FEDERAL CROP INSURANCE CORPORATION
CROP YEAR 1991 UNITS EVALUATION
REPORT NO. 05600-6-Te

SEPTEMBER 1994

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF INSPECTOR GENERAL - AUDIT
SOUTHWEST REGION
ROOM 324, FEDERAL OFFICE BUILDING
101 SOUTH MAIN STREET
TEMPLE, TX 76501

UNITED STATES DEPARTMENT OF AGRICULTURE

OFFICE OF INSPECTOR GENERAL

Washington D.C. 20250

DATE: September 30, 1994

REPLY TO
ATTN OF: 05600-6-Te

SUBJECT: Federal Crop Insurance Corporation (FCIC) - Crop Year 1991 Units Evaluation

TO: Kenneth D. Ackerman
Manager
Federal Crop Insurance Corporation

ATTN: Mary Ann Manor
Director
Internal Controls Staff

This report presents the results of our evaluation of Crop Year 1991 Units. Your August 31, 1994, response to the draft report is included as exhibit H with excerpts and the Office of Inspector General's position incorporated into the Findings and Recommendations section of the report. A management decision on the one recommendation has not been reached.

In accordance with Departmental Regulation 1720-1, please furnish a reply within 60 days describing the corrective action taken or planned and the timeframes for implementation of the recommendation. Please note that the regulation requires a management decision to be reached on all findings and recommendations within a maximum of 6 months from report issuance.

James R. Ebbitt

JAMES R. EBBITT
Assistant Inspector General
for Audit

EXECUTIVE SUMMARY

CROP YEAR 1991 UNIT EVALUATION
REPORT NO. 05600-6-Te

PURPOSE

Federal Crop Insurance Corporation (FCIC) offers crop insurance to cover unavoidable losses due to adverse weather, insects, and crop diseases. Under certain circumstances, FCIC allows producers to establish more than one unit (insured acreage) for a particular crop per county. Optional units enable producers to separately insure various segments or portions of their overall operation and to receive indemnity payments if some of those units have losses even though others may have production equal to or greater than the guarantee. Generally, the combining of units on multiple unit policies will reduce the amount of indemnity paid. The objective of this evaluation was to determine the net monetary effect alternate unit structures [one unit per county, basic units per county, or farm serial number (FSN)] would have had on the crop year (CY) 1991 policies with indemnities. In CY 1991, FCIC paid $952.4 million in indemnities on 202,835 policies.

RESULTS IN BRIEF

We concluded the multiple unit structure substantially increased net costs (indemnity plus administrative expense less total premium) for the CY 1991 policies with indemnities. Based on our review of a random sample of 60 policies with indemnities, we have statistically projected that CY 1991 net costs could have been reduced by 32.4 percent if the units had been limited to one per county, or about $336.7 million. If the unit structure had been limited to basic units per county or to FSN, net costs could have been reduced about $225.6 million or $189 million, respectively. Because we only sampled CY 1991, the results of this audit cannot be applied to other years. Had we sampled other years, the results may have been less than or greater than those of CY 1991.

KEY RECOMMENDATIONS

Improve the actuarial soundness and decrease the loss ratio by reducing the number of crop units that each producer can insure in a county or otherwise compensate for the monetary impact multiple units present when claims are involved.

AGENCY POSITION

In the written response to our draft report, the FCIC Manager advised that most comments regarding units state that the policy should be more liberal, and FCIC seeks to meet customer's expectations and demands for desirable program features to the extent that it can within the constraints of its commitment to achieve actuarial sufficiency. Focusing attention solely on the multiple unit contracts and expending resources to consolidate those units may divert resources from more important program improvements. Instead, FCIC believes, resources should be devoted to those items described in the "Blueprint for Financial Soundness." FCIC believes these actions will have a bigger payoff in terms of reducing the loss ratios on all crop insurance contracts, not just those that have multiple units. The full text of the FCIC response in included as exhibit H of this report.

While we support the "Blueprint for Financial Soundness" and its goals, we believe this report demonstrates a need to address a segment of the program that is clearly not cost effective, and one that is likely to increase in magnitude with FCIC catastrophic coverage being made mandatory for all producers who participate in Federal programs. FCIC's policy of offering insurance on multiple units of the same crop in the same county needs immediate attention. We believe FCIC must at least address whether it plans to apply catastrophic and/or additional "buy-up" coverage to one unit per county, basic units, farm serial number, or optional units, and indicate how premium rates would be adjusted to reduce the loss ratio to 1.1 by October 1, 1995.

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INTRODUCTION

BACKGROUND

The FCIC is a wholly-owned Government corporation created within the United States Department of Agriculture under Title V of the Agricultural Adjustment Act of 1938. The mission of FCIC is to improve the economic stability of agriculture through a sound system of crop insurance. Various crop insurance programs are planned, developed, and monitored by the FCIC Headquarters office in Washington D. C.; its operations office in Kansas City, Missouri; and regional and direct service offices located throughout the United States.

On September 26, 1980, Public Law 96-365 amended the FCIC program. The Federal Crop Insurance Act of 1980 (the Act) created an expanded, subsidized, all-crop, all-risk, all-county crop insurance program to replace both a less extensive Federal crop insurance program and the disaster assistance program. One significant change under the Act was a requirement to shift the program delivery system to the private sector. Under this concept, FCIC offers crop insurance through two basic delivery systems: (1) Sales and service contractors write crop insurance policies which FCIC directly insures; and (2) private insurance companies write Multiple Peril Crop Insurance policies which FCIC reinsures. Contractors and companies are compensated for types of services provided and the financial risks assumed. FCIC plans to discontinue the use of sales and service contractors after June 30, 1994.

Prior to the Act, FCIC offered 4,063 county crop programs in 1,526 counties. A county crop program is an offering of insurance for a crop in a county. For CY 1991, FCIC offered 21,085 county crop programs in 3,026 counties; however, producers only insured about 34 percent of the insurable acres (85.2 million acres insured out of 248.6 million insurable acres).

Although 34 percent represents a substantial increase in participation from about 12 percent in 1980, FCIC experienced significant losses during the same period. These losses primarily occurred because FCIC paid out more in claims than earned in premiums. From fiscal year (FY) 1981 through FY 1992, FCIC paid out about $9.2 billion in claims while producers' premiums generated only about $4.8 billion of income. By the end of FY 1994, FCIC expected the deficit to rise to about $5.8 billion.

In response to customers' demands for improved products, FCIC in the early 1980's initiated multiple units for wheat, soybeans, and many other crops. In 1985, FCIC proposed to discontinue multiple units and to restrict policyholders to one unit per State. However, because of negative public reaction FCIC dropped the proposal. As of CY 1994, all crop policies allowed multiple units except for peanut and quota tobacco policies which limited insurable acreage to a single Agricultural Stabilization and Conservation Service (ASCS) FSN.

There are two kinds of units - basic and optional. Each insured crop has its own unit structure defined in the policy. For most crops, basic units are usually based on different ownership interest in a crop in a county. For example, a 100 percent share in the crop is one basic unit, while land shared with each different landlord/tenant are separate basic units. Under certain circumstances, basic units can be subdivided. These subdivisions are called optional units. The insured is required to maintain separate production records for proposed optional units at least for the most current year in the base period of the actual production history (APH). Also, the insured's acreage located in separate legally identifiable sections or ASCS FSN's is considered an optional unit. Furthermore, irrigated and nonirrigated practices within a single section or ASCS FSN may be broken out into optional units under certain circumstances. FCIC allows a discount on the premium of basic units not divided into optional units.

OBJECTIVES

Our objective was to determine the net monetary effect of multiple units on CY 1991 policies with indemnities.

SCOPE

We performed our evaluation in accordance with the Quality Standards For Inspections issued in March 1993 by the President's Council on Integrity and Efficiency. For CY 1991, there were 706,503 crop policies written in the continental United States and 202,835 policies with claims filed with about $952.4 million paid in indemnities as of June 12, 1992.

We randomly selected and reviewed 60 CY 1991 policies with indemnities from the 202,835 claims listed on the June 12, 1992, claims processed data base. These are the same sample claims used in audit No. 05600-4-Te, Crop Year 1991 Claims, issued September 30, 1993. Exhibit B lists the 60 sample policies, and exhibit C contains the statistical sampling plan and stratification definitions.

The net cost (indemnity and administrative expenses paid less the total premium income) for the 202,835 policies with claims was

essential for performance of our evaluation; however, it was not readily available from FCIC's data base as of June 12, 1992. Therefore, we statistically estimated two universes of net costs. (See exhibit G.) The first totaling $1,037,602,559 involved net costs for all producers in the universe for all units within a county. The second totaling $1,066,160,981 involved net costs for units grouped by ASCS FSN, thereby including land which may extend beyond county lines.

METHODOLOGY

For purposes of this evaluation, we defined a sample case as a claim filed on a single crop policy. There may have been more than one crop and/or county insured under each policy. Each crop in each county was considered as a separate crop policy except when the ASCS FSN extended beyond county lines. A claim on a crop policy would be a claim under our definition. Under our sample selection criteria, each crop policy claim in the 202,835 universe was subject to being picked.

To determine the impact the unit structure had on policies with claims, we recalculated each claim using three different scenarios: (1) We included all of the insured's interest in a crop as identified on the policy into one unit (one unit per county), (2) we included all the basic units per county on the policy as well as combined the optional units back into their original basic units (only basic units per county), and (3) we included each separate ASCS FSN as a separate unit even when it extended beyond a county line (one unit per ASCS FSN).

To recompute the claims based on the alternative unit structures, we obtained the CY 1991 unit production and related data from the claims and used it without correction or adjustment. For the units without claims, we either obtained the CY 1991 production data from the CY 1992 APH or from the insured. We did not verify the accuracy of the data we collected or the unit structures on the policies.

We recomputed the claims treating each former unit as a separate line item in the new unit structures. In other words, we did not blend yields in forming new units because we did not have access to the 10 years of yields which made up the guaranteed yields. Had we blended the yields, the results may have been somewhat greater or less than the guarantees used herein. We also applied a 10 percent premium discount to each restructured unit. This is the same discount allowed by FCIC for basic units not subdivided into optional units.

This evaluation only considered the monetary impact that multiple units had on CY 1991 claims. We did not evaluate the frequency of loss (the number of units suffering a loss divided by the total number of units) or the loss cost (the total dollars of losses paid divided by the total liability) because we limited our evaluation to

202,835 policies with claims, not the entire 706,503 policy universe. We did not evaluate the loss severity (the percentage of liability on units with a loss that is paid as an indemnity) because that was not within our objective. We suspected that reducing the number of units on a policy would reduce the amount of indemnity, especially where claims are filed on only part of the units connected with a policy; but, we did not know if the reduction would be significant. Thus, we designed the evaluation to measure the degree of impact on CY 1991 only.

We developed a computer program that performed all the recalculations and comparisons. The program compared the recomputations to the original elements of indemnity, administrative expense and total premium. It determined the net difference for each element by adding the difference between the former indemnity and the restructured indemnity to the differences between the former administrative expense and the restructured administrative expense and subtracting the differences between the former total premiums and the restructured total premiums. Table 1 shows an example of one of our samples for scenario 1 (one unit per county).

CATEGORY	ORIGINAL UNITS	RESTRUCTURED UNITS	DIFFERENCES
INDEMNITY	$9,705	$3,903	$5,802
ADMIN EXPENSE	470	422	48
TOTAL PREMIUM	(1,380)	(1,242)	(138)
NET DIFFERENCE	$8,795	$3,083	$5,712

Table 1

Following these computations, we statistically projected the net difference and calculated the percent of reduction by dividing the projected net difference by the projected original net costs.

Exhibits D, E, and F show the results of our evaluation for the three different unit scenarios. Exhibit G shows the statistically projected net differences and net costs.

We also captured separate statistics for the following situations:

Policies with multiple units, either basic or optional (47 samples); and

policies with multiple units incurring losses on some but not all units (26 samples).

FINDINGS AND RECOMMENDATIONS

I. MILLIONS OF DOLLARS COULD BE SAVED BY REDUCING THE NUMBER OF UNITS PER COUNTY

FCIC's regulations allowed producers to have multiple units per county on CY 1991 crop insurance policies. FCIC allowed multiple units in an effort to make crop insurance more attractive to farmers in hopes of increasing participation and actuarial soundness. However, participation did not materially increase and CY 1991 net costs could have been reduced about $336.7 million by reducing the number of units per county.

Our projected universe of net costs was over $1 billion. Net costs include the indemnity paid plus the administrative expenses paid less the total premium received. Of our random sample of 60 policies with indemnities, we identified 47 policies with multiple units. Of these 47 policies, 21 had losses on all units, while 26 policies had loss claims on some but not all of their units.

To determine the net monetary effect of units on CY 1991 policies with claims, we recalculated the differences in the net cost from the original data using three scenarios: (1) Reducing the number of units to one unit per county; (2) reducing the number of units to only basic units; and (3) reducing the number of units to ASCS FSN's in the county. Details follow.

One Unit Per County

Reducing units to one per county (all insurable acreage of a crop per insured) provided the greatest savings. Our best estimate is that net costs could have been reduced 32.4 percent, and we are 95 percent confident that net costs could have been reduced at least 20.4 percent. These estimates have a sampling precision of 12 percent. These percentages equate to an estimated monetary savings of at least $197.3 million with a midpoint approximate savings of $336.7 million. Also, we project that the policies with loss claims on only part of the units accounted for over $333 million of the additional net costs of having multiple units.

Basic Units

Reducing the units to only basic units (units permitted under current regulations without optional units) provided the next most cost effective unit structure. Our best estimate is that this method could have reduced net costs 21.7 percent, and we are 95 percent confident that net costs could have been reduced at least 11.4 percent. These estimates have a sampling precision of 10.3 percent. These percentages equate to an estimated monetary savings of at least $101.5 million with a midpoint approximate savings of $225.6 million. Also, we project that the policies with loss claims on only part of the units accounted for over $224 million of the additional net costs of having multiple units.

ASCS FSN

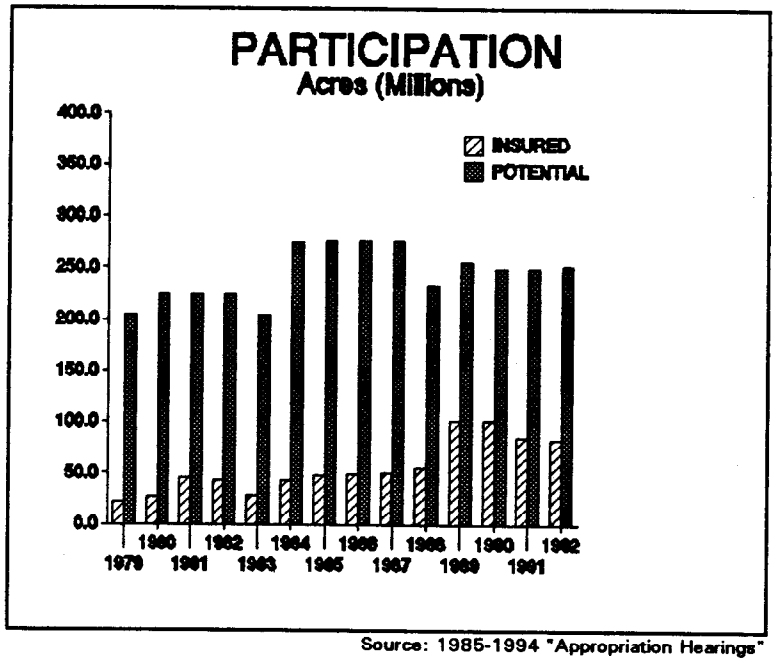
Reducing units to all insurable crop acreage assigned to an ASCS FSN in the county saved the least but was still substantial. Our best estimate is that this method could have reduced net costs 17.7 percent, and we are 95 percent confident that net costs could have been reduced at least 8 percent. These estimates have a sampling precision of 9.7 percent. These percentages equate to an estimated monetary savings of at least $67.4 million with a midpoint approximate savings of $189 million. Also, we project that the policies with loss claims on only part of the units accounted for all $189 million of the additional net costs of having multiple units.

Participation

According to FCIC, multiple units were initiated in the early 1980's, in part, to respond to customer demands for improved products. In 1985, FCIC proposed that multiple units be discontinued for CY 1986 and that policyholders be restricted to one unit per State. The insurance industry predicted that there would be mass cancellations if the single unit policy was instituted. Thus, FCIC rescinded the proposal. The insurance industry had made similar dire predictions when the cotton and rice programs were reduced from multiple units to ASCS FSN's in the county for CY 1984. However, premiums actually increased in CY 1984 for cotton and rice.

Figure 1 shows participation in acres from 1979 to 1992. This data indicates that multiple units have done little to increase participation since participation did not increase significantly until CY 1989 when Congress made it mandatory to purchase crop insurance in order to obtain ASCS disaster payments. As the data in the Figure 1 indicates, changing the number of units has had little effect on participation; however, our evaluation of various alternatives indicates a reduction in the number of units could significantly decrease costs. Moreover, in our opinion, it should

reduce the incidence of fraud and abuse due to shifting production from claim units to nonclaim units.



Source: 1985-1994 "Appropriation Hearings"

Figure 1

Risk

Generally, multiple units are not costly to FCIC unless there are claims. Even then, the risks are minimal for widespread losses when all units have claims. Therefore, multiple units only become costly when claims are filed on only part of the units connected with a policy. Our restructuring of units showed that the savings came mostly from the policies with multiple units incurring claims on some but not all units. (See exhibit G.)

Table 2 shows the result of our analysis of the 26 policies which had more than one unit and had at least one unit reporting no claim. For each of the 26 policies, we determined the average reported production per acre for all of the claim units and compared these averages to those for the nonclaim units. We also averaged the yield used to determine coverage for both the claim and nonclaim units to establish the relation of average reported production per acre to the average yield.

POLICY NUMBER (1)	CROP (2)	UNITS WITH LOSS/REPLANT CLAIMS		UNITS WITHOUT LOSS/REPLANT CLAIMS	
		AVERAGE REPORTED PRODUCTION PER ACRE (3)	AVERAGE YIELD USED TO ESTABLISH COVERAGE PER UNIT (4)	AVERAGE REPORTED PRODUCTION PER ACRE (5)	AVERAGE YIELD USED TO ESTABLISH COVERAGE PER UNIT (6)
	Soybeans	11.5	23	16.3	23
	Soybeans	7.0	26	27.4	28
	Soybeans	17.5	34	31.9	37
	Wheat	9.1	22	29.5	24
	Wheat	3.8	29	44.8	30
	Corn	50.0	95	98.0	103
	Corn	78.8	110	171.7	130
	Corn	42.4	111	161.3	111
	Wheat	1.3	10	12.1	11
	Corn	47.5	101	138.2	98
	Corn	24.7	64	35.4	50
	Wheat	20.2	39	33.2	36
	Soybeans	18.3	38	33.0	39
	Corn	63.7	123	79.4	124
	Potatoes	95.0	254	311.3	254
	Gr. Sorghum	8.5	24	24.7	24
	Cotton	33.2	460	483.6	460
	Sunflower	526.1	1177	1505.1	1199
	Tobacco	742.4	1951	2809.4	1951
	Tobacco	377.8	1650	1709.9	1986
	Potatoes	0.0	93	155.0	92
	Tobacco	458.6	2151	2079.1	2151
	Cotton	18.1	1215	1232.9	1218
	Potatoes	61.7	186	241.2	209
	Cotton	98.6	385	607.9	446
	Tobacco	866.5	2251	1574.6	2251

TABLE 2

In our opinion, one risk of having multiple units is that it provides a greater opportunity to shift production. One insured in our sample manipulated over 550,000 pounds of rice between optional

units in order to gain more than a $6,000 indemnity. He did not have a loss when both units were considered together. Table 2 indicates that shifting of production from claim to nonclaim units may have occurred in other cases also because the average reported production per acre (column 5) on 15 of the 26 policies exceeded the average yields used to establish the coverage per unit on the nonclaim units (column 6).

It is extremely difficult, if not impossible, to independently verify the source of crops delivered to elevators, storage bins, etc., since most insureds harvest or arrange for the harvest of their own crops. Claim adjusters generally rely on information provided by the insured to elevators or to themselves for the allocation of production to units. Thus, an insured can shift production among units to maximize his claim, and the adjuster cannot independently verify the information furnished by the insured.

Loss Ratio

In addition to saving millions of dollars of net costs on policies with claims as previously discussed, the restructuring of units would also improve loss ratios.

Section 1403 (n) of the Omnibus Budget Reconciliation Act of 1993 mandated FCIC to achieve, on and after October 1, 1995, an overall projected loss ratio of not greater than 1.1. The loss ratio is obtained by dividing the indemnities by the total premiums.

Our evaluation covered only 202,835 of the 706,503 CY 1991 policies written. The overall CY 1991 loss ratio for the 706,503 policies was 1.29 ($952.4 million indemnity/$736.6 million total premiums = 1.29), meaning that for every dollar in total premium income earned, $1.29 was paid out in indemnities. Because we concentrated only on policies with claims, we are not able to project the extent that the overall loss ratio of 1.29 would be reduced by restructuring the units. However, we are able to show the effect on the loss ratio of policies with claims.

We project that the loss ratio for the 202,835 policies which had indemnity payments was 4.25. Based on the results of our evaluation, we project that FCIC could have improved its loss ratios on the 202,835 policies as shown in Table 3 on the following page.

CATEGORY	LOSS RATIO
Loss Ratio For 202,835 policies with claims	4.250
Loss Ratio If Only One Unit In County Allowed	3.253
Loss Ratio If Only Basic Units In County Allowed	3.662
Loss Ratio If Only FSN Units In County Allowed	3.863

Table 3

Unit Reform Initiative

One of the points under FCIC's "Blueprint for Financial Soundness" announced March 2, 1994, was to explore the potential to provide more flexibility in unit structure as a tool to enhance program acceptance. FCIC pointed out that some research indicated that smaller units may have a greater loss than larger units and concluded that a surcharge may be needed for small acreage units. Flexibility is desirable to the insured because production for a particular crop can be divided into two or more units with indemnity payments calculated for each unit without regard to production on the other units. An insured can suffer a loss and collect indemnity on one unit, even if the production on the other units is more than the guaranteed level. Furthermore, a key element in the proposed legislation is to provide coverage to all farmers for a nominal processing fee of $50 per crop per county, up to $100 per farmer.

This evaluation points out that the more flexible the units, the more costly it is. Also, in our opinion, the more units there are the more difficult it becomes to detect shifting of production. Among FCIC's options to improve the loss ratio is to increase the premiums or reduce the losses. We believe increasing the premiums sufficient to cover these losses would have a more negative impact on participation than would reducing the number of units. Furthermore, allowing more than one unit per crop per county for the nominal processing fee cited above could significantly increase FCIC's costs where claims are involved.

RECOMMENDATION NO. 1

Reduce the number of units allowable on each crop or otherwise compensate for the monetary impact that multiple units present when claims are involved.

FCIC Response

FCIC reiterated its experience in the early 1980's when its proposal to limit the insured to one unit per State was met with negative reaction. Consequently, the proposal was never implemented; instead, a 10 percent surcharge was added to the premium for additional units. FCIC said there is no new information to suggest policyholders would react differently today. FCIC believes that since a significant segment of its customer base wants units at a fair price, it must consider alternatives that satisfy this customer requirement at a cost that is reasonable to taxpayers and equitable for all insured producers.

FCIC pointed out that units are a significant portion of its customer base (44 percent of policies paying 75 percent of premiums), and argued that since there is little difference in losses between single and multiple unit policies (both have a 5-year average loss ratio of about 1.5), it should not focus attention solely on multiple unit contracts and divert resources from other, more important, program improvements. FCIC said its resources should continue to be devoted to evaluating and fine-tuning modifications to the APH program, assuring that the Policyholder Tracking System is functioning properly, continuing adjustments of premium rates (including any unit division or size surcharges), and other actions as described in the "Blueprint for Financial Soundness."

OIG Position

While FCIC stated that it is intuitively obvious, as demonstrated by OIG, that most units on the multiple unit contracts will not have losses, and that the excess production on those units will offset losses on other units, it is not willing to devote resources to address the problem for the reasons stated above. However, in our view, FCIC has not given sufficient weight to the added cost being borne by taxpayers due to its decision to allow additional units. Our report demonstrates with statistical validity that taxpayers paid over $336 million during CY 1991 because losses on a particular unit or units were not offset by increased production of the same crop on other units. (If units were limited to basic units per producer per county, the savings would have been over $225 million, and if limited to FSN about $189 million.) Thus, taxpayers are paying for isolated losses over which the producer has primary control (the producer designates from which unit the production was harvested) even though the producer did not have an overall loss for the crop, or his overall loss was not as great as that for which he was indemnified.

An FCIC/ASCS Task Force of compliance officials has also recognized this problem. In an April 12, 1994, memorandum to the respective agency heads, the FCIC Assistant Manager for Compliance and the ASCS Deputy Administrator for State and County Operations identified as

a program policy issue the need to eliminate multiple payments in one year to producers who experience limited losses. The memorandum pointed out that ASCS and FCIC systems allow multiple payments on multiple crops in the same year, resulting in producers receiving Federal payments without actually experiencing a net loss from their operations. The group offered the following two recommendations:

> In anticipation of crop insurance being the primary means of loss protection; develop a "Whole Farm" policy that protects against net losses. This policy would be more in keeping with the mission of stabilizing the agriculture economy and should require less premium, and less administrative cost.
>
> Limit crop insurance units to Farm Serial Numbers. This change would reduce abuse and premium risk as well as facilitate proposed crop reform and USDA reorganization. This would also greatly enhance Info-share requirements by making definitions synonymous.

We support FCIC seeking overall program improvements; however, we also believe this report demonstrates a need to address a segment of the program that is clearly not cost effective, and one that is likely to increase in magnitude with FCIC catastrophic coverage being made mandatory for all producers who participate in Federal programs. The Government is essentially going to furnish basic coverage for crops on which FCIC offers insurance for, as currently proposed, an administrative fee of $50 for each crop (a maximum of $100) or $200 per producer for multiple crops. This fee structure would not make it possible for FCIC to adjust fees for multiple units to compensate for related increased losses under catastrophic coverage. Therefore, we do not believe that FCIC should allow multiple units for catastrophic coverage. We also believe that FCIC needs to determine if the current 10 percent multiple unit premium surcharge is adequate to offset the increased amount of losses on "buy-up" coverage sold under these provisions. Before reaching a management decision, we need additional information from FCIC regarding their proposed actions for multiple units under both catastrophic and "buy-up" insurance coverage.

EXHIBIT A - SUMMARY OF MONETARY RESULTS

Funds To Be Put To Better Use:	
Management or Operating Improvement/Savings	$336,692,780

EXHIBIT B - LIST OF SAMPLE CLAIMS

State	County	Policy No.	Crop	Indemnity
1. Kansas	Nemaha		Soybean	$ 550
2. Iowa	Mahaska		Corn	977 *
3. Nebraska	Sherman		Wheat	9,909 #
4. Kansas	Jackson		Soybean	2,568
5. Illinois	Kendall		Corn	1,815 *
6. Minnesota	Faribault		Soybean	2,743
7. North Dakota	Benson		Wheat	1,192
8. North Carolina	Brunswick		Corn	1,343 *
9. Minnesota	Big Stone		Wheat	7,658 #
10. Kansas	Mitchell		Wheat	211 *
11. Missouri	Chariton		Soybean	427 *
12. Iowa	Black Hawk		Corn	4,537 *
13. Montana	Chouteau		Wheat	9,705
14. Ohio	Allen		Corn	1,197
15. Illinois	Lee		Corn	679
16. Texas	Fannin		Wheat	26,910 #
17. Illinois	Champaign		Corn	35,620 #
18. Iowa	Cerro Gordo		Corn	30,400
19. Texas	Duval		Corn	58,100 #
20. Mississippi	Lee		Soybean	25,872 #
21. Texas	Potter		Wheat	32,072
22. Michigan	Genesee		Corn	13,114

EXHIBIT B - LIST OF SAMPLE CLAIMS

State	County	Policy No.	Crop	Indemnity
23. South Dakota	Hanson		Corn	$ 14,150
24. North Dakota	Pembina		Wheat	10,081
25. New Mexico	Curry		Wheat	54,384 #
26. Illinois	Vermillion		Corn	40,300 #
27. Iowa	Hardin		Soybean	12,446
28. Iowa	Kossuth		Corn	12,032
29. Oklahoma	Woodward		Wheat	16,536 #
30. Illinois	Grundy		Soybean	11,011 #
31. Kansas	Sumner		Gr. Sorghum	835 *
32. Oklahoma	Tillman		Cotton	615 *
33. Alabama	Escambia		Cotton	6,828 *
34. Texas	Parmer		Potatoes	4,344 *
35. Idaho	Twin Falls		Potatoes	17,706
36. Texas	Dawson		Gr. Sorghum	4,446
37. Texas	Howard		Cotton	6,360 #
38. Texas	Howard		Cotton	856
39. North Dakota	Barnes		Sunflower	13,786
40. North Carolina	Granville		Tobacco	8,637
41. Kentucky	Henderson		Tobacco	145
42. North Dakota	Burleigh		Sunflower	19,102 #
43. Minnesota	Marshall		Potatoes	18,420

EXHIBIT B - LIST OF SAMPLE CLAIMS

State	County	Policy No.	Crop	Indemnity
44. Colorado	Mesa		Peach	$ 34,346 #
45. Alabama	Henry		Peanut	32,024 *
46. Arkansas	Jackson		Rice	18,937 #
47. South Carolina	Darlington		Tobacco	18,741
48. Texas	Dawson		Cotton	38,604 #
49. Texas	Jefferson		Rice	25,251 *
50. Texas	Lynn		Cotton	43,922 #
51. New Mexico	Curry		Gr. Sorghum	24,784 #
52. Texas	Dawson		Cotton	39,480 #
53. Louisiana	Franklin		Cotton	36,752
54. Georgia	Houston		Peanut	51,833 *
55. Texas	Hidalgo		Citrus	25,429 #
56. Texas	Hale		Potatoes	22,904
57. Texas	Yoakum		Cotton	76,527 #
58. Texas	Terry		Cotton	39,193
59. South Carolina	Florence		Tobacco	27,273 #
60. Georgia	Atkinson		Tobacco	39,041
TOTAL				$1,135,660

* Policy had only one unit.

\# Policy had multiple units with losses on all units.

EXHIBIT C - SAMPLING PLAN

GENERAL SAMPLE DESIGN

The data used to design and select the statistical sample was obtained by members of the Office of Inspector General's Southwest regional staff from the FCIC data base resident on the National Computer Center at Kansas City. The data consisted of crop insurance claims for CY 1991 and contained 202,835 claims as of June 12, 1992. A stratified simple random sampling scheme was designed to estimate all the quantities used in this audit. This sample design was determined to be the most efficient sampling methodology to minimize the audit constraints of manpower and travel, yet provide reliable statistical estimates. The sample unit for this stratified simple random sample was a claim for crop year 1991.

STRATIFICATION

The FCIC claims data base was stratified into two primary strata according to commodity type (MAJOR). Commodities of corn, soybean, and wheat were placed in one primary strata MAJOR 1 and all other crops in MAJOR 2. Further stratification according to indemnity amount was accomplished within each of the two MAJOR strata. In MAJOR 1 there were two strata formed subjectively (STRATA 1 and 2), while MAJOR 2 contained STRATA 3 and 4. The cumulative square root of the frequencies methodology (Cochran, SAMPLING TECHNIQUES) using the indemnity amount was employed to determine the strata boundaries in MAJOR 2 (STRATA 3 and 4). Table 1 describes the specifics for this stratification.

STRATA	INDEMNITY	NO. OF CLAIMS	INDEMNITY AMT	PERCENT
MAJOR 1				
1	$1 To $10,000	124,467	$254,972,615	51.6
2	$10,000 & Over	11,275	238,751,631	48.4
SUBTOTAL		135,742	$493,724,246	51.8
MAJOR 2				
3	$1 To $18,000	61,050	$174,155,452	38.0
4	$18,000 & Over	6,043	284,475,914	62.0
SUBTOTAL		67,093	$458,631,366	48.2
TOTAL		202,835	$952,355,612	100.0

Table 1

EXHIBIT C - SAMPLING PLAN

SAMPLE ALLOCATION AND SELECTION

A sample size of 60 claims (30 for MAJOR 1 and 30 for MAJOR 2) was determined to be sufficient to satisfy audit manpower and time constraints and give reliable statistical estimates and acceptable sample precision. In MAJOR 1, the sample size of 30 was proportionally allocated to STRATA 1 and 2 with respect to the percentage of the indemnity amount within these strata (see Table 1 above). The same process was used for MAJOR 2 (STRATA 3 and 4). All claims in STRATA 1 through 4 were selected with equal probability without replacement within the individual strata. The sample unit within each strata was a claim. A large sample ("n" equals number of samples) of 200 claims was initially selected to provide extra sample units to review if audit resources permit. The sampled claims were also listed in the order selected to provide greater flexibility if a larger sample was desired. The sample allocation for this survey design is shown in Table 2.

STRATA	NO. OF CLAIMS	INDEMNITY AMT	PERCENT OF INDEMNITY	n=200	n=70	n=60
MAJOR 1						
1	124,467	$254,972,615	51.6	52	18	15
2	11,275	238,751,631	48.4	48	17	15
SUBTOTAL	135,742	$493,724,246	51.8	100	35	30
MAJOR 2						
3	61,050	$174,155,452	38.0	38	13	11
4	6,043	284,475,914	62.0	62	22	19
SUBTOTAL	67,093	$458,631,366	48.2	100	35	30
TOTAL	202,835	$952,355,612	100.0	200	70	60

Table 2

EXHIBIT C - SAMPLING PLAN

SAMPLE SELECTION AND ANALYSIS NOTE

All statistical analysis was accomplished at the Kansas City Computer Center using the Statistical Analysis System (SAS)[1] program. The statistical estimates used for projections along with their standard errors were produced with the SAS software, SESUDAAN[2], which analyzes sample survey data gathered from complex multistage sample designs. The sample design and sample selections used in this audit were determined using SAS. Sample precision for estimating dollar values is based on a 95 percent lower one-sided confidence level.

[1]SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27513

[2]B.V. Shah of Research Triangle Institute, Research Triangle Park, North Carolina

EXHIBIT D - ANALYSIS OF ONE UNIT PER COUNTY

Table 1 shows monetary effects on Major 1, Strata 1, sample claims based on combining all units into one:[1]

(1) POLICY NO. [2]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
	$ 550	$ 116	$ 341	$ 325	$ 190	$ 11	$ 32	$ 169
[3]	977	53	157	873	0	0	0	0
[4]	9,909	207	608	9,508	0	21	61	-40
	2,568	181	532	2,217	2,568	0	0	2,568
[3]	1,815	22	66	1,771	0	0	0	0
	2,743	880	2,588	1,035	2,743	87	259	2,571
	1,192	318	938	572	1,192	32	92	1,132
[3]	1,343	64	319	1,088	0	0	0	0
[4]	7,658	281	827	7,112	0	28	83	-55
[3]	211	27	80	158	0	0	0	0
[3]	427	17	51	393	0	0	0	0
[3]	4,537	181	532	4,186	0	0	0	0
	9,705	470	1,380	8,795	5,802	48	138	5,712
	1,197	311	912	596	1,197	29	83	1,143
	679	702	2,067	-686	679	39	116	602
TOTAL	$45,511	$3,830	$11,398	$37,943	$14,371	$295	$864	$13,802

TABLE 1

[1] Major 1, Strata 1, includes corn, soybean, and wheat crop insurance claims with indemnities of less than $10,000.

[2] See exhibit B - List of Sample Claims for location of sample claims.

[3] These policies had only one unit for CY 1991.

[4] These policies had more than one unit and had losses on all units.

EXHIBIT D - ANALYSIS OF ONE UNIT PER COUNTY

Table 2 shows monetary effects on Major 1, Strata 2, sample claims based on combining all units into one:[5]

(1) POLICY NO.[6]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
	[7]$ 26,910	$ 1,492	$ 4,388	$ 24,014	$ 0	$ 150	$ 438	$ -288
	[7] 35,620	686	2,019	34,287	0	26	76	-50
	30,400	1,530	4,497	27,433	14,497	153	449	14,201
	[7] 58,100	2,744	8,070	52,774	0	275	808	-533
	[7] 25,872	5,572	16,389	15,055	536	557	1,641	-548
	32,072	4,704	13,836	22,940	3,342	470	1,383	2,429
	13,114	1,879	5,525	9,468	13,114	188	554	12,748
	14,150	1,243	3,656	11,737	542	124	365	301
	10,081	1,096	3,226	7,951	9,667	109	324	9,452
	[7] 54,384	2,403	7,067	49,720	0	0	0	0
	[7] 40,300	881	2,591	38,590	0	0	0	0
	12,446	625	1,839	11,232	1,630	61	182	1,509
	12,032	755	2,222	10,565	-148	75	222	-295
	[7] 16,536	561	1,650	15,447	0	56	164	-108
	[7] 11,011	280	824	10,467	0	27	82	-55
TOTAL	$393,028	$26,451	$77,799	$341,680	$43,180	$2,271	$6,688	$38,763

TABLE 2

[5]Major 1, Strata 2, includes corn, soybean, and wheat crop insurance claims with indemnities of $10,000 or more.

[6]See exhibit - B List of Sample Claims for location of sample claims.

[7]These policies had more than one unit and had losses on all units.

EXHIBIT D - ANALYSIS OF ONE UNIT PER COUNTY

Table 3 shows monetary effects on Major 2, Strata 3, sample claims based on combining all units into one:[8]

(1) POLICY NO.[9]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
[10]	$ 835	$ 33	$ 96	$ 772	$ 0	$ 0	$ 0	$ 0
[10]	615	32	95	552	0	0	0	0
[10]	6,828	279	1,395	5,712	0	0	0	0
[10]	4,344	140	411	4,073	0	0	0	0
	17,706	605	1,781	16,530	5,835	60	179	5,716
	4,446	1,311	3,857	1,900	4,446	71	210	4,307
[11]	6,360	1,010	2,970	4,400	0	0	0	0
	856	122	361	617	856	11	35	832
	13,786	1,359	3,999	11,146	8,713	134	400	8,447
	8,637	350	1,030	7,957	7,279	0	0	7,279
	145	377	1,885	-1363	145	0	0	145
TOTAL	$64,558	$5,618	$17,880	$52,296	$27,274	$276	$824	$26,726

TABLE 3

[8]Major 2, Strata 3, includes crop insurance claims with indemnities of less than $18,000 for all crops other than corn, soybeans, and wheat.

[9]See exhibit B - List of Sample Claims for location of sample claims.

[10]These policies had only one unit for CY 1991.

[11]These policies had more than one unit and had losses on all units.

EXHIBIT D - ANALYSIS OF ONE UNIT PER COUNTY

Table 4 shows monetary effects on Major 2, Strata 4, sample claims based on combining all units into one:[12]

(1) POLICY NO.[13]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
[14]	$ 19,102	$ 982	$ 2,889	$ 17,195	$ 0	$ 98	$ 289	$ -191
	18,420	613	1,800	17,233	18,420	62	181	18,301
[14]	34,346	481	2,404	32,423	0	49	241	-192
[15]	32,024	1,583	7,913	25,694	0	0	0	0
[14]	18,937	769	2,266	17,440	18,937	70	207	18,800
	18,741	2,486	7,315	13,912	18,741	250	733	18,258
[14]	38,604	2,544	7,483	33,665	0	76	222	-146
[15]	25,251	665	3,326	22,590	0	0	0	0
[14]	43,922	3,986	11,722	36,186	0	0	0	0
[14]	24,784	1,043	3,066	22,761	0	104	306	-202
[14]	39,480	3,391	9,974	32,897	0	0	0	0
	36,752	1,954	5,747	32,959	36,752	195	574	36,373
[15]	51,833	2,273	6,686	47,420	0	0	0	0
[14]	25,429	1,404	4,126	22,707	0	142	411	-269
	22,904	1,846	5,428	19,322	9,241	0	0	9,241
[14]	76,527	5,937	17,463	65,001	0	0	0	0
	39,193	4,712	13,862	30,043	39,193	469	1,386	38,276
[14]	27,273	456	1,341	26,388	0	46	135	-89
	39,041	1,284	3,778	36,547	2,634	128	378	2,384
TOTAL	$632,563	$38,409	$118,589	$552,383	$143,918	$1,689	$5,063	$140,544

TABLE 4

[12]Major 2, Strata 4, includes claims with indemnities of $18,000 or more for all crops other than corn, soybeans, and wheat.

[13]See exhibit B - List of Sample Claims for location of sample claims.

[14]These policies had more than one unit and had losses on all units.

[15]These policies had only one unit for CY 1991.

EXHIBIT E - ANALYSIS OF ONLY BASIC UNITS PER COUNTY

Table 1 shows monetary effects on Major 1, Strata 1, sample claims based on allowing only basic units per county:[1]

(1) POLICY NO.[2]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
	$ 550	$ 116	$ 341	$ 325	$ 44	$ 11	$ 32	$ 23
[3]	977	53	157	873	0	0	0	0
[4]	9,909	207	608	9,508	0	21	61	-40
	2,568	181	532	2,217	0	0	0	0
[3]	1,815	22	66	1,771	0	0	0	0
	2,743	880	2,588	1,035	2,042	87	259	1,870
	1,192	318	938	572	1,192	32	92	1,132
[3]	1,343	64	319	1,088	0	0	0	0
[4]	7,658	281	827	7,112	0	28	83	-55
[3]	211	27	80	158	0	0	0	0
[3]	427	17	51	393	0	0	0	0
[3]	4,537	181	532	4,186	0	0	0	0
	9,705	470	1,380	8,795	5,802	48	138	5,712
	1,197	311	912	596	0	29	83	-54
	679	702	2,067	-686	679	39	116	602
TOTAL	$45,511	$3,830	$11,398	$37,943	$9,759	$295	$864	$9,190

TABLE 1

[1] Major 1, Strata 1, includes corn, soybean, and wheat crop insurance claims with indemnities of less than $10,000.

[2] See exhibit B - List of Sample Claims for location of sample claims.

[3] These policies had only one unit for CY 1991.

[4] These policies had more than one unit and had losses on all units.

EXHIBIT E - ANALYSIS OF ONLY BASIC UNITS PER COUNTY

Table 2 shows monetary effects on Major 1, Strata 2, sample claims based on allowing only basic units per county:[5]

(1) POLICY NO.[6]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
	[7]$ 26,910	$ 1,492	$ 4,388	$ 24,014	$ 0	$ 150	$ 438	$ -288
	[7] 35,620	686	2,019	34,287	0	26	76	-50
	30,400	1,530	4,497	27,433	10,427	153	449	10,131
	[7] 58,100	2,744	8,070	52,774	0	275	808	-533
	[7] 25,872	5,572	16,389	15,055	536	557	1,641	-548
	32,072	4,704	13,836	22,940	3,342	470	1,383	2,429
	13,114	1,879	5,525	9,468	13,114	188	554	12,748
	14,150	1,243	3,656	11,737	542	124	365	301
	10,081	1,096	3,226	7,951	2,194	109	324	1,979
	[7] 54,384	2,403	7,067	49,720	0	0	0	0
	[7] 40,300	881	2,591	38,590	0	0	0	0
	12,446	625	1,839	11,232	1,554	61	182	1,433
	12,032	755	2,222	10,565	-148	75	222	-295
	[7] 16,536	561	1,650	15,447	0	56	164	-108
	[7] 11,011	280	824	10,467	0	27	82	-55
TOTAL	$ 393,028	$26,451	$77,799	$341,680	$31,561	$2,271	$6,688	$27,144

TABLE 2

[5]Major 1, Strata 2, includes corn, soybean, and wheat crop insurance claims with indemnities of $10,000 or more.

[6]See exhibit B - List of Sample Claims for location of sample claims.

[7]These policies had more than one unit and had losses on all units.

EXHIBIT E - ANALYSIS OF ONLY BASIC UNITS PER COUNTY

Table 3 shows monetary effects on Major 2, Strata 3, sample claims based on allowing only basic units per county:[8]

(1) POLICY NO.[9]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
[10]	$ 835	$ 33	$ 96	$ 772	$ 0	$ 0	$ 0	$ 0
[10]	615	32	95	552	0	0	0	0
[10]	6,828	279	1,395	5,712	0	0	0	0
[10]	4,344	140	411	4,073	0	0	0	0
	17,706	605	1,781	16,530	5,835	60	179	5,716
	4,446	1,311	3,857	1,900	2,249	71	210	2,110
[11]	6,360	1,010	2,970	4,400	0	0	0	0
	856	122	361	617	856	11	35	832
	13,786	1,359	3,999	11,146	8,713	134	400	8,447
	8,637	350	1,030	7,957	0	0	0	0
	145	377	1,885	-1,363	0	0	0	0
TOTAL	$64,558	$5,618	$17,880	$52,296	$17,653	$276	$824	$17,105

TABLE 3

[8]Major 2, Strata 3, includes crop insurance claims with indemnities of less than $18,000 for all crops other than corn, soybeans, and wheat.

[9]See exhibit B - List of Sample Claims for location of sample claims.

[10]These policies had only one unit for CY 1991.

[11]These policies had more than one unit and had losses on all units.

EXHIBIT E - ANALYSIS OF ONLY BASIC UNITS PER COUNTY

Table 4 shows monetary effects on Major 2, Strata 4, sample claims based on allowing only basic units per county:[12]

(1) POLICY NO.[13]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
[14]	$ 19,102	$ 982	$ 2,889	$ 17,195	$ 0	$ 98	$ 289	$ -191
	18,420	613	1,800	17,233	18,420	62	181	18,301
[14]	34,346	481	2,404	32,423	0	49	241	-192
[15]	32,024	1,583	7,913	25,694	0	0	0	0
[14]	18,937	769	2,266	17,440	11,937	70	207	11,800
	18,741	2,486	7,315	13,912	18,741	250	733	18,258
[14]	38,604	2,544	7,483	33,665	0	76	222	-146
[15]	25,251	665	3,326	22,590	0	0	0	0
[14]	43,922	3,986	11,722	36,186	0	0	0	0
[14]	24,784	1,043	3,066	22,761	0	104	306	-202
[14]	39,480	3,391	9,974	32,897	0	0	0	0
	36,752	1,954	5,747	32,959	36,752	195	574	36,373
[15]	51,833	2,273	6,686	47,420	0	0	0	0
[14]	25,429	1,404	4,126	22,707	0	142	411	-269
	22,904	1,846	5,428	19,322	0	0	0	0
[14]	76,527	5,937	17,463	65,001	0	0	0	0
	39,193	4,712	13,862	30,043	21,857	469	1,386	20,940
[14]	27,273	456	1,341	26,388	0	46	135	-89
	39,041	1,284	3,778	36,547	2,634	128	378	2,384
TOTAL	$632,563	$38,409	$118,589	$552,383	$110,341	$1,689	$5,063	$106,967

TABLE 4

[12]Major 2, Strata 4, includes claims with indemnities of $18,000 or more for all crops other than corn, soybeans, and wheat.

[13]See exhibit B - List of Sample Claims for location of sample claims.

[14]These policies had more than one unit and had losses on all units.

[15]These policies had only one unit for CY 1991.

EXHIBIT F - ANALYSIS OF ONE UNIT PER FARM NUMBER

Table 1 shows monetary effects on Major 1, Strata 1, sample claims based on allowing one unit per farm number:[1]

(1) POLICY NO.[2]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
	$ 550	$ 116	$ 341	$ 325	$ 42	$ 11	$ 32	$ 21
[3]	977	53	157	873	0	0	0	0
[4]	9,909	207	608	9,508	0	21	61	-40
	4,525	247	726	4,046	0	0	0	0
[3]	1,815	22	66	1,771	0	0	0	0
	2,743	880	2,588	1,035	115	87	259	-57
	1,192	318	938	572	1,192	32	92	1,132
[3]	1,343	64	319	1,088	0	0	0	0
[4]	7,658	281	827	7,112	0	28	83	-55
[3]	211	27	80	158	0	0	0	0
[3]	427	17	51	393	0	0	0	0
[3]	4,537	181	532	4,186	0	0	0	0
	9,705	470	1,380	8,795	5,802	48	138	5,712
	1,197	311	912	596	0	29	83	-54
	679	702	2,067	-686	0	39	116	-77
TOTAL	$47,468	$3,896	$11,592	$39,772	$7,151	$295	$864	$6,582

TABLE 1

[1]Major 1, Strata 1, includes corn, soybean, and wheat crop insurance claims with indemnities of less than $10,000.

[2]See exhibit B - List of Sample Claims for location of sample claims.

[3]These policies had only one unit for CY 1991.

[4]These policies had more than one unit and had losses on all units.

EXHIBIT F - ANALYSIS OF ONE UNIT PER FARM NUMBER

Table 2 shows monetary effects on Major 1, Strata 2, sample claims based on allowing one unit per farm number:[5]

(1) POLICY NO.[6]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
[7]	$ 26,910	$ 1,492	$ 4,388	$ 24,014	$ 0	$ 0	$ 0	$ 0
[7]	35,620	686	2,019	34,287	0	26	76	-50
	30,400	1,530	4,497	27,433	10,427	153	449	10,131
[7]	58,100	2,744	8,070	52,774	0	275	808	-533
[7]	25,872	5,572	16,389	15,055	124	557	1,641	-960
	32,072	4,704	13,836	22,940	0	470	1,383	-913
	13,114	1,879	5,525	9,468	0	188	554	-366
	14,150	1,243	3,656	11,737	542	124	365	301
	10,081	1,096	3,226	7,951	2,194	109	324	1,979
[7]	54,384	2,403	7,067	49,720	0	0	0	0
[7]	40,300	881	2,591	38,590	0	0	0	0
	12,446	625	1,839	11,232	1,554	61	182	1,433
	12,032	755	2,222	10,565	-148	75	222	-295
[7]	16,536	561	1,650	15,447	0	56	164	-108
[7]	11,011	280	824	10,467	0	27	82	-55
TOTAL	$393,028	$26,451	$77,799	$341,680	$14,693	$2,121	$6,250	$10,564

TABLE 2

[5]Major 1, Strata 2, includes corn, soybean, and wheat crop insurance claims with indemnities of $10,000 or more.

[6]See exhibit B - List of Sample Claims for location of sample claims.

[7]These policies had more than one unit and had losses on all units.

EXHIBIT F - ANALYSIS OF ONE UNIT PER FARM NUMBER

Table 3 shows monetary effects on Major 2, Strata 3, sample claims based on allowing one unit per farm number:[8]

(1) POLICY NO.[9]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSES	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
[10]	$ 835	$ 33	$ 96	$ 772	$ 0	$ 0	$ 0	$ 0
[10]	615	32	95	$552	0	0	0	0
[10]	6,828	279	1,395	5,712	0	0	0	0
[10]	4,344	140	411	4,073	0	0	0	0
	17,706	605	1,781	16,530	5,835	60	179	5,716
	4,446	1,311	3,857	1,900	2,249	71	210	2,110
[11]	6,360	1,010	2,970	4,400	0	0	0	0
	856	122	361	617	856	11	35	832
	13,786	1,359	3,999	11,146	7,470	134	400	7,204
	8,637	350	1,030	7,957	0	0	0	0
	145	377	1,885	-1,363	145	0	0	145
TOTAL	$64,558	$5,618	$17,880	$52,296	$16,555	$276	$824	$16,007

TABLE 3

[8]Major 2, Strata 3, includes crop insurance claims with indemnities less than $18,000 for all crops other than corn, soybeans, and wheat.

[9]See exhibit B - List of Sample Claims for location of sample claims.

[10]These policies had only one unit for CY 1991.

[11]These policies had more than one unit and had losses on all units.

EXHIBIT F - ANALYSIS OF ONE UNIT PER FARM NUMBER

Table 4 shows monetary effects on Major 2, Strata 4, sample claims based on allowing one unit per farm number:[12]

(1) POLICY NO.[13]	(2) AMT OF INDEM-NITY	(3) ADMIN EXPENSE	(4) TOTAL PREMIUM	(5) NET COST (2+3-4)	(6) SAVINGS IN INDEM-NITY PAYMENTS	(7) SAVINGS IN ADMIN EXPENSE	(8) REDUC-TION TO TOTAL PREMIUM INCOME	(9) NET DIFFERENCE (6+7-8)
	[14]$ 19,102	$ 982	$ 2,889	$ 17,195	$ 0	$ 98	$ 289	$ -191
	18,420	613	1,800	17,233	12,268	62	181	12,149
	[14] 34,346	481	2,404	32,423	0	49	241	-192
	[15] 32,024	1,583	7,913	25,694	0	0	0	0
	[14] 18,937	769	2,266	17,440	5,880	70	207	5,743
	18,741	2,486	7,315	13,912	0	250	733	-483
	[14] 38,604	2,544	7,483	33,665	0	76	222	-146
	[15] 25,251	665	3,326	22,590	0	0	0	0
	[14] 43,922	3,986	11,722	36,186	0	0	0	0
	[14] 24,784	1,043	3,066	22,761	0	104	306	-202
	[14] 39,480	3,391	9,974	32,897	0	0	0	0
	81,990	3,584	10,541	75,033	81,990	358	1,053	81,295
	[15] 51,833	2,273	6,686	47,420	0	0	0	0
	[14] 25,429	1,404	4,126	22,707	0	142	411	-269
	22,904	1,846	5,428	19,322	0	0	0	0
	[14] 76,527	5,937	17,463	65,001	0	0	0	0
	39,193	4,712	13,862	30,043	21,857	469	1,386	20,940
	[14] 27,273	456	1,341	26,388	0	46	135	-89
	39,041	1,284	3,778	36,547	0	128	378	-250
TOTAL	$677,801	$40,039	$123,383	$594,457	$121,995	$1,852	$5,542	$118,305

TABLE 4

[12]Major 2, Strata 4, includes claims with indemnities of $18,000 or more for all crops other than corn, soybeans, and wheat.

[13]See exhibit B - List of Sample Claims for location of sample claims.

[14]These policies had more than one unit and had losses on all units.

[15]These policies had only one unit for CY 1991.

EXHIBIT G - SUMMARY OF PROJECTIONS

CATEGORIES	MIDPOINT ESTIMATE	LOWER LIMIT	PRECISION (PERCENT)
PERCENT OF REDUCTION [1] IN NET COSTS IF ONLY ONE UNIT IN COUNTY ALLOWED	32.4	20.4	12.0
PERCENT OF REDUCTION [1] IN NET COSTS IF ONLY BASIC UNITS IN COUNTY ALLOWED	21.7	11.4	10.3
PERCENT OF REDUCTION [1] IN NET COSTS IF ONLY FSN UNITS IN COUNTY ALLOWED	17.7	8.0	9.7
NET DIFFERENCE AMOUNTS [2] IF ONE UNIT PER COUNTY ALLOWED (60 CASES)	$ 336,692,780	$ 197,285,497	41.4
NET DIFFERENCE AMOUNTS [2] IF ONLY BASIC UNITS PER COUNTY ALLOWED (60 CASES)	$ 225,613,908	$ 101,495,291	55.0
NET DIFFERENCE AMOUNTS [2] IF ONE UNIT PER COUNTY FSN ALLOWED (60 CASES)	$ 189,022,793	$ 67,436,094	64.3
UNIVERSE OF NET COSTS [3] (60 CASES)	$1,037,602,559	$783,412,637	24.5
UNIVERSE OF NET COSTS [4] FOR FSN UNITS (60 CASES)	$1,066,160,981	$ 810,005,062	24.0
LOSS RATIO FOR ORIGINAL UNITS (60 CASES)	4.250	3.185	25.0
LOSS RATIO IF ONLY ONE UNIT PER COUNTY ALLOWED	3.253	2.212	32.0
LOSS RATIO IF ONLY BASIC UNITS PER COUNTY ALLOWED	3.662	2.594	29.2
LOSS RATIO IF ONLY FSN UNITS PER COUNTY ALLOWED	3.863	2.838	26.5

[1] This is the projected net difference amounts for 60 cases divided by the applicable universe of net costs. Net costs consist of three elements: indemnity expense plus administrative expense less total premium income.

[2] Net difference is computed by subtracting the restructured net costs from the original net costs.

[3] This is the universe of net cost related to limiting units to a county on the basis of one unit a county and only basic units in a county.

[4] This is the universe of net costs related to limiting units to a county on the basis of an ASCS FSN assigned in a county. This could involve operations which extend beyond county lines. Net costs consists of three elements: indemnity expense plus administrative expense less total premium income.

EXHIBIT G - SUMMARY OF PROJECTIONS

CATEGORIES	MIDPOINT ESTIMATE	LOWER LIMIT	PRECISION (PERCENT)
UNIVERSE OF NET COSTS [5] FOR POLICIES WITH MULTIPLE UNITS (47 CASES)	$875,234,632	$606,079,501	30.8
NET DIFFERENCE AMOUNTS [6] FOR POLICIES WITH MULTIPLE UNITS IF ONE UNIT PER COUNTY ALLOWED (47 CASES)	$336,692,780	$197,285,497	41.4
NET DIFFERENCE AMOUNTS [6] FOR POLICIES WITH MULTIPLE UNITS IF ONLY BASIC UNITS PER COUNTY ALLOWED (47 CASES)	$225,613,908	$101,495,291	55.0
UNIVERSE OF NET COSTS [7] FOR FSN UNITS WITH MULTIPLE UNITS (47 CASES)	$ 903,793,054	$631,765,046	30.1
NET DIFFERENCE AMOUNTS [6] FOR POLICIES WITH MULTIPLE UNITS IF ONE UNIT PER COUNTY FSN ALLOWED (47 CASES)	$ 189,022,793	$ 67,436,094	64.3
UNIVERSE OF NET COSTS [5] FOR POLICIES WITH MULTIPLE UNITS INCURRING CLAIMS ON SOME BUT NOT ALL UNITS (26 OF 47 CASES)	$ 434,704,131	$210,089,770	51.7
NET DIFFERENCE AMOUNTS [6] FOR POLICIES WITH MULTIPLE UNITS INCURRING CLAIMS ON SOME BUT NOT ALL UNITS IF ONE UNIT PER COUNTY ALLOWED (26 OF 47 CASES)	$333,037,177	$193,933,205	41.8
NET DIFFERENCE AMOUNTS [6] FOR POLICIES WITH MULTIPLE UNITS INCURRING CLAIMS ON SOME BUT NOT ALL UNITS IF ONLY BASIC UNITS PER COUNTY ALLOWED (26 OF 47 CASES)	$224,184,674	$100,241,647	55.3
UNIVERSE OF NET COSTS [7] FOR FSN UNITS WITH MULTIPLE UNITS INCURRING CLAIMS ON SOME BUT NOT ALL UNITS (26 OF 47 CASES)	$ 463,262,554	$232,513,893	49.8
NET DIFFERENCE AMOUNTS [6] FOR POLICIES WITH MULTIPLE UNITS INCURRING CLAIMS ON SOME BUT NOT ALL UNITS IF ONE UNIT PER COUNTY FSN ALLOWED (26 OF 47 CASES)	$ 189,613,210	$ 68,099,232	64.1

[5]This is the universe of net cost related to limiting units to a county on the basis of one unit a county and only basic units in a county.

[6]Net difference is computed by subtracting net costs from the original net costs.

[7]This is the universe of net costs related to limiting units to a county on the basis of an ASCS FSN assigned in a county. This could involve operations which extend beyond county lines. Net costs consists of three elements: indemnity expense plus administrative expense less total premium income.

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[7]This is the universe of net costs related to limiting units to a county on the basis of an ASCS FSN assigned in a county. This could involve operations which extend beyond county lines. Net costs consists of three elements: indemnity expense plus administrative expense less total premium income.

EXHIBIT H - FCIC RESPONSE TO THE DRAFT REPORT

United States Department of Agriculture | Federal Crop Insurance Corporation | Office of The Manager | Washington, D.C. 20250

August 31, 1994

INFORMATIONAL MEMORANDUM

TO: John O. Leavy
Regional Inspector General for Audit

FROM: Kenneth D. Ackerman
Manager

SUBJECT: Agency Position With Regard to the Recommendation Contained in the Draft Report of Audit 05600-6-TE, "Crop Year 1991 Units Evaluation"

ISSUE:

The subject audit recommends that the Federal Crop Insurance Corporation (FCIC) "Reduce the number of units allowable on each crop or otherwise compensate for the monetary impact multiple units present when claims are involved." This memorandum outlines FCIC's position concerning the recommendation.

DISCUSSION:

Units for most crops are defined in the crop insurance policies, which are promulgated in the Code of Federal Regulations (CFR), Part 7. Thus, any initiative to amend the definition of unit or to restrict the availability of optional units will require public notice and compliance with the terms of the Administrative Procedures Act. In the mid-1980s, FCIC formally proposed via the rulemaking process that each insured producer would be entitled to one unit per state per crop. This proposal generated the most public input that FCIC received on any regulatory initiative in the 1980s. Numerous public hearings and the written record resulted in a consistent message: **customers overwhelmingly rejected the proposal**, and stated a willingness to pay additional premium to retain basic and optional units similar to those which continue to be available.

As a consequence of this public input, FCIC did not implement the proposed change. However, FCIC did impose a surcharge of 10 percent of premium whenever a producer elected to subdivide a basic unit as defined in the appropriate crop insurance policy into optional units under the terms permitted by that policy.

The record strongly indicates that units, both basic and optional, constitute a major component of customers' requirements for the crop insurance program. Thus, the statement made in the audit

report (page 6) that FCIC retained the unit structure due to threats made by the insurance industry was one element in the debate, but it was not the only element. Customers' comments were the major factor in deciding the issue.

There has been no new information since the mid-1980s that suggests policyholders would react differently to proposals to change the definitions of units contained in the CFR. To the contrary, most comments regarding units state that the policy should be more liberal. FCIC does seek to meet customer's expectations and demands for desirable program features to the extent that it can within the constraints of its commitment to achieve actuarial sufficiency. With regard to the question of units, FCIC must ask whether the situation identified by OIG demonstrates actuarial performance distinctly different from other aspects of the program. If it is different, then FCIC has two choices, as outlined in OIG's recommendation: aggregate units contrary to customers' expressed wants or impose additional premiums to compensate. General guidance embodied in the National Performance Review directs Executive Branch agencies to make the customer's need a priority in decisions, subject to a need to balance the customer's wants with the resulting costs to taxpayers. Since a significant segment of the customer base wants unit division at a fair price, FCIC believes that it must examine fully the need for such action and to consider alternatives that satisfy this customer requirement at a cost that is reasonable to taxpayers and equitable for all insured producers.

How significant is the customer base that has more than one unit per policy (whether because of multiple basic or optional units)? The attached table 1 demonstrates that, during 1989-1993, an average of about 44 percent of all policies involved multiple units, ranging from a low of 38 percent to a high of 48 percent during the 5 years. However, these policies paid an average of three-fourths of all premiums, ranging from 66 percent to about 78 percent during the 5 years. Clearly, a significant portion of FCIC's customer base would be affected by any changes to unit structure or premium rating strategies.

Does the actuarial performance of units insured under single and multiple unit policies differ in any significant respect? The characteristics shown in table 1 indicate only small and somewhat inconsistent differences. In some cases, the single unit policies possess a characteristic that is more desirable (e.g., lower loss cost), but the multiple unit policies show a more desirable characteristic in others. Policies with multiple and single units are similar for the characteristics of unit size, loss cost, loss ratio, and indemnity per unit. In particular, the loss ratio averaged over the 5 years is 1.46 for contracts with multiple units and 1.50 for contracts with a single unit. The loss ratio for the single unit contracts is worse for 3 of the 5 years. Based on these data, FCIC cannot identify unique "...monetary impact multiple units present when claims are involved." These aggregate data suggest that similar monetary impacts occur between the two categories of policies. This raises the following issue: should FCIC pursue a course of action aimed at one segment of the population when the evidence suggests that the problem of indemnities exceeding premiums is comparable in magnitude on both single and multiple unit contracts?

Agency Position With Regard to the Recommendation
Contained in the Draft Report of Audit 05600-6-TE 3

The issue may be illustrated in another way. Suppose OIG's estimated savings due to reduced indemnities ($323.6 million, 96.1 percent of total savings of $336.7 million) for 1991 that are estimated to be realized by allowing only one unit per county actually were realized. Under this assumption, indemnities paid on multiple unit contracts in 1991 would have been $378.3 million rather than $701.9 million. The resultant loss ratio on the multiple unit policies would have been 0.67, while the loss ratio on single unit policies would remain at 1.43 The overall loss ratio for 1991 would have been approximately 0.85 with this assumption.

The findings of OIG are consistent with probability theory, which is illustrated by the following example. Suppose there are N units (assume 1,000) of similar size in a geographic area such as a state. The probability of a loss on any one of those units is p, 0.00 <= p <= 1.00, with p independent among units (assume p = 0.25). The expected number of units with a loss is n = p * N (thus, n = 250). Now suppose that these N units are randomly configured into crop insurance policies consisting of single and multiple units. What is the probability that all units on multiple unit policies will have a loss? For two units, the probability p * p, which is 0.0625. Similarly, the probability that all units will have losses on contracts of 3 units is p * p * p, which is 0.015625. Thus, it is intuitively obvious that most units on the multiple unit contracts will not have losses. The excess of production over the guarantee from those units will offset the losses on the loss units, thereby mitigating or eliminating the amount of loss. OIG has demonstrated the validity of this expectation.

The foregoing holds true even if the assumption of independence is relaxed. Suppose the probability of loss on any unit is conditional on the probability of a loss on other units. There is no a priori reason to expect that these units will be insured under the crop insurance contract of any particular individual. Indeed, there is no reason to expect that all units with losses will be insured. Thus, there is no basis to expect a materially higher incidence of losses occurring for all units under multiple unit policies. There still should be numerous situations in which the production from units without losses will offset the loss on those units with a loss.

FCIC does not believe that factors which cause losses to exceed premiums on a consistent basis can be blamed primarily on subdivision of basic units into optional units. The aggregate data indicate that the factors causing inadequate premium income very likely may be the same for multiple as well as single unit crop insurance contracts. Thus, focusing attention solely on the multiple unit contracts and expending resources to mandate consolidation of those units may divert resources from other, more important, program improvements.

FCIC is committed to improving program performance, achieving loss ratios that comply with directives of Congress, and providing effective risk management tools to American farmers. FCIC does not believe that the recommendation will assist in achieving these goals. Instead, resources should continue to be devoted to overall program improvements such as evaluating and fine-tuning the modifications to the Actual Production History program; assuring that the

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Contained in the Draft Report of Audit 05600-6-TE

Policyholder Tracking System is functioning properly; continuing adjustments of premium rates as appropriate, including any unit division or size surcharges; and other actions as described in the "Blueprint for Financial Soundness." FCIC believes that these actions will have a bigger payoff in terms of reducing the loss ratios on **all** crop insurance contracts, not just those that have multiple units.

Attachment

Table 1. Volumes of Business and Selected Performance Measures, Single versus Multiple Unit Policies, 1989-1993

Year		Policies Insured (no.)	Policies w/ Losses (no.)	Units Insured (no.)	Units w/ Losses (no.)	Liability (thou. $)	Premium (thou. $)	Indemnity (thou. $)	Share of Total Premium (%)	Share of Total Policies (%)	Unit Size Liability ($)	Unit Size Premium ($)	Loss Frequency Policy	Loss Frequency Unit	Loss Cost	Indemnity per Unit Insured ($)	Indemnity per Unit Indemnified	Loss Ratio
1989	Mulp.	344,809	135,693	1,269,472	318,960	6,843,948	537,093	805,145	85.6	38.4	7,045	423	37.3	25.0	0.080	634	2,540	1.50
	Sngl.	584,911	144,130	684,811	144,130	4,668,289	282,110	410,073	34.4	61.6	7,983	482	24.6	24.6	0.088	701	2,846	1.45
	Total	929,720	280,023	1,954,283	463,090	13,513,245	819,203	1,215,218	100.0	100.0	7,341	442	29.5	24.9	0.090	655	2,636	1.48
1990	Mulp.	388,641	99,170	1,378,088	212,227	9,294,730	613,625	747,508	73.4	43.1	6,745	445	25.7	15.4	0.080	542	3,521	1.22
	Sngl.	508,531	89,992	508,531	86,992	3,518,027	222,220	281,080	26.6	56.9	6,917	437	17.1	17.1	0.080	553	3,231	1.26
	Total	894,372	189,162	1,886,697	299,319	12,812,757	835,845	1,028,588	100.0	100.0	6,791	443	20.8	16.0	0.080	545	3,436	1.23
1991	Mulp.	329,581	114,787	1,205,232	251,004	8,432,755	590,241	701,935	78.0	46.7	6,997	466	34.8	20.8	0.083	582	2,797	1.25
	Sngl.	378,894	89,483	378,894	89,483	2,798,884	178,462	253,221	24.0	53.3	7,342	468	23.5	23.5	0.092	672	2,862	1.43
	Total	708,475	203,250	1,582,126	338,487	11,199,739	736,703	955,156	100.0	100.0	7,079	466	28.8	21.6	0.085	604	2,814	1.30
1992	Mulp.	329,957	83,907	1,207,797	188,344	8,639,490	597,382	770,881	77.6	46.4	7,183	486	26.1	15.4	0.082	588	3,814	1.21
	Sngl.	342,251	58,831	342,251	84,831	2,675,285	170,618	262,000	22.6	53.6	7,817	499	17.1	17.1	0.076	690	3,446	1.18
	Total	683,188	142,438	1,549,988	244,976	11,314,775	768,208	912,881	100.0	100.0	7,300	489	21.6	16.8	0.081	648	3,728	1.20
1993	Mulp.	317,045	140,929	1,209,281	340,922	8,878,218	580,535	1,234,657	76.9	46.7	7,210	462	44.5	26.3	0.143	1,030	3,634	2.13
	Sngl.	382,364	112,158	382,364	112,158	2,481,807	174,043	383,290	23.1	53.3	7,401	480	31.0	31.0	0.147	1,065	3,507	2.26
	Total	679,409	253,086	1,568,645	453,078	11,360,123	754,588	1,632,147	100.0	100.0	7,256	462	37.3	28.9	0.144	1,042	3,602	2.16
89-93	Mulp.	1,717,933	574,586	6,253,788	1,307,547	43,987,137	2,978,886	4,254,107	73.7	44.1	7,022	480	33.4	20.8	0.096	671	3,216	1.46
	Sngl.	2,176,951	490,372	2,176,951	490,372	16,311,602	1,026,671	1,589,704	26.3	55.9	7,499	472	22.5	22.5	0.094	708	3,140	1.50
	Total	3,894,884	1,064,958	8,430,839	1,797,919	60,298,739	3,994,557	5,743,811	100.0	100.0	7,146	493	27.4	21.3	0.095	681	3,195	1.47

Mulp. Indicates policies with more than one unit, whether defined as basic or optional.
Sngl. Indicates policies with only one unit.
Loss frequency indicates the percentage of policies or units in the category that were paid an indemnity.
Loss cost is the ratio of indemnities paid in the category to liability for that category.

ABBREVIATIONS

APH	Actual Production History
ASCS	Agricultural Stabilization and Conservation Service
CY	Crop Year
FCIC	Federal Crop Insurance Corporation
FSN	Farm Serial Numbers
FY	Fiscal Year
No.	Number
OIG	Office of Inspector General
SAS	Statistical Analysis System
USDA	United States Department of Agriculture