Table E - C's and P's - Truck Crops
Percent Reduction in C or P Due to Management Practices
All Field Offices, State of Hawaii and Pacific Basin
12/1/88

Practice Code	Practice Name	Slope Code 1 <5% <7% Slopes 1/		Slope Code 2 5 - 15% 7 - 15% Slopes 1/		Slope Code 3 <10% <12% Slopes 1/		Slope Code 4 10 - 15% Slopes 1/		Slope Code 5 >15% Slopes 1/		Slope Code 6 10 - 20% 12 - 20% Slopes 1/		Slope Code 7 >20% Slopes 1/	
		C	P	C	P	C	P	C	P	C	P	C	P	C	P
1	Cross Slope Farming	--	25	--	10	--	20	--	10	--	10	--	5	--	5
3	Contour Farming	--	50	--	20	--	40	--	20	--	20	--	10	--	N/A
4	Contour Farming (with Furrows)	--	75	--	60	--	70	--	60	--	60	--	55	--	N/A
5	Crop Residue Use	23	--	23	--	23	--	23	--	23	--	23	--	23	--
7	Scheduled Harvesting	33	--	33	--	33	--	33	--	33	--	33	--	33	--
8	Volunteer Cover Crop	25	--	25	--	25	--	25	--	25	--	25	--	25	--
9	Cover and Green Manure Crop	25	--	25	--	25	--	25	--	25	--	25	--	25	--
10	Mulching	83	--	83	--	83	--	83	--	83	--	83	--	83	--
12	Conservation Cropping Sequence	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	Contour Farming (with Raised Beds)	--	75	--	60	--	70	--	60	--	60	--	55	--	N/A
15	Strip Till	33	--	33	--	33	--	33	--	33	--	33	--	33	--
16	No Till	93	--	93	--	93	--	93	--	93	--	93	--	93	--
	Other Practices														
35	Permanent Vegetative Cover	98	--	98	--	98	--	98	--	98	--	98	--	98	--

1/ Percent reduction is the same for both uniform and complex slopes.
N/A Not applicable or recommended for situation.

Documentation for Table E - C's and P's - Truck Crops

The application of management-type conservation practices and treatments (hereafter referred to collectively as practices) would reduce sheet and rill or USLE erosion, more specifically the cover and management factor C or erosion control practice P factor values in the USLE equation. The figures shown on the subject erosion reduction table are percent reduction in C or P factor values due to a practice. The figures are shown as percentages in order that they be entered into the dBase III computer program that was developed to calculate reduction in USLE and ephemeral gully erosion.

Practices 1, 3, 4, 5, 7, 8, 9, 10, 12, 14, 15, 16, and 99 are applicable on truck crops. Practices 1, 3, 4, and 14 affect P factor values. The table shows the percent reduction in the base P value due to a specific practice. The base P value for truck crops with no practices applied is 1.00. The P values with each practice for each slope category were derived from Section IC of the SCS Field Office Technical Guide (FOTG) or developed through discussions with SCS WNTC specialists specifically for FSA planning purposes. The P values with each practice, are assumed to be the same for uniform and complex slopes in each slope category. The percent reduction in P was calculated as the difference in base P and the P with each practice, divided by the base P and multiplied by 100. For example, given the base P of 1.00 and assuming that the P with a specific practice was 0.75 the percent reduction was calculated as follows:

$$\begin{array}{l} 1.00 \text{ base P} \\ \underline{-\ 0.75} \text{ P with practice} \\ = 0.25 \text{ reduction in P} \end{array}$$

$$\frac{0.25 \text{ reduction in P}}{1.00 \text{ base P}} = 0.25 \times 100 = 25\% \text{ reduction in P}$$

1. Cross Slope Farming - The P values with this treatment were derived from the FOTG Section IC TABLE 8.--Erosion Control Practice Factor, P, page 23. The following table shows the slope break used on Table 8 to determine the P value with the treatment applied, the reduction in P, and the % reduction in P for each slope category.

Item	Slope Category		
	<5% <7%	5 - 15% 7 - 15%	<10% <12%
Slope Break Used	.0 - 7%	12.1 - 18%	7.1 - 12%
P Value w/Treatment	0.75	0.90	0.80
Reduction in P	0.25	0.10	0.20
% Reduction in P	25%	10%	20%

Item	Slope Category			
	10 - 15%	>15%	10 - 20% 12 - 20%	>20%
Slope Break Used	12.1 - 18%	12.1 - 18%	18.1 - 24%	18.1 - 24%
P Value w/Treatment	0.90	0.90	0.95	0.95
Reduction in P	0.10	0.10	0.05	0.05
% Reduction in P	10%	10%	5%	5%

3. Contour Farming - The P values with this practice were derived from the FOTG Section IC TABLE 8.--Erosion Control Practice Factor, P, page 23 and represent values for contour planting. The following table shows the slope break used on Table 8 to determine the P value with the practice applied, the reduction in P, and the % reduction in P for each slope category. This practice is not applicable on truck crop land with >20% slopes.

Item	Slope Category		
	<5% <7%	5 - 15% 7 - 15%	<10% <12%
Slope Break Used	.0 - 7%	12.1 - 18%	7.1 - 12%
P Value w/Practice	0.50	0.80	0.60
Reduction in P	0.50	0.20	0.40
% Reduction in P	50%	20%	40%

Item	Slope Category			
	10 - 15%	>15%	10 - 20% 12 - 20%	>20%
Slope Break Used	12.1 - 18%	12.1 - 18%	18.1 - 24%	N/A
P Value w/Practice	0.80	0.80	0.90	
Reduction in P	0.20	0.20	0.10	
% Reduction in P	20%	20%	10%	

4. Contour Farming (with Furrows) - The P values with this practice were derived from the FOTG Section IC TABLE 8.--Erosion Control Practice Factor, P, page 23 and represent values for contour irrigation furrows. The following table shows the slope break used on Table 8 to determine the P value with the practice applied, the reduction in P, and the % reduction in P for each slope category. This practice is not applicable on truck crop land with >20% slopes.

	Slope Category		
Item	<5% <7%	5 - 15% 7 - 15%	<10% <12%
Slope Break Used	.0 - 7%	12.1 - 18%	7.1 - 12%
P Value w/Practice	0.25	0.40	0.30
Reduction in P	0.75	0.60	0.70
% Reduction in P	75%	60%	70%

	Slope Category			
Item	10 - 15%	>15%	10 - 20% 12 - 20%	>20%
Slope Break Used	12.1 - 18%	12.1 - 18%	18.1 - 24%	N/A
P Value w/Practice	0.40	0.40	0.45	
Reduction in P	0.60	0.60	0.55	
% Reduction in P	60%	60%	55%	

Practices or treatments 5, 7, 8, 9, 10, 12, 15, 16, and 35 affect C factor values. Specific documentation notes related to each of these practices and treatments are listed below.

5. Crop Residue Use - At the present time, crop residue use on truck crops meets the existing Standards and Specifications (Code 344) and the Additional Specifications on page __ only as practiced on Guam and the Commonwealth of the Northern Mariana Islands (CNMI). This practice is further limited to use on wet season crops because crop residue would dry up too rapidly in the dry season to have any erosion reduction benefits and to crops that produce adequate amounts of crop residue. Base C factor values for various dry and wet season crops grown on Guam and the CNMI have been developed and are shown on the table in Appendix 2. Base C factor values for wet season crops would be reduced by an estimated 23 percent with crop residue use applied. This percent reduction would apply to all slopes and complexities. The assumptions and calculations for this estimate follows:

Assumptions:

1. Crop residue will be incorporated into the soil during tillage operations.

2. Crop stage for harvest to replant varies from 1 to 4 months depending on the crop.

3. The reduction in C factor values if crop residue use is applied is calculated as the difference in the base C factor value without the practice compared to C factor values with the practice, divided by the base C and multiplied by 100.

4. A base C of 0.52 will be used which is the C value for watermelon (N. Guam) wet season. Watermelon is grown during the rainy season and the harvest to replant period is 4 months.

5. The C value with the practice applied on watermelon has been estimated to be 0.40.

Calculations:

0.52 base C
- .040 C with practice
= 0.12 difference or reduction in C

$$\frac{\text{0.12 reduction in C}}{\text{0.52 base C}} = 0.23 \times 100 = 23\% \text{ reduction in C}$$

This 23% reduction in C is assumed to applicable for all wet season crops for all slopes and complexities.

6. Scheduled Harvesting - This treatment would only have a measurable effect on truck crop C factor values in areas with definite high and low rainfall periods, such as in Guam and the CNMI. Implementation of scheduled harvesting for truck crops would involve converting wet season crops which have the highest base C factor values to dry season crops which have the lowest base C factor values, or in other words, not growing crops during the wet season. The reduction in C factor values if scheduled harvesting is applied can be calculated as the difference in base C factor values for wet season crops compared to base C factor values for dry season crops, divided by the base C and multiplied by 100, as shown below in the following table. The reduction was based on converting sweet potato from a wet season to a dry season crop. This 33 percent reduction will be used for scheduled harvesting for all slopes and conditions.

Percent Reduction C Factor Values for Truck Crops Due to Scheduled Harvesting
Guam and CNMI

CROP TYPE: Crop(s)	Base C Factor Values 1/ Dry Season (Jan.-June)	Wet Season (July-Dec.)	Reduction in C Actual	Reduction in C Percent
ROOT:				
Dry Taro	0.29	0.59	0.30	51
Tapioca	0.29	0.59	0.30	51
Sweet Potato	0.22	0.33	0.11	33
FIELD:				
Sweet Corn	0.16	0.52	0.36	69
VINE:				
Watermelon (N.Guam)	0.17	0.52	0.35	67
Watermelon (S.Guam & CNMI)	0.12	0.29	0.17	59
TRELLISED:				
Green Beans	0.17	0.53	0.36	68
Yams	0.17	0.53	0.36	68
LEAFY:				
Pak Choy	0.35	0.85	0.50	59
Lettuce	0.35	0.85	0.50	59
Cabbage	0.15	0.37	0.22	59
BUSH:				
Eggplant	0.18	0.50	0.32	64
Tomatoes	0.17	0.47	0.32	64
Bell Peppers	0.17	0.47	0.30	64

1/ From appendix 2.

8. Volunteer Cover Crop
9. Cover and Green Manure Crop

The 25% reduction in C for both these practices was based on the reduction in C that would result from a base C of 0.40 for clean-tilled operation corn or head vegetables and a C with the practice applied of 0.30 for green-manure crop or weed cover utilized in cropping cycle. See FOTG Section IC TABLE 4.--C Values for Diversified Agricultural Crops and Orchards, page 20a. The percent reduction in C was calculated as the difference in base C and the C with the practice, divided by base C and multiplied by 100, calculated as follows:

0.40 base C
- .030 C with practice
= 0.10 reduction in C

$$\frac{\text{0.10 reduction in C}}{\text{0.40 base C}} = 0.25 \times 100 = 25\% \text{ reduction in C}$$

This 25% reduction in C is assumed to be the same for all slopes and complexities.

10. Mulching - At the present time, the use of organic mulch on truck crops meets the existing Code 484 Standards and Specifications only as practiced on Guam and the CNMI. Use of this practice will therefore be limited to use on Guam and the CNMI. Application of this practice will most likely involve using mulch material like or similar to hay or small grain straw. The reduction in C was based on applying mulch on watermelon grown during the dry season in southern Guam and the CNMI which has a base C value of 0.12 and is the lowest C for all the types of crops grown there (see page 47 for C values). TABLE 7.--Values of Ground Cover for Erosion Control on Construction Sites on page 23 of the FOTG Section IC was use to determine a C factor value of 0.02 for hay or small grain straw mulch. The percent reduction in C can be calculated as the difference in the base C and the C for mulch, divided by the base C and multiplied by 100, as shown below:

0.12 base C
- 0.02 C for bagasse mulch
= 0.10 reduction in C

$$\frac{\text{0.10 reduction in C}}{\text{0.12 base C}} = 0.8333 \times 100 = 83.33\% \text{ reduction in C}$$
or 83% rounded to nearest 1%

A 83% reduction in C will be used for mulching for all slopes and conditions.

12. Conservation Cropping Sequence
This practice does not reduce soil erosion in any measurable way. It is however, included in every truck crop alternative conservation system (ACS) shown on the FSA guidesheets, because it is a mandatory practice needed to protect the resource base.

14. Contour Farming (with Raised Beds)

The P values with this practice were derived from the FOTG Section IC TABLE 8.--Erosion Control Practice Factor, P, page 23 and represent values for contour irrigation furrows. The following table shows the slope break used on Table 8 to determine the P value with the practice applied, the reduction in P, and the % reduction in P for each slope category. This practice is not applicable on truck crop land with >20% slopes.

Item	Slope Category		
	<5% <7%	5 - 15% 7 - 15%	<10% <12%
Slope Break Used	.0 - 7%	12.1 - 18%	7.1 - 12%
P Value w/Practice	0.25	0.40	0.30
Reduction in P	0.75	0.60	0.70
% Reduction in P	75%	60%	70%

Item	Slope Category			
	10 - 15%	>15%	10 - 20% 12 - 20%	>20%
Slope Break Used	12.1 - 18%	12.1 - 18%	18.1 - 24%	N/A
P Value w/Practice	0.40	0.40	0.45	
Reduction in P	0.60	0.60	0.55	
% Reduction in P	60%	60%	55%	

15. Strip Till

This treatment can be used assuming adequate cover is provided by dead grasses or weeds or with practices 6 - Crop Residue Use, 8 - Volunteer Cover Crop, or 9 - Cover and Green Manure Crop. The reduction in C was based on a base C of 0.30 for clean-tilled operation vine crops and a C with the practice applied of 0.20
for strip-tilled vegetables with one-third of field covered with standing plant residue. See FOTG Section IC TABLE 4.--C Values for Diversified Agricultural Crops and Orchards, page 20a. The percent reduction in C was calculated as the difference in base C and the C with the treatment, divided by base C and multiplied by 100, calculated as follows:

0.30 base C
- .020 C with treatment
= 0.10 reduction in C

$$\frac{0.10 \text{ reduction in C}}{0.30 \text{ base C}} = 0.33 \times 100 = 33\% \text{ reduction in C}$$

This 33% reduction in C is assumed to be the same for all slopes and complexities.

16. No Till

This treatment can be run by itself assuming adequate plant residue is provided by dead grasses or weeds or with practice 5 - Crop Residue Use. The reduction in C was based on a base C of 0.30 for clean-tilled operation vine crops and a C with the practice applied of 0.02 for no-till vegetables planted in 100 percent standing plant residue. See FOTG Section IC TABLE 4.--C Values for Diversified Agricultural Crops and Orchards, page 20a. The percent reduction in C was calculated as the difference in base C and the C with the treatment, divided by base C and multiplied by 100, calculated as follows:

0.30 base C
- .002 C with treatment
= 0.28 reduction in C

$$\frac{0.28 \text{ reduction in C}}{0.30 \text{ base C}} = 0.93 \times 100 = 93\% \text{ reduction in C}$$

This 93% reduction in C is assumed to be the same for all slopes and complexities.

35. Permanent Vegetative Cover

The 98% reduction in C due to this practice was based on the assumption that application of this practice would result in 95-100% ground cover, no appreciable canopy, 50% grass and 50% weeds or broadleaf herbaceous plants. The FOTG Section IC TABLE 5.--C Values for Permanent Pasture and Idle Land, page 21 shows C values based on the above assumption of 0.003 for grass and 0.011 for weeds. These two values were averaged to get a C value of 0.007, which was used to represent the C value with this practice applied. The reduction in C was based on applying this practice on clean-tilled operation vine crops with a base C of 0.30 (value also from Table 4). The percent reduction in C can be calculated as the difference in the base C and the C with practice applied, divided by the base C and multiplied by 100, as shown below:

0.300 base C clean-tilled operation vine crops
- .007 C with practice
= 0.293 reduction in C

$$\frac{0.293 \text{ reduction in C}}{0.300 \text{ base C}} = 0.9766 \times 100 = 97.66\% \text{ reduction in C}$$
or 98% rounded to nearest 1%

This 98% reduction in C is assumed to be the same for all slopes and complexities.

Table F - C Combinations - Truck Crops
Percent Reduction in C Due to Combinations of Management Practices
All Field Offices, State of Hawaii and Pacific Basin
12/1/88

Practice Combination Code	Consisting of the Following Practices: Codes	Names	Percent Reduction in C All Slopes and Conditions	Effect	% Reduction Per Practice: 1	2	3	4
81	5 , 7	5 - Crop Residue Use , 7 - Scheduled Harvesting	48	Cumulative	23	33		
82	5 , 8	5 - Crop Residue Use , 8 - Volunteer Cover Crop	42	Cumulative	23	25		
83	5 , 15	5 - Crop Residue Use , 15 - Strip Till	48	Cumulative	23	33		
84	5 , 16	5 - Crop Residue Use , 16 - No Till	95	Cumulative	23	93		
85	7 , 8	7 - Scheduled Harvesting , 8 - Volunteer Cover Crop	50	Cumulative	33	25		
86	7 , 9	7 - Scheduled Harvesting , 9 - Cover and Green Manure Crop	50	Cumulative	33	25		
87	8 , 15	8 - Volunteer Cover Crop , 15 - Strip Till	50	Cumulative	25	33		
88	9 , 15	9 - Cover and Green Manure Crop, 15 - Strip Till	50	Cumulative	25	33		
89	5 , 7 , 8	5 - Crop Residue Use , 7 - Scheduled Harvesting , 8 - Volunteer Cover Crop	61	All cumulative	23 77	33 67	25 75	
90	Not assigned							
91	5 , 7 , 15	5 - Crop Residue Use , 7 - Scheduled Harvesting , 15 - Strip Till	65	All cumulative	23 77	33 67	33 67	
92	5 , 7 , 16	5 - Crop Residue Use , 7 - Scheduled Harvesting , 16 - No Till	96	All cumulative	23 77	33 67	93 7	
93	5 , 8 , 15	5 - Crop Residue Use , 8 - Volunteer Cover Crop , 15 - Strip Till	61	All cumulative	23 77	25 75	33 67	

Table F - C Combinations - Truck Crops
Percent Reduction in C Due to Combinations of Management Practices
All Field Offices, State of Hawaii and Pacific Basin
12/1/88

Practice Combination Code	Consisting of the Following Practices: Codes	Names	Percent Reduction in C All Slopes and Conditions	Effect	% Reduction Per Practice: 1	2	3	4
94	7 , 8 , 15	7 - Scheduled Harvesting , 8 - Volunteer Cover Crop , 15 - Strip Till	66	All cumulative	33 67	25 75	33 67	
95	7 , 9 , 15	7 - Scheduled Harvesting , 9 - Cover and Green Manure Crop, 15 - Strip Till	66	All cumulative	33 67	25 75	33 67	
96	5 , 7 , 8 , 15	5 - Crop Residue Use , 7 - Scheduled Harvesting , 8 - Volunteer Cover Crop 15 - Strip Till	74	All cumulative	23 77	33 67	25 75	33 67
97	7 , 10	7 - Scheduled Harvesting , 10 - Mulching	89	Cumulative	33	83		
98	7 , 15	7 - Scheduled Harvesting , 15 - Strip Till	55	Cumulative	33	33		
99	7 , 16	7 - Scheduled Harvesting , 16 - No Till	95	Cumulative	33	93		
100	8 , 10	8 - Volunteer Cover Crop , 10 - Mulching	87	Cumulative	25	83		
101	9 , 10	9 - Cover and Green Manure Crop, 10 - Mulching	87	Cumulative	25	83		
102	10 , 15	10 - Mulching , 15 - Strip Till	89	Cumulative	83	33		
103	10 , 16	10 - Mulching , 16 - No Till	99	Cumulative	83	93		
104	7 , 8 , 10	7 - Scheduled Harvesting , 8 - Volunteer Cover Crop , 10 - Mulching	91	All cumulative	33 67	25 75	83 17	
105	7 , 9 , 10	7 - Scheduled Harvesting , 9 - Cover and Green Manure Crop, 10 - Mulching	91	All cumulative	33 67	25 75	83 17	
106	7 , 10 , 15	7 - Scheduled Harvesting , 10 - Mulching , 15 - Strip Till	92	All cumulative	33 67	83 17	33 67	

Table F - C Combinations - Truck Crops
Percent Reduction in C Due to Combinations of Management Practices
All Field Offices, State of Hawaii and Pacific Basin
12/1/88

Practice Combination Code	Consisting of the Following Practices: Codes	Names	Percent Reduction in C All Slopes and Conditions	Effect	% Reduction Per Practice: 1	2	3	4
107	7 , 10 , 16	7 - Scheduled Harvesting , 10 - Mulching , 16 - No Till	99	All cumulative	33	83	93	
					67	17	7	
108	8 , 10 , 15	8 - Volunteer Cover Crop , 10 - Mulching , 15 - Strip Till	91	All cumulative	25	83	33	
					75	17	67	
109	9 , 10 , 15	9 - Cover and Green Manure Crop, 10 - Mulching , 15 - Strip Till	91	All cumulative	25	83	33	
					75	17	67	
110	7 , 8 , 10 , 15	7 - Scheduled Harvesting , 8 - Volunteer Cover Crop , 10 - Mulching 15 - Strip Till	94	All cumulative	33	25	83	33
					67	75	17	67
111	7 , 9 , 10 , 15	7 - Scheduled Harvesting , 9 - Cover and Green Manure Crop, 10 - Mulching 15 - Strip Till	94	All cumulative	33	25	83	33
					67	75	17	67

Documentation for
Table F - C Combinations - Truck Crops

In the Alternative Conservation Systems (ACS's) developed for truck crops practices and treatments 8, 9, 10, 15, and 16 were used with each other in various combinations and with other management and structural practices. Practices and treatments will hereafter be referred to collectively as practices. Practices 1, 3, 4, and 14 are mutually exclusive and were not used in combination with each other because only one of the four can be applied at one time. Practice 35 was not included in the ACS's, rather it is listed as an alternative to applying an ACS listed on the guidesheets.

The effect on C factor values when practices 8, 9, 10, 15 and 16 were used in combination were based on the following general assumption:

The practices used in combination do not contribute to solving the same erosion problem, thus the effect of each practice was assumed to be cumulative. The following equation was used to determine the cumulative effect of the practices:

$$\text{Cumulative \%Reduction in C} = 100 - \left[100 \times \left(1 - \frac{\text{\% reduction Practice A}}{100} \right) \times \left(1 - \frac{\text{\% reduction Practice B}}{100} \right) \right]$$

For example: Practice Combination Code 81, includes practice 5 - Crop Residue Use and 7 - Scheduled Harvesting. Crop Residue Use reduces C by 23% and Scheduled Harvesting by 33%. Crop Residue Use effects ground cover and Scheduled Harvesting the amount of rainfall. The cumulative reduction in C using the above equation is shown on the following page.

$$\text{Cumulative \%Reduction in C} = 100 - \left[100 \times \left[1 - \frac{23}{100}\right] \times \left[1 - \frac{33}{100}\right]\right]$$

$$= 100 - \left[100 \times \left[1 - .23\right] \times \left[1 - .33\right]\right]$$

$$= 100 - \left[100 \times \left[.77\right] \times \left[.67\right]\right]$$

$$= 100 - \left[100 \times .5159\right]$$

$$= 100 - \left[51.59 \text{ or } 52\right]$$

$$= 48$$

Table F shows all the practice combinations for truck crops and the percent reduction in C for each combination. All the practices used in combination have cumulative effects as shown in the Effect column on the right side of the table. The far right columns of the table show the percent reduction in C for each of the practices in each combination.

Table G - Ephemeral Gully Erosion - Truck Crops
Percent Reduction in Ephemeral Gully Erosion Due to Structural Practices
All Field Offices, State of Hawaii and Pacific Basin
12/1/88

Practice Code	Practice Name	Slope Code 1 <5% <7% Slopes 1/	Slope Code 2 5 - 15% 7 - 15% Slopes 1/	Slope Code 3 <10% <12% Slopes 1/	Slope Code 4 10 - 15% Slopes 1/	Slope Code 5 >15% Slopes 1/	Slope Code 6 10 - 20% 12 - 20% Slopes 1/	Slope Code 7 >20% Slopes Uniform	Slope Code 7 >20% Slopes Complex
20	Grassed Waterway 2/	0	0	0	0	0	0	0	0
23	Diversion (for Outside Water)	10	20	20	20	20	20	40	20
24	Terrace (Gradient)	90	90	90	90	90	90	90	90
25	Access Road	10	10	10	10	10	10	10	10
27	Vertical Drain and Sediment Basin 2/	0	0	0	0	0	0	0	0
28	Hillside Ditch	90	90	90	90	90	90	90	90
32	Field Windbreak 3/	0	0	0	0	0	0	0	0
33	Lined Waterway or Outlet 2/	0	0	0	0	0	0	0	0
34	Terrace (Bench)	90	90	90	90	90	90	90	90

N/A Not applicable or recommended for situation.

1/ Percent reduction same for both uniform and complex slopes.

2/ No ephemeral gully erosion savings is shown for this practice because savings credited to other practices, such as diversions or gradient terraces, used in conjunction with this practice. Erosion savings may be claimed for this practice if ephemeral gully erosion is taking place at the site of practice construction.

3/ No erosion savings is shown for this practice because a wind erosion equation (WEQ) has not been developed for Hawaii at the present time.

Documentation for
Table G - Ephemeral Gully Erosion - Truck Crops

Limited field tests conducted at the Papaaloa Suboffice have indicated that ephemeral gully erosion is approximately equal to sheet and rill erosion. For example, if sheet and rill erosion is 10 tons/acre/year as measured by the USLE, then ephemeral gully erosion is approximately 10 tons/acre/year. Thus, for FSA planning purposes a 1:1 ratio was used to calculate an ephemeral gully erosion index value which is used as a starting value to then evaluate the percent reduction in ephemeral gully erosion due to structural practices. Ephemeral gully erosion was expressed as an index rather than an actual erosion rate because sufficient data has not been collected and analyzed in order to make a reliable estimate of the actual amount of ephemeral gully erosion taking place in the field.

Structural practices 20, 23, 24, 25, 27, 28, 32, 33, and 34 are applicable on truck crop land. Specific documentation notes related to the percent reduction in ephemeral gully erosion due to these practices are listed below.

20. Grassed Waterway - This practice is used to provide an outlet for other structural practices such as terraces and diversions for outside water in situations where an suitable natural outlet is not available. This practice does not in itself reduce ephemeral gully erosion in any measurable way, thus no erosion reduction credit is claimed.

23. Diversion (for Outside Water) - The percent reduction in ephemeral gully erosion due to this practice was developed through discussions with WNTC specialists. See Appendix 10.

24. Terrace (Gradient) - A system of gradient terraces installed to specifications will control 100% of the ephemeral gully erosion on the approximately 90% of the total land area in crops (assuming 10% in roads). Thus, this practice is assumed to control 90% of the total ephemeral gully erosion.

25. Access Road - Measures to properly control runoff on access roads will control 100% of the ephemeral gully erosion on the approximately 10% of the total land area in roads (assuming 90% in crops). Thus, this practice is assumed to control 10% of the total ephemeral gully erosion.

27. Vertical Drain & Sediment Basin - This practice is used to provide an outlet for other structural practices such as terraces and diversions for outside water in situations where an suitable natural outlet is not available. This practice does not in itself reduce ephemeral gully erosion in any measurable way, thus no erosion reduction credit is claimed.

28. Hillside Ditch - Hillside ditches installed to specifications will control 100% of the ephemeral gully erosion on the approximately 90% of the total land area in crops (assuming 10% in roads). Thus, this practice is assumed to control 90% of the total ephemeral gully erosion.