | 0.000 | 0.005332 | | 0.001 |

GRAND TOTALS FOR CHILDREN (1-6 YEARS OLD)

TOLERANCE TYPE: N=NEW; A=PENDING; P=PUBLISHED
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 ARC = ANTICIPATED RESIDUE CONTRIBUTION
 RFD = REFERENCE DOSE

