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REPORT TO THE
SUBCOMMITTEE FOR CONSUMERS
COMMITTEE ON COMMERCE
UNITED STATES SENATE

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Administration of Marketing Orders for Fresh Fruits and Vegetables

B-177170

Agricultural Marketing Service
Department of Agriculture

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BY THE COMPTROLLER GENERAL
OF THE UNITED STATES

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-177170

The Honorable Frank E. Moss, Chairman
Subcommittee for Consumers
Committee on Commerce
United States Senate

Dear Mr. Chairman:

This is our report on the Department of Agriculture's administration of marketing orders, particularly the Florida tomato marketing order.

We made our review in accordance with your request of March 15, 1973, and subsequent discussions with your office. We obtained and have incorporated the Department's comments in the report.

We do not plan to distribute the report further unless you agree or publicly announce its contents.

Sincerely yours,

Elmer B. Staats
Comptroller General
of the United States

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ABBREVIATIONS

AMS	Agricultural Marketing Service
ARS	Agricultural Research Service
COLC	Cost of Living Council
FSIS	Federal-State Inspection Service
FTC	Federal Trade Commission
GAO	General Accounting Office
OCA	Office of Consumer Affairs
USDA	U. S. Department of Agriculture

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COMPTROLLER GENERAL'S REPORT TO THE SUBCOMMITTEE FOR CONSUMERS COMMITTEE ON COMMERCE UNITED STATES SENATE

ADMINISTRATION OF MARKETING ORDERS FOR FRESH FRUITS AND VEGETABLES
Agricultural Marketing Service
Department of Agriculture
B-177170

D I G E S T

WHY THE REVIEW WAS MADE

At the Chairman's request, GAO reviewed how the Department of Agriculture (USDA) administers marketing orders, particularly the Florida tomato marketing order. In addition, GAO reviewed the administration of one marketing order for celery and four for oranges.

At June 30, 1974, there were 48 marketing orders or marketing agreements in effect for fresh fruits, vegetables, and nuts. During fiscal year 1974, these orders and agreements covered commodities valued at about $3.2 billion at the farm level; the six orders GAO reviewed covered commodities valued at about $876 million at the farm level.

As requested, GAO

- --examined into the manner in which USDA considers consumer interests and coordinates with other Federal agencies in administering market orders;
- --ascertained whether USDA or others had researched the effects of marketing orders on retail prices,
- --ascertained whether any research had been done or whether efforts had been made to find alternatives to marketing orders that would increase benefits to consumers without seriously jeopardizing producers' interests, and
- --inquired into factors affecting tomato quality.

FINDINGS AND CONCLUSIONS

The Agricultural Marketing Agreement Act of 1937 authorizes the Secretary of Agriculture to issue, and from time to time amend, marketing orders regulating the handling of specified agricultural commodities so as to

- --establish and maintain such orderly marketing conditions as will establish parity prices to farmers (parity is intended to give a unit of an agricultural commodity the same purchasing power for other goods and services as it held in the base period, 1910-14),
- --protect the interest of the consumer by prohibiting any marketing-order action which would

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keep prices to farmers above parity, and

--provide, in the interests of farmers and consumers, an orderly flow to market of the commodity being regulated to avoid unreasonable fluctuation in supplies and prices. (See p. 2.)

Regulatory actions under marketing orders generally take the form of shipment regulations which are used to control such matters as the grade or size of a commodity going to market; the rate of flow or the total amount of a commodity going to market; or the size, capacity, weight, and dimensions of shipping containers. (See p. 3.)

Consideration of consumers' interest and coordination with other Federal agencies

The Agricultural Marketing Agreement Act provides that the consumers' interest be protected and that the Secretary give notice and provide an opportunity for a public hearing on all proposed marketing orders. But neither the act nor USDA's implementing instructions specifically require that consumers participate in marketing order proceedings.

The Administrative Procedure Act requires that, before issuing or amending regulations (which include shipment regulations), an agency publish in the Federal Register a general notice of regulations or proposed changes thereto. The notice is to invite interested persons to participate in the rulemaking through submission of written data, views, or arguments and sometimes by oral presentations.

The act generally provides exemption from notice procedures for situations of emergency and necessity. When using such expedite procedures, the agency must determine that the notice procedure is impracticable, unnecessary, or contrary to public interest.

According to USDA, it considers the consumers' interest in marketing order proceedings

--by evaluating each proposed action's effect on prices, relative to parity;

--by publishing rulemaking notices in the Federal Register, unless impracticable; and

--by maintaining an efficient marketing system to help insure a dependable supply of quality products.

GAO, which reviewed actions under the six marketing orders since 1968, noted that USDA had published rulemaking notices in the Federal Register--which invited interested persons to submit written comments--in formulating and issuing initial or early-season shipment regulations under the four marketing orders which used such regulations. Rulemaking was not required on the seasonal marketing policies proposed under

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two of the orange marketing orders.

USDA published rulemaking notices during marketing seasons in formulating and issuing amendments to shipment regulations in only a few cases. USDA officials said that publishing rulemaking notices was not always practicable because (1) some amendments needed to be implemented as soon as possible to adjust for changes in supply or market conditions or to maintain prices for growers or (2) restrictions had to be reviewed and changed weekly. They said the Administrative Procedure Act authorized exceptions to publishing notices in such cases.

USDA's records of material submitted on actions proposed under the four marketing orders for which rulemaking notices were published showed that, since 1968,

--only 4 of over 100 statements concerning tomato marketing order actions were from consumers or consumer organization representatives and
--no consumers or consumer organization representatives had submitted statements regarding actions under the celery marketing order or the two orange marketing orders.

According to USDA officials, all material submitted during rulemaking is considered in the decisionmaking process. (See p. 11.)

The Agricultural Marketing Agreement Act does not require USDA to coordinate with other Federal agencies in formulating or administering marketing orders, and there are no continuing arrangements for such coordination. Other agencies, however, have occasionally communicated with USDA about particular aspects of marketing orders; USDA tells the Office of Consumer Affairs and the State Department about proposed shipment regulations under the Florida tomato marketing order; and from April 1973 until April 1974 USDA had an agreement with the Cost of Living Council to obtain its concurrence on proposed supply restrictions. (See p. 17.)

The 93d Congress considered but did not enact proposed legislation which would have established a consumer agency to protect the consumers' interest within the Federal Govenment. The agency would have had the authority to represent the interest of consumers before Federal agencies. The legislation would also have required other Federal agencies to notify the consumer agency of any action being considered which could substantially affect the interest of consumers (See p. 20.)

Advocates of legislation to create a consumer agency have

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indicated that they will introduce similar legislation in the next Congress. Such legislation, if enacted and properly implemented, could provide more opportunity for considering the consumers' interest in formulating and administering marketing orders and shipment regulations. (See p. 21.)

Research on the effects of marketing orders on retail prices

Most USDA research on the price effects of marketing order actions has been directed at their effects on farm-level prices. USDA's and other organizations' research on the effect that farm-level price changes have on retail prices has been limited and the results have been inconclusive.

On October 8, 1974, the President announced that, as part of the anti-inflation program, agricultural marketing orders would be reviewed to eliminate or modify those responsible for inflated prices. Such a review might provide more definitive information on the effects of marketing order actions on retail prices. (See p. 23.)

Research done or efforts made to find alternatives to marketing orders

USDA or other organizations had not done any research or studies to determine whether there were alternatives to marketing orders which could be used to meet the Agricultural Marketing Agreement Act's objectives and which would increase the consumers' benefits without seriously jeopardizing producers' interests.

USDA officials said that USDA had not tried to find alternatives to marketing orders because it believed that marketing orders were as relevant to the needs of farmers today as they were when the act was passed and that orderly marketing and price stability were desirable goals from the point of view of both the consumer and the farmer. (See p. 27.)

Factors affecting tomato quality

GAO's review covered four factors which affect tomato quality: vitamin content, flavor, ethylene gas, and maturity.

Although considerable research has been done, the results are conflicting as to whether tomatoes harvested at the vine-ripe-breaker stage--when the first pink or yellow color occurs--are much better than mature-green-harvested tomatoes in terms of vitamin content and flavor. (See pp. 29 and 31.)

Research has indicated that tomatoes picked at the mature-green stage and ripened with ethylene gas--which tomatoes also produce

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naturally--have about the same vitamin content and flavor as mature-green tomatoes allowed to ripen on their own. The Environmental Protection Agency has sanctioned the use of ethylene gas to promote ripening, because it has been used for many years with no apparent adverse effects on health. (See p. 32.)

There is general agreement that an immature tomato will be deficient in both vitamin content and flavor. Because it is very difficult to distinguish immature tomatoes from mature-green tomatoes by external appearance alone, some immature tomatoes may have reached the market. This has led to some of the controversy relating to the quality of Florida-grown tomatoes. It is not known, however, whether the quantity of such tomatoes reaching the market has posed a major problem for consumers. (See p. 33.)

The Agricultural Research Service is testing a device which may help in detecting immature tomatoes before they reach the consumer. The Service is also measuring the vitamin content of tomatoes at different stages of maturity. (See p. 37.)

AGENCY COMMENTS AND UNRESOLVED ISSUES

USDA said that the report reasonably portrayed operations under the marketing order program. USDA also said that it believed consumers had a significant stake in the maintenance of orderly food marketing, which is the basic goal of the marketing order program. (See p. 22.)

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CHAPTER 1

INTRODUCTION

The Chairman, Subcommittee for Consumers, Senate Committee on Commerce, requested that we review how the U.S. Department of Agriculture (USDA) administers marketing orders,[1] particularly the Florida tomato marketing order. (See app. I.) In discussions with the Chairman's office, we were asked to:

1. Examine into the manner in which USDA considers consumer interests and coordinates with other Federal agencies in administering marketing orders.

2. Ascertain whether USDA or others had researched the effects of marketing orders on retail prices.

3. Ascertain whether any research had been done or whether efforts had been made to find alternatives to marketing orders that would increase benefits to consumers without seriously jeopardizing producers' interests.

4. Inquire into factors affecting tomato quality.

In addition to reviewing the administration of the Florida tomato marketing order, we reviewed the administration of one marketing order for celery and four for oranges.

At June 30, 1974, there were 48 marketing orders or marketing agreements in effect for fresh fruits, vegetables, and nuts. (See app. II.) During fiscal year 1974, these orders and agreements covered agricultural commodities valued at about $3.2 billion at the farm level; the six orders we reviewed covered commodities valued at about $876 million at the farm level.

The Secretary of Agriculture is responsible for administering marketing orders and agreements. The Fruit and

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[1] Marketing orders are enabling documents which provide the authority for regulating the handling of agricultural commodities.

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Vegetable Division of USDA's Agricultural Marketing Service (AMS) administers the marketing orders and agreements discussed in this report.

MARKETING ORDERS AND AGREEMENTS

The Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601), authorizes marketing orders and agreements. It was enacted to help relieve the depressed economic conditions in the agricultural sector during the 1930s.

The act (7 U.S.C. 602) declared the policy of the Congress to be:

> "(1) Through the exercise of the powers conferred upon the Secretary of Agriculture under this chapter, to establish and maintain such orderly marketing conditions for agricultural commodities in interstate commerce as will establish, as the prices to farmers, parity[1] prices * * *.
>
> "(2) To protect the interest of the consumer by (a) approaching the level of prices which it is declared to be the policy of Congress to establish * * * by gradual correction of the current level at as rapid a rate as the Secretary of Agriculture deems to be in the public interest and feasible in view of the current consumptive demand in domestic and foreign markets, and (b) authorizing no action under this chapter which has for its purpose the maintenance of prices to farmers above the level which it is declared to be the policy of Congress to establish * * *."
>
> * * * * *
>
> "(4) * * * to establish and maintain such orderly marketing conditions for any agricultural commodity * * * [as enumerated in the act] as will

[1] Parity is intended to give a unit of an agricultural commodity the same purchasing power for other goods and services as it held in the base period, 1910-14.

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provide, in the interests of producers and consumers, an orderly flow of the supply thereof to market throughout its normal marketing season to avoid unreasonable fluctuations in supplies and prices."

To effect the declared policy, the act (7 U.S.C. 608b) authorizes the Secretary:

" * * * after due notice and opportunity for hearing, to enter into marketing agreements with processors, producers, associations of producers, and others engaged in the handling of any agricultural commodity or product thereof, only with respect to such handling as is in the current of interstate or foreign commerce or which directly burdens, obstructs, or affects, interstate or foreign commerce in such commodity or product thereof."

The act (7 U.S.C. 608c(1)) also authorizes the Secretary, after giving due notice of and an opportunity for a hearing, to:

" * * * issue, and from time to time amend, orders applicable to processors, associations of producers, and others engaged in the handling of any agricultural commodity or product thereof * * *."

The act (7 U.S.C. 608c(2)) identifies the commodities and products thereof which marketing orders can regulate.

Some of the regulatory controls which the act (7 U.S.C. 608c(6)) authorizes are

--quality restrictions used to control the grade or size of a commodity going to market;

--quantity restrictions used to control the rate of flow or the total amount of a commodity going to market;

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--container restrictions used to control size, capacity, weight, and dimensions of shipping containers;

--allotment restrictions used to control the amount of a commodity which a handler may (1) purchase from or handle on behalf of any and all producers during a specified period or (2) market or transport to market; and

--reserve restrictions used to establish reserve pools of a commodity and to provide for the equitable distribution of the net return derived from the sale of such reserve pools.

The act (7 U.S.C. 608e(1)) requires that, whenever a marketing order is issued for certain specified commodities, any terms regulating the grade, size, quality, or maturity of the commodity must also apply to imports. Appendix II lists the regulatory provisions authorized under marketing orders and agreements in effect at June 30, 1974, for fresh fruits, vegetables, and nuts.

Marketing orders and marketing agreements are generally considered synonymous. Marketing orders for fresh fruits, vegetables, and nuts are rarely issued without a marketing agreement and vice versa. When both are used, their terms are identical; when approved by the Secretary, both have the force and effect of law. The basic difference between marketing orders and agreements is that orders are binding on all handlers in the relevant production area but agreements are binding only on those handlers who sign the agreements.

Once the Secretary issues marketing orders for agricultural commodities, they are valid until terminated. They can apply only to commodities listed in the act (7 U.S.C. 608c(2)) and must be limited to the smallest production area which the Secretary finds practicable to achieve the policy of the act. The act (7 U.S.C. 608b) specifically exempts the making of marketing agreements with the Secretary from the provisions of antitrust laws, The Supreme Court of the United States has extended the same exemption

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to marketing orders which are otherwise valid under the provisions of the act.[1]

Hereinafter, both marketing orders and marketing agreements are referred to as marketing orders.

ADMINISTRATION OF MARKETING ORDERS

The act (7 U.S.C. 608c(7)) authorizes the Secretary to establish an agency or agencies for each order to

--administer the order according to its terms and provisions;

--make rules and regulations to effect the terms and provisions of the order;

--receive, investigate, and report to the Secretary complaints of violations of the order; and

--recommend to the Secretary amendments to the order.

These agencies are generally referred to as industry administrative committees and are usually made up of producers and handlers.

The marketing orders, published as USDA regulations, specify the composition of each industry administrative committee. For example, each of the 12 members of the Florida Tomato Committee must be an individual producer or an officer or employee of a corporate producer. Each of the 15 members of the Florida Celery Committee must be a producer, an employee of a producer, a handler, or an employee of a handler. Of the 11 members of the Valencia Orange Administrative Committee, 6 must be growers; 4 must be handlers; and 1, to be selected by the other 10, cannot be a grower or a handler or an employee, agent, or representative of a grower or a handler.

USDA officials told us that, because of the frequent need to issue periodic regulations to maintain orderly

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[1] United States v. Rock Royal Co-Op, 307 U.S. 533 (1939)

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marketing conditions, it would be impracticable for USDA to administer these marketing orders without the assistance and participation of the industry administrative committees. They said also that the producers and handlers were in the best position to determine when such regulations might be necessary.

According to USDA:

--AMS, acting for the Secretary, continually monitors marketing order actions.

--AMS representatives attend committee meetings and provide guidance and counsel at all stages in the development of committee policies and recommendations.

--The committees recommend actions; but the Secretary selects committee members, receives committee recommendations, and issues regulations.

Shipment regulations

Regulatory actions under marketing orders generally take the form of shipment regulations. The administrative committees recommend to the Secretary those shipment regulations deemed necessary to maintain or improve prices producers will receive.

The Secretary must approve the proposed shipment regulations before the administrative committees can implement them. Upon approval, shipment regulations become part of the Code of Federal Regulations and have the force and effect of law.

MARKETING ORDERS REVIEWED

The nature and regulatory aspects of the six marketing orders we reviewed are discussed below.

Florida tomato marketing order

During the winter season (November to June) Florida and Mexico supply most of the fresh tomatoes marketed in the United States. Of the total amount of tomatoes shipped

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to U.S. markets from Florida and Mexico during the 1972-73 winter season, Florida shipped about 52 percent and Mexico 48 percent.

The Secretary issued the Florida tomato marketing order in 1955. The order authorized the use of grade, size, maturity, quality, and packaging restrictions. Shipment regulations were implemented under the order until 1959. There was no regulatory activity under the order from 1959 until the fall of 1968 when shipment regulations were implemented to control the grade and size of tomatoes. As the act requires, the regulations also apply to imported tomatoes.

Fresh tomatoes are marketed according to their sizes and USDA grades. USDA grades for fresh tomatoes range from U.S. No. 1 to U.S. No. 3 and are based on such physical appearance factors as shape, firmness, smoothness, maturity, and the absence of decay or other damage. Following are tomato-size designations,

Size designation	Diameter (inches)	
	From	To
7x8 (extra small)	1-28/32	2-4/32
7x7 (small)	2-4/32	2-9/32
6x7 (medium)	2-9/32	2-17/32
6x6 (large)	2-17/32	2-28/32
5x6 and 5x5 (extra large)	2-28/32	3-15/32
4x5 (maximum large)	3-15/32	-

Except for part of the 1970-71 season and all the 1971-72 season, size and grade restrictions have been used each season since 1968 to keep tomatoes less than 1-28/32 inches in diameter off the fresh-winter-tomato markets. Such restrictions have also been used to keep small and extra-small tomatoes off the market in some seasons. See appendix III for a chronology of the Florida tomato marketing order shipment regulations used in the 1968-69 through the 1973-74 winter seasons.

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During parts of the 1968-69 and 1969-70 seasons, dual-size restrictions, which set larger minimum shipping sizes for vine-ripe tomatoes than for mature-green tomatoes (see p. 28 for discussion of these terms), were established. These dual-size restrictions were intended to withhold from the market proportionate amounts of vine-ripe and mature-green tomatoes so as to equalize the impact of the restrictions between the growers of these tomatoes.

Orange marketing orders

There are five marketing orders which cover the marketing of U.S.-grown fresh oranges. We reviewed four of these orders: the Florida citrus order, the Texas orange and grapefruit order, the Arizona-California valencia orange order, and the Arizona-California navel orange order. We did not review the marketing order for interior Florida oranges because shipment regulations were not being issued under this order. The States mentioned in these marketing orders are the main sources of oranges.

Most of the annual orange crop goes for processing; only about 18 percent goes for fresh-market consumption. Of the amount that goes for fresh-market consumption, California supplies about 58 percent; Florida about 29 percent; and Arizona and Texas about 7 percent each. The regulatory provisions of the orange marketing orders are generally as follows.

Florida citrus order--This order covers oranges, grapefruit, tangerines, and tangelos. Since 1939, the order has provided for grade and size restrictions and for using "shipping holidays"--specified periods during the Thanksgiving and Christmas seasons--when all shipments are prohibited. These shipping holidays are intended to avoid an oversupply of Florida citrus fruits during these periods.

Texas orange and grapefruit order--In effect since 1960, this order has provided for grade, size, packaging, and container restrictions. Oranges imported into the United States, mostly from Mexico, must meet the same requirements applicable to Texas orange shipments. Imported grapefruit must meet the same requirements applicable to those shipped under the Florida citrus order.

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Arizona-California valencia orange order--Since 1954, this order has controlled orange supplies by weekly volume (flow to market) restrictions; size restrictions have also been used during some seasons. Before shipments begin each season, the industry administrative committee estimates what portion of the crop should be used in the fresh-fruit market; the processing market; and for other purposes, such as export. The committee then develops a schedule of proposed shipments to fresh-fruit markets for each week of the season.

During the season the committee meets weekly to review current supply-and-demand conditions in relation to the schedule of proposed shipments and recommends such adjustments in volume for the following week as it deems advisable. USDA reviews these recommendations and establishes the weekly volume to be shipped.

Arizona-California navel orange order--The provisions of this order, which became effective in 1953, are essentially the same as those for the valencia orange marketing order. Before separate orders were issued for navel and valencia oranges, both were covered by a single marketing order.

Florida celery marketing order

During the winter season, Florida and California are the two main sources of fresh celery with about 90 to 95 percent of their crops going to the fresh-vegetable market. The California celery industry operates without a marketing order. That portion of the Florida crop used for processing is exempt from the Florida celery marketing order. The marketing order authorizes the use of producer allotments, grade, size, pack and container, and flow-to-market restrictions.

The Secretary issued the Florida celery marketing order in 1965 after the Supreme Court of Florida invalidated the provisions in the State's marketing order which had authorized establishing producer allotments on the basis of historical production. According to the court decision,[1]

[1] Rabin v. Conner, 174 So. 2d 721.

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the practical effect of these allotments was to grant existing producers a virtual monopoly on the production and sale of celery and to deny others the right to freely participate in this enterprise.

The Florida celery marketing order, through an annual allotment program, sets the quantity of fresh celery each grower can market. The marketable quantity is apportioned among growers on the basis of their sales during the representative period, 1959-65.

The marketing order prohibits handlers from purchasing celery which is not grown within an authorized grower's marketable allotment. USDA states that, although the order provides an allotment to each grower, it does not regulate the amount of celery which he may grow but it does regulate the amount that handlers may acquire from him.

In 1973 a Federal appeals court,[1] in upholding a Federal district court ruling, found the celery marketing order "to be a valid exercise of the Secretary's statutory authority." The appeals court said that the one crucial difference between the earlier State order and the Federal order was that the Federal order enabled a new producer to share in any increase in the celery market.

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[1] Chiglades Farm, Ltd. v. Butz, 485 F. 2d 1125 (5th Cir. 1973)

CHAPTER 2

USDA'S CONSIDERATION OF CONSUMERS' INTEREST AND COORDINATION WITH OTHER FEDERAL AGENCIES

The Agricultural Marketing Agreement Act provides tha' the consumers' interest be protected and that the Secretary give notice and provide an opportunity for a hearing on all proposed marketing orders. But neither the act nor USDA's implementing instructions specifically require that consumers participate in any marketing order proceedings. The act's primary purpose is to promote the farmers' interest in maintaining a strong agricultural sector.

According to USDA, it considers the consumers' interest by evaluating each proposed marketing order action's effect on prices, relative to parity; by following established rulemaking procedures in formulating and issuing marketing orders and shipment regulations; and by maintaining an efficient marketing system to help insure a dependable supply of quality products.

The act does not require USDA to coordinate with other Federal agencies in formulating or administering marketing orders and shipment regulations. Other Federal agencies, however, have occasionally communicated with USDA about particular aspects of marketing orders; USDA informs certain agencies about proposed shipment regulations under the Florida tomato marketing order; and, until April 1974, USDA had an agreement with the Cost of Living Council (COLC) under Executive Order No. 11695[1] to obtain COLC's concurrence on all proposed supply restrictions.

CONSIDERATION OF CONSUMERS' INTEREST

The Agricultural Marketing Agreement Act associates the interests of consumers and farmers with the parity concept. The act states that the farmers' interest is to be protected through maintenance of orderly markets that will obtain parity prices for their products. The consumers' interest is to be protected by prohibiting USDA from taking any marketing order actions which would keep prices to farmers

[1]Issued on January 11, 1973, as part of phase III of the Economic Stabilization Program.

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above parity. The interests of both are to be protected by avoiding unreasonable fluctuations in supplies and prices. The act authorizes the Secretary to issue marketing orders when he determines that such orders will achieve these policies.

USDA has interpreted the act as requiring primary consideration of the farmers' interest and views its function under the act as that of protecting farmers' purchasing power and the value of agricultural assets.[1] Accordingly, USDA procedures for formulating marketing orders and shipment regulations do not specifically provide that consumers participate.

According to USDA officials, the consumers' interest is adequately protected by

--USDA's evaluating the effects of proposed shipment regulations on prices, relative to parity, to make sure average seasonal prices will not exceed parity;

--the rulemaking procedures followed in reviewing and approving industry administrative committees' proposals for new marketing orders and the shipment regulations to be issued under marketing orders; and

--the maintenance of an efficient marketing system which gives some assurance of a dependable supply of quality products.

Rulemaking procedures

The Agricultural Marketing Agreement Act (7 U.S.C. 608c(3)) provides that, when the Secretary has reason to

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[1]USDA's position was supported by a recent decision concerning milk marketing orders. In 1972, the U.S. Court of Appeals, Ninth Circuit, noted that the Agricultural Marketing Agreement Act "contains some pious platitudes about the interests of consumers," but that its primary purpose was to protect the purchasing power of farmers. The court could find nowhere in the act an express provision for participation by consumers in any marketing order proceeding. (Rasmussen v. Hardin, 461 F.2d 595, 599 (9th Cir. 1972)).

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believe that a marketing order will help achieve the act's purpose, he is required to give notice of and provide an opportunity for a public hearing on the proposed order. Such a hearing is to determine whether the order is needed by giving interested parties an opportunity to be heard. The Secretary will issue a marketing order if he finds, on the basis of the evidence introduced at public hearings, that such issuance will tend to achieve the act's purpose (7 U.S.C. 608c(4)).

At the beginning of each marketing season, the administrative committee for each marketing order generally proposes initial shipment regulations. The initial regulations are developed in connection with each committee's annual marketing policy. This marketing policy sets the general course of action proposed to be taken within the terms of the marketing order during the coming marketing season and lists generally the types of restrictions which, if considered necessary to maintain orderly marketing conditions, could be used during the season.

The Administrative Procedure Act (5 U.S.C. 553) requires that, before issuing or amending regulations (which include shipment regulations and amendments thereto), a Federal agency publish a general notice of the proposed rulemaking in the Federal Register,[1] unless persons subject thereto are named and either personally served or otherwise have actual notice of the proposed rulemaking.

The act generally provides exemption from notice procedures for situations of emergency and necessity. When using such expedite procedures, the agency must determine that the notice procedure is impracticable, unnecessary, or contrary to public interest.

After notice, the agency is to give interested persons an opportunity to participate in rulemaking by submitting written data, views, or arguments with or without opportunity

[1]The Federal Register, published for each Federal workday, makes available to the public Federal agency regulations, proposed changes to such regulations, and other legal documents of the executive branch.

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for oral presentation. Each proposed change published in the Federal Register carries an invitation for participation through the submission of written data, views, or arguments and sometimes by oral presentations.

After considering the relevant material presented, the agency is to incorporate in the adopted rule a concise general statement of the rule's basis and purpose. The act also requires that the agency give interested persons the right to petition for the issuance, amendment, or repeal of a rule.

Consideration of consumers' interest in formulating shipment regulations

Since 1968, when the Florida tomato marketing order was reactivated, USDA has published rulemaking notices for the initial tomato shipment regulations for all seasons when shipment regulations were put into effect. USDA has also published rulemaking notices each season since 1968 on the initial shipment regulations for the Florida celery marketing order and the Texas orange and grapefruit marketing orders.

For the Florida citrus marketing order, rulemaking notices are not published before the initial shipment regulation is put into effect but, since the 1971-72 season, they have been published early in the marketing season. Under this order, a short-term (15 to 30 days) shipment regulation is adopted without publishing a rulemaking notice under the expedite procedures of the Administrative Procedure Act. A notice is then published on a shipment regulation proposed by the industry committee for the rest of the season.

The rulemaking notices published on the initial shipment regulations under the Florida tomato and celery orders and Texas orange and grapefruit order and on the early-season shipment regulations under the Florida citrus order invited interested parties to submit written data, views, or arguments.

The Arizona-California valencia and navel orange marketing orders do not use initial shipment regulations. Instead, marketing policies containing schedules of estimated weekly shipments for the season are sent to USDA for approval before the start of each marketing season. (Rulemaking is not

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conducted on marketing policies.) Each week during the season, the industry committees submit proposed restrictions which set the quantities of oranges to be marketed. The proposed quantities may vary from those included in the marketing policies because of changes in marketing conditions. USDA considers these weekly quantity restrictions without publishing rulemaking notices under the expedite procedures of the Administrative Procedure Act.

At various times during the marketing season, industry administrative committees propose amendments to initial shipment regulations, to adjust supplies, when they estimate that the supply of a commodity is such that farm prices would be depressed below an acceptable level. As shown below, rulemaking notices were not always published when such amendments to the six marketing orders we reviewed were formulated and issued.

The Florida Tomato Committee proposed dual-size restrictions on five occasions during the 1968-69 and 1969-70 harvest seasons to reduce the supply of tomatoes and to increase farm-level prices. USDA approved the proposed restrictions on four occasions. On the first two occasions, USDA gave its approval without soliciting the views of other interested parties. According to USDA officials, marketing conditions on those occasions made it necessary to implement the proposed restrictions as soon as possible and there was not enough time to solicit the views of interested parties. On the other two occasions, USDA solicited views of interested parties.

The Texas orange and grapefruit marketing order's initial shipment regulations have only been amended twice since 1968--both times during the 1968-69 marketing season. Rulemaking notices were not published on either of these amendments. USDA generally considered the amendments to the Florida citrus marketing order's early-season shipment regulations without publishing rulemaking notices.

As noted previously, USDA approves the weekly quantity restrictions under the Arizona-California valencia and navel orange marketing orders without publishing rulemaking notices. On the Florida celery marketing order, USDA officials told us that, except for 1965, the first year of the celery order

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was in effect, there had been no amendments to the initial shipment regulations.

USDA officials said that it was not practicable to publish a notice of every proposed amendment because some amendments needed to be implemented as soon as possible to adjust for changes in supply or market conditions or to maintain prices for the growers. In other instances restrictions had to be reviewed and changed weekly. The officials said that, in these instances, the exception provision of the Administrative Procedure Act authorized expedite procedures.

Other USDA officials said that the consumers' interest was protected by USDA's evaluating the effect the proposed actions would have on prices, relative to parity. As an example, the officials said that a tomato shipment restriction would not be approved if USDA estimated that such a restriction would raise the average seasonal price of tomatoes above parity.

USDA records showed that, for the 1968-69 through 1972-73 marketing seasons, the range of average seasonal farm prices for the commodities we reviewed were as follows.

	Percent of parity
Florida tomatoes	84 to 99
Florida oranges	41 to 71
Texas oranges	30 to 58
California-Arizona navel oranges	54 to 75
California-Arizona valencia oranges	47 to 72
Florida celery	59 to 111

During the only season--1971-72--when celery prices exceeded parity, no actions were proposed to amend the initial shipment regulation under the celery marketing order, so USDA had no opportunity to evaluate price effects during the season.

USDA's records of material submitted on actions proposed under the four marketing orders for which rulemaking notices were published showed that, since 1968,

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--only 4 of over 100 statements concerning tomato marketing order actions were from consumers or consumer organization representatives and

--no consumers or consumer organization representatives had submitted statements regarding actions under the celery marketing order or the two orange marketing orders.

According to USDA, all material submitted during rulemaking is considered in the decisionmaking process.

COORDINATION WITH OTHER FEDERAL AGENCIES

The Agricultural Marketing Agreement Act does not require USDA to coordinate with other Federal agencies in formulating or administering marketing orders. From April 1973 through April 1974 USDA had an agreement with COLC to obtain its concurrence on proposed supply restrictions. Other agencies, such as the Department of Justice; the Federal Trade Commission (FTC); the Office of Consumer Affairs (OCA), Department of Health, Education, and Welfare; and the Council of Economic Advisers, had occasionally communicated with USDA about particular aspects of marketing orders.

USDA officials told us that there were no continuing arrangements for coordination with these agencies in formulating or administering marketing orders. USDA, however, tells OCA and the State Department of proposed shipment regulations under the Florida tomato marketing order.

COLC

In January 1973, the President's Executive Order No. 11695 established a COLC interagency committee on food to review Government activities which affect food prices. USDA's marketing order programs were identified as significant areas of concern to COLC. At COLC's request, USDA gave COLC pertinent background information on all marketing orders and agreements in effect at the time.

USDA and COLC agreed that USDA, before it took any action under a marketing order, would ask COLC to review each industry administrative committee's marketing plan for

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the season and each proposed change that differed markedly from the plan. USDA also asked for COLC's concurrence on proposed amendments to shipment regulations.

COLC reviewed each proposed amendment and, if it believed the amendment would overly restrict supply, recommended a less restrictive amendment. If USDA and COLC could not agree on a proposed amendment, they referred the matter to the interagency committee on food for resolution. This committee was composed of the Secretaries of the Treasury and Agriculture, the Directors of COLC and the Office of Management and Budget, and a member of the Council of Economic Advisers.

A COLC official told us that, while the arrangement was in effect, COLC had USDA adopt less restrictive shipment regulations for several commodities. For example, on several occasions COLC recommended and obtained larger weekly shipments of California navel oranges than those which the industry administrative committee had proposed and which USDA had approved. According to USDA and COLC officials, they referred only one matter to the interagency committee for resolution.

Coordination of activities between USDA and COLC ended in April 1974 as the Congress did not extend the Economic Stabilization Act of 1970, as amended (12 U.S.C. 1904 note), under which COLC reviewed proposed marketing order supply restrictions.

On August 24, 1974, Public Law 93-387 (88 Stat. 750) created the Council on Wage and Price Stability. Section 3(a)(7) of the law authorizes the Council to review and appraise the various programs, policies, and activities of Federal agencies to determine the extent to which those programs and activities contribute to inflation.

Department of Justice

Although no formal arrangement for coordination of activities exists between the Justice Department and USDA, the Justice Department had questioned possible anticompetitive aspects of marketing orders that could harm the consumers' interest. For example, in May 1972 the Justice Department's

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Antitrust Division requested additional time to file exceptions to USDA's proposed decision to retain authority for dual-size restrictions in the Florida tomato marketing order. USDA denied the request on the grounds that there had already been ample time (over a year) for the Justice Department to enter the proceeding, that the issue had been explored in depth, and that USDA was responsible for administering marketing orders.

An official of the Antitrust Division told us that the Justice Department had not challenged any fruit, vegetable, or nut marketing orders as violating antitrust laws. As previously mentioned, the Supreme Court of the United States has held that marketing orders do not violate antitrust laws, provided that the scope and nature of such order is not inconsistent with the provisions of the Agricultural Marketing Agreement Act. (307 U.S. 533)

FTC

In 1971 FTC wrote to USDA expressing its concern about the possible detrimental effects that the Florida celery marketing order could have on consumers. An FTC inquiry had indicated that the marketing restrictions being imposed under the order appeared to have "serious anticompetitive effects."

In its letter, FTC noted that the Florida celery industry was highly concentrated and that the leading growers had the capability to "virtually control the market" through the administrative committee, by controlling the amount of celery which could be marketed and by indirectly controlling the entry of new growers into the industry. FTC said:

> " * * * the marketing order, as it now operates, seems to benefit principally a group of powerful growers, to prevent new members from entering the industry and small members from enlarging their share of the market according to their needs and abilities to compete."

USDA's response noted that the Secretary issued shipment regulations under the order only after considering other factors, which were not enumerated, in addition to the

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Florida celery committee's recommendations. USDA said also that competition from California celery growers safeguarded against Florida growers' misusing the order and that Florida celery production had exceeded demand each year since inception of the celery marketing order.

As mentioned on page 10, a Federal appeals court in 1973 found the celery marketing order to be a valid exercise of the Secretary's statutory authority.

OCA

OCA had told USDA of various consumer complaints about the Florida tomato marketing order, and USDA had given OCA information about the order and notified OCA about proposed shipment regulations. An OCA spokesman told us that, if OCA believed that some action was needed on the consumer aspects of some marketing orders, it would tell USDA.

Council of Economic Advisers

A Council spokesman told us that the Council generally opposed the marketing order program and that it had asked USDA about the reasoning behind marketing orders and the need for extending these programs to other fresh market commodities for processing. It had also asked USDA to analyze the output and price effects of certain marketing orders.

The spokesman told us that the Council had had little noticeable effect on USDA's marketing order decisions. He said that USDA knew of the Council's general opposition to the program and that this might influence USDA's decisions.

PROPOSED LEGISLATION

The Congress has been increasingly concerned about whether the consumers' interest is adequately protected and represented within the Federal Government. Bills were introduced in the 93d Congress to provide better assurance that such interest is protected.

The proposed legislation, which the 93d Congress considered but did not enact, would have established a consumer

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agency to protect the consumers' interest within the Federal Government. The proposed agency would have had the authority to represent consumers' interest before Federal agencies. The legislation would also have required other Federal agencies to notify the consumer agency of any action being considered which could substantially affect consumers' interest, including the issuance of rules, regulations, or orders.

Advocates of legislation to create a consumer agency have indicated that they will introduce similar legislation in the next Congress.

CONCLUSIONS

USDA published rulemaking notices in the Federal Register--inviting interested persons, including consumers and others, to submit written comments--in formulating and issuing initial or early-season shipment regulations under the four marketing orders which used them and, in a few cases, in amending such regulations. Rulemaking was not required on the seasonal marketing policies proposed under two of the orange marketing orders, and notices were not published on amendments for which USDA considered such publication impracticable.

In those cases where rulemaking notices were published, consumers and consumer organizations that were given an opportunity to submit written comments rarely did so.

According to USDA, it considers the consumers' interest not only by following established rulemaking procedures but also by evaluating the effect that marketing order actions will have on prices, relative to parity, and by maintaining an efficient marketing system which gives some assurance of a dependable supply of quality products.

Although USDA has had some communication with other Federal agencies regarding marketing orders, it is not required to, and generally does not, coordinate with other Federal agencies in formulating and administering marketing orders and shipment regulations.

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Legislation to establish an agency to protect and represent consumer interests within the Federal Government could, if enacted and properly implemented, provide more opportunity for the consumers' interest to be considered in formulating and administering marketing orders and shipment regulations.

AGENCY COMMENTS

USDA, by letter dated September 5, 1974 (see app. IV), told us that our report reasonably portrayed operations under the marketing order program. USDA said that it believed consumers had a significant stake in the maintenance of orderly food marketing, which is the basic goal of the marketing order program.

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CHAPTER 3

RESEARCH ON THE EFFECTS OF MARKETING ORDERS ON RETAIL PRICES

Most USDA research on the price effects of marketing order actions has been directed at their effects on farm-level prices. At least one USDA study[1] has also shown a strong relationship between shipping point and terminal market-level (wholesale) prices.

USDA and other organizations' research on the effect that farm-level price changes have on retail prices has been limited and the results have been inconclusive. In November 1972 USDA told the Subcommittee for Consumers of the Senate Committee on Commerce that "farm and retail prices do not move closely enough together to establish a meaningful relationship between marketing order actions and prices paid by consumers."

RESEARCH BY USDA

USDA has analyzed retail price effects of some shipment regulations at the request of, or as the result of inquiries from, other Federal agencies. For example, in April 1973 the Council of Economic Advisers asked USDA to analyze output and price effect (which includes retail price effect) of shipment regulations for four vegetable marketing orders: celery, onions, potatoes, and tomatoes.

USDA analyzed the quarterly retail tomato price data for 1960 through 1972 published by the Department of Labor's Bureau of Labor Statistics. USDA concluded that it was unclear whether tomato prices had been affected because the relationship between the retail prices of summer tomatoes--when no Florida tomatoes were marketed--and of winter tomatoes--when Florida tomatoes were marketed--remained about the same both before and after the Florida tomato marketing order was reactivated in 1968.

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[1] Pricing Performance in Marketing Fresh Winter Tomatoes, Economic Research Service, Department of Agriculture, November 1972.

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For the other three commodities, USDA analyzed farm-level price data from 1968 through 1972 and concluded that

--for celery, the regulations may have increased farm prices but competition from California had limited the gains obtainable as a result of the regulations;

--for onions, production variabilities had greater influences on farm-level prices than did marketing order regulations, and

--for potatoes, grade and standard restrictions had not enhanced farm-level prices.

In another instance USDA looked into the relationship between the f.o.b.[1] and retail prices of lemons. In the spring of 1973, COLC, as part of its responsibility under the Economic Stabilization Program, determined that the lemon shipment regulation restricted the lemon supply and requested that the shipment regulation be changed to increase the quantity of lemons being marketed to control prices. USDA did not agree with COLC and made an analysis to determine the relationship between the f.o.b. and retail prices of lemons. USDA concluded that retail prices of lemons did not respond to lower level prices.

RESEARCH BY OTHERS

The National Commission on Food Marketing[2] and the President's Regulations and Purchasing Review Board have done some limited research on the retail price effects of marketing orders and shipment regulations.

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[1]The f.o.b. price includes the farm-level price plus packing and selling charges.

[2]Public Law 88-354, July 3, 1964, established the National Commission on Food Marketing to study and appraise changes occurring in the food industry. Its members consisted of five Senators appointed by the President pro tempore of the Senate, five Representatives appointed by the Speaker of the House, and five public members appointed by the President. Public Law 89-20 extended the life of the Commission, originally 1 year, to July 1, 1966.

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As part of a study of organization and competition in the fruit and vegetable industry, the National Commission looked at the economic impact of marketing orders. A June 1966 staff report noted that the potential impact of orders on consumers was difficult to measure precisely but that marketing orders tended to equalize distribution and stabilize prices. According to the staff report, the benefit to consumers from these factors was debatable. The staff report added:

> "It is conceivable that stable prices for an entire season might prevent low income persons from buying the commodity while fluctuating prices, the average of which was the same as the stable price, might enable them to purchase at those times when prices were much below the average.
>
> "On balance, it appears that consumers are adequately protected against excessive exploitation by legal and natural economic constraints of marketing orders. To the extent that they are implemented and conducted in a manner attuned to consumer demands and facilitate more efficient distribution, marketing orders may be of long-run benefit to consumers."

In its June 1966 overall report, "Food from Farmer to Consumer," the National Commission concluded that Federal marketing orders should be authorized for any agricultural commodity produced in a local area or regional subdivision of the United States but that, because marketing orders may outlive their usefulness, the Secretary should periodically review them. The Commission added that it thought that the reviews should be made public.

The President's Regulations and Purchasing Review Board was established in 1970 to determine, among other things, where Federal regulations raise prices. As part of this objective, the Board analyzed the possible inflationary effect of the Florida tomato marketing order. Although a Board official told us that he was unable to locate any records of the Board's analysis, the Board's February 1972 progress report cited the dual-size restriction as an example of a procedure used by Federal agencies to restrict supply and cause higher prices than would otherwise prevail.

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MARKETING ORDERS TO BE REVIEWED AS PART OF THE ANTI-INFLATION PROGRAM

On October 8, 1974, the President announced that, as part of the anti-inflation program, agricultural marketing orders would be reviewed to eliminate or modify those responsible for inflated prices. According to a Department of the Treasury fact sheet on the anti-inflation program, USDA and the Council on Wage and Price Stability will review marketing orders to insure that they do not reduce food supplies.

CONCLUSIONS

USDA generally does not determine the retail price effect of proposed shipment regulations and has done little research to determine the effects of marketing order actions on retail prices. The results of USDA's and other organizations' research have been inconclusive.

The marketing order review to be made as part of the anti-inflation program might provide more definitive information on the effects of marketing order actions on retail prices.

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CHAPTER 4

RESEARCH DONE OR EFFORTS MADE TO FIND ALTERNATIVES TO MARKETING ORDERS

According to USDA officials, USDA had not done any research or studies to determine whether there were alternatives to marketing orders which could be used to accomplish the objectives set forth in the Agricultural Marketing Agreement Act and which would increase benefits to consumers without seriously jeopardizing producers' interests. Also, we found no evidence that other organizations had made such studies.

The act provides for the orderly marketing of agricultural commodities to establish prices to farmers at or near the parity level; to protect the consumers' interest by taking no marketing order actions which have for their purpose the maintenance of prices to farmers above the parity level; and, in the interests of both farmers and consumers, to avoid unreasonable fluctuations in supplies and prices.

A USDA official told us that USDA had made no efforts to find alternatives to marketing orders because it believed that marketing orders were as relevant to the needs of farmers today as they were in 1937 when the enabling legislation was enacted He said that orderly marketing and price stability were desirable goals from the point of view of both the consumer and the farmer and that a stable market was no less relevant in a period of high food prices and better promoted the public interest than did the chaotic effects of a volatile supply-price situation.

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CHAPTER 5

FACTORS AFFECTING TOMATO QUALITY

A tomato generally reaches the fully ripe stage about 7 weeks after it first appears on the plant. During that time the tomato goes through various stages of development as shown below.

Appearance of fruit	Immature stage	Mature-green stage	Vine-ripe stage
	weeks		
0	5	6	7
		Breaker point	Red-ripe

Most tomatoes that are shipped from Florida and Mexico to U.S. fresh-tomato markets during the winter season are picked at the mature-green stage or at the breaker point (the point where the first pink or yellow color occurs) of the vine-ripe stage. At the breaker point, tomatoes can be almost 100-percent green.

During the 1972-73 winter season, about 83 percent of the Florida tomatoes shipped to U.S. markets were picked and shipped as mature-green tomatoes and about 86 percent of the Mexican tomatoes entering the United States were picked and shipped as vine-ripe tomatoes. Green-harvested tomatoes are often treated with ethylene gas--which tomatoes themselves also produce naturally--to hasten ripening.

Concern has been expressed that, because of the Florida tomato marketing order, consumers have been offered green-picked, artificially ripened Florida tomatoes rather than Mexican vine-ripe tomatoes which some consumers consider to be of better quality. Accordingly, the Subcommittee for Consumers asked that we inquire into factors affecting tomato quality. Our review covered four such factors: vitamin content, flavor, effect of ethylene gas, and maturity.

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VITAMIN CONTENT

Tomatoes are a good source of vitamin C, with a medium-size tomato providing approximately 25 milligrams of vitamin C per 100 grams of tomato weight. The recommended daily dietary requirement of vitamin C for an adult is about 45 milligrams. Tomatoes also provide some vitamin A: about 900 international units per 100 grams of tomato weight. The recommended daily dietary requirement of vitamin A for an adult is about 5,000 international units.

Vitamin C

Research on the vitamin C content of tomatoes at different stages of maturity is conflicting. Some researchers have found little or no difference in the vitamin C content of mature-green and vine-ripe tomatoes; others have concluded that vine-ripe tomatoes tend to have more of this nutrient. We noted only two studies which compared the vitamin C content of mature-green and vine-ripe breaker tomatoes. According to these studies, which covered five varieties of tomatoes, the vine-ripe-breaker tomatoes were found to average about 4.5 more milligrams of vitamin C per 100 grams of tomato weight than the mature-green tomatoes.

Several researchers told us that the maximum vitamin C content of tomatoes was reached at or shortly after the breaker point, so that a tomato picked after this point might be expected to have more vitamin C than one picked a little earlier. These researchers, however, could not tell us whether the difference would be significant. Most felt that, after both ripened, a mature-green tomato would have about as much vitamin C as one picked at the breaker point.

The researchers emphasized that exposure to sunlight during development was equally as important to a tomato's vitamin C content whether the tomato is picked mature-green or vine-ripe because vitamin C in tomatoes varies directly with the amount of sunlight received. For example, a vine-ripe-breaker tomato which had been shaded by the plant's leaves would have less vitamin C than a mature-green tomato completely exposed to sunlight. These researchers also told us that they believed that winter tomatoes from either Florida or Mexico would have less vitamin C than summer tomatoes because of the shorter days and less sunlight.

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Vitamin A

Research on the carotene (vitamin A) content of tomatoes was also conflicting.

Most of the research indicated that carotene content increased during ripening; some indicated that tomatoes ripened on the vine had more carotene than tomatoes picked while green and ripened in storage. For example, one study compared the carotene content of tomatoes harvested at five stages of development and obtained the following results.

Stage of development	Micrograms of carotene per gram of weight
Immature green	1.7
Mature green	1.8
Pink	4.0
Red-ripe	4.0
Overripe	3.7

This same study analyzed the carotene content of tomatoes harvested at the mature-green stage and stored at various temperatures until they reached the red-ripe stage. The carotene content for these tomatoes when red-ripe ranged from 1.7 to 2.7 micrograms, a much lower level of carotene than the level of those allowed to ripen on the vine.

Another study, however, found no difference in vitamin A content between vine-ripened tomatoes and storage-ripened tomatoes.

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Most of the research on the vitamin content of tomatoes was done before 1950 and none tested currently grown commercial varieties of tomatoes. Researchers we talked with cautioned against generalizing and applying these results to tomatoes currently being grown. Also they attributed the conflicting research results to differences in the tomato varieties tested, test methodologies used, and environmental conditions.

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USDA's Agricultural Research Service (ARS) officials told us that ARS was doing experiments on different varieties of commercial and homegrown tomatoes to measure vitamin content in tomatoes picked at different stages of maturity. They said that ARS also had research planned during fiscal year 1975 on the vitamin content of Florida and Mexican tomatoes.

FLAVOR

A tomato's distinctive flavor and aroma are determined by a number of volatile compounds. The amount and ratio of sugars and acids in tomatoes are also extremely important to flavor. For example, tomatoes low in sugars and acids have an insipid taste, those high in sugars and low in acids are sweet, and those low in sugars and high in acids are tart. Tomato variety can also account for flavor differences.

It is generally recognized that the best tasting tomatoes are those grown in the summer and allowed to reach or approach the red-ripe stage before being picked. In winter tomatoes are grown far from northern markets and are picked mostly green. Several researchers have stated that winter tomatoes cannot be as tasty as summer tomatoes because shorter winter days provide less sunlight which the plant uses to produce sugars. Also, after being picked, tomatoes begin to use up stored sugars. Therefore winter tomatoes from Florida and Mexico will have less sugars than locally grown summer tomatoes because of the longer time needed to place them in retail outlets.

Chilling injury from extended exposure of less than fully ripe tomatoes to nonfreezing temperatures below 50° F may also cause poorer taste. This type of injury, which generally results in slow ripening, poor color, and poor flavor, can occur in the field, in distribution channels, or even in the home. To help minimize this type of injury, USDA advises consumers not to refrigerate tomatoes until they are fully ripe.

If sweetness is the desired flavor characteristic, vine-ripe-picked tomatoes might be expected to be sweeter than mature-green tomatoes because sugar concentration

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reaches a maximum shortly after the tomato reaches the breaker point. As with vitamin C content, the researchers had no conclusive data to show whether a significant difference in sugar content existed between tomatoes picked at each stage; however, most of them felt that there probably was not much difference in sugar content between the mature-green and vine-ripe-breaker tomatoes.

The researchers stressed the difficulty in establishing generally acceptable tomato taste criteria because flavor is a very subjective area. One person may prefer a sweet tomato; another may prefer a more acidulous, tart one. ARS officials told us that ARS was attempting to establish objective taste criteria that could be used to evaluate tomato flavor at various stages of maturity.

EFFECT OF ETHYLENE GAS

Ethylene gas, a compound which many fruits, including tomatoes, produce naturally, is associated with the ripening process. The gas is also manufactured and has been used commercially for many years to stimulate the ripening of such fruits as tomatoes, bananas, and melons. Proponents of this practice maintain that using this gas reduces cost by saving on handling, storage space, and spoilage. They believe that this benefits consumers through lower prices. Using ethylene gas to ripen tomatoes is prevalent with the Florida industry; its use by some growers in Mexico is increasing.

The Environmental Protection Agency has sanctioned the use of ethylene gas to promote ripening, because it has been used for many years with no apparent adverse effects on health. USDA officials told us that, because of this extended use, USDA was not investigating and did not plan to investigate the possible effect on health of treating tomatoes with ethylene gas.

University of Florida and ARS research studies indicated no significant differences in the vitamin content and flavor components of mature-green tomatoes treated with ethylene gas and those allowed to ripen on their own.

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The results of several research efforts to assess the effectiveness of ethylene gas for ripening green tomatoes have been mixed. Several studies found that ethylene gas treatment accelerated the ripening of green tomatoes. ARS research indicated that the application of ethylene gas to green tomatoes, in an airtight ripening room, might not appreciably hasten the rate of ripening because the amount of ethylene gas produced naturally by the breakers or ripened tomatoes in the room could be sufficient to accelerate ripening of the green tomatoes without additional gas.

Opinions differ about the optimum concentration of ethylene gas needed for tomato ripening. University of Florida and ARS researchers indicated that Florida packinghouse operators might be using more gas than necessary to stimulate ripening.

According to University of Florida researchers, some packinghouse operators are using up to 15,000 parts of ethylene gas per million parts of air, whereas they believe that less than 1,000 parts per million is necessary. AMS research in 1954 showed that higher-than-needed concentrations of ethylene gas added unnecessary cost, might actually retard ripening, and could be dangerous to packinghouse employees because the gas is explosive.

MATURITY

Although a mature-green-picked tomato may have about the same vitamin content and flavor as one picked at the breaker point, a tomato picked too early--in the immature stage--will be deficient in these components and of inferior quality from the consumer's point of view. Once a tomato is picked, its interior development generally stops.

There is no sure way to differentiate between mature-green and immature tomatoes without damaging the tomatoes. Some Florida growers visually inspect the tomato fields and, on the basis of prior experience and knowledge, determine whether the tomatoes are mature enough to be picked. During visual inspections, the growers generally consider such factors as firmness of the tomatoes and number of breakers or riper tomatoes on the vines. Another method, which is frequently used in conjunction with a visual inspection,

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involves cutting samples of tomatoes before harvest to check their interior development.

According to researchers

--tomato size is not always a reliable indicator because immaturity is found in both large and small tomatoes, although it is more likely in the small tomatoes;[1]

--visual inspection may not be reliable because the maturity of tomatoes can vary in the same field, on the same plant, and even in the same fruit cluster; and

--many tomatoes picked in the immature stage eventually turn red either on their own or by exposure to ethylene gas.

ARS officials, industry spokesmen, and researchers generally acknowledged that some immature tomatoes had been harvested and shipped to market but that they did not know if the quantity was large enough to be a significant problem. Because most Florida tomatoes are picked in the mature-green stage and Mexico tomatoes are generally picked at the breaker point, harvesting immature tomatoes is more likely to occur in Florida although it could also occur with green-harvested Mexican tomatoes.

Industry spokesmen said that they did not believe immaturity was a serious problem with Florida green-picked tomatoes and that it was in their interest to prevent immature tomatoes from reaching the consumer and undermining consumer confidence in their product. However, the difficulty of visually distinguishing mature-green from immature tomatoes and the harvesting methods used can result in some immature tomatoes reaching market. Florida's tight labor

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[1] To the extent that small green tomatoes may be immature, the marketing order's minimum-size restriction would tend to further the consumer's interest from the standpoint of quality by keeping the smaller tomatoes out of marketing channels.

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supply requires tomato growers to use piecework labor for harvesting. This practice tends to encourage picking all green tomatoes on a plant, regardless of their maturity. Also it is questionable whether pickers can be expected to differentiate between mature-green and immature tomatoes when research experts find this difficult to do.

Growers told us that every effort was made to cull immature tomatoes in packinghouses and that the Federal-State Inspection Service (FSIS)[1] also checked tomatoes for immaturity. The Florida tomato marketing order requires that tomatoes be inspected before leaving the State. These inspections are generally made at the packinghouses where FSIS inspectors make sample checks using USDA grade standards for fresh tomatoes.

According to the inspection handbook, a minimum of 10 samples of from 33 to 50 tomatoes are examined from each carload, which may be a railroad boxcar or a truck trailer. The inspectors are required to check for size and various quality factors, including cleanliness, shape, smoothness, maturity, ripeness, firmness, presence of decay, and physical defects. An FSIS official told us that inspectors only cut tomatoes to check for immaturity if they suspect, on the basis of their experience, that immaturity may be a problem.

At our request, FSIS examined inspection certificates for two Florida packinghouses for the 1972-73 season and told us that its inspectors had noted no immaturity. In view of the recognized difficulty of determining maturity by visual inspection, these records, in our opinion, may not be sufficient indicators of the maturity of the tomatoes inspected.

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[1]FSIS provides a nationwide, voluntary inspection service for fresh fruits, vegetables, and nuts using USDA, State, or other grade standards. The service is operated by AMS and cooperating State agricultural agencies and is available, for a fee, to growers, shippers, and other levels of the marketing chain.

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Some critics of the Florida tomato industry have widely publicized a University of Florida study on tomato immaturity saying that it showed that 78 and 40 percent of the tomatoes in two shipments of Florida green tomatoes were immature. Because the publicized information indicated a possible significant problem with immature tomatoes, we reviewed the results of the study and discussed them with the individuals who made the study.

The study involved samples of green tomatoes taken from shipments made from January through April 1971. Immaturity was judged on the basis of internal development of the tomato. The study results gave the percentage of immaturity, by size of tomatoes, found in the samples, as shown below.

Date of shipment	Size of tomatoes (note a)	Percent of immature tomatoes found
Jan. 28	Small	46
	Medium	27
	Extra large	6
Feb. 18	Small	42
	Medium	43
Mar. 12	Small	78
	Medium	70
	Large	8
Apr. 29	Small	45
	Medium	19
	Large	9

[a]See page 7 for further information on these tomato sizes.

As shown in the table, higher percentages of immature tomatoes were found for the smaller tomatoes.

ARS also found indications of immaturity in green-picked Florida tomatoes in a 1973 sample. ARS officials, however, declined to give us any documentation of this research because they considered it preliminary and feared that its results might be used out of context. Those

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responsible for both University of Florida and ARS research cautioned that the sample results were valid only for the particular shipments sampled and should not be used to generalize the overall condition of all Florida tomatoes.

ARS officials told us that efforts were underway to develop equipment capable of identifying and segregating immature tomatoes. ARS had developed and was testing a device using light transmittance. ARS officials told us that a private firm was producing such a device. Officials of this firm told us that they believed this device could be used in tomato packinghouses to detect immaturity but it had not as yet been tried.

CONCLUSIONS

Research has not shown conclusively a significant difference in vitamin C content between mature-green and vine-ripe-breaker tomatoes. Some researchers have noted that the maximum vitamin C content of tomatoes is reached at or shortly after the breaker point, but they could not state whether the difference in vitamin C content of tomatoes picked at the breaker point and those picked at the mature-green stage would be significant.

Most research on the carotene (vitamin A) content of tomatoes indicated that the carotene content increased during the ripening process, but the research differs as to whether the carotene content was higher if the tomato is ripened on the vine.

Research underway by ARS, in which vitamin content is being measured at different stages of maturity, could help resolve some of the controversy about the vitamin content of mature-green and breaker tomatoes.

A tomato's distinctive flavor and aroma are determined by a number of volatile compounds as well as by the amount and ratio of sugars and acids. Chilling injury can also affect a tomato's flavor or taste. Judging taste or flavor is subjective; consequently it is very difficult to establish objective taste criteria.

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Ethylene gas has been used commercially for many years to stimulate ripening of various fruits. Its use has been sanctioned by the Environmental Protection Agency because it has been used for many years with no apparent adverse effects on health. Research indicates no significant difference in the vitamin content and flavor of mature-green tomatoes treated with ethylene gas and those allowed to ripen on their own.

It is very difficult to distinguish between an immature tomato and a mature-green tomato from external appearance alone. There is general agreement that an immature tomato will be deficient in both vitamin content and flavor. Some of the controversy relating to the quality of Florida-grown tomatoes has been due to some immature tomatoes' reaching the market. ARS is testing a device which may help in detecting immature tomatoes before they reach the consumer.

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CHAPTER 6

SCOPE OF REVIEW

We made our review primarily at AMS headquarters, Washington, D.C. We reviewed pertinent laws, regulations, policies, procedures, and practices relating to marketing orders. We reviewed the administration of marketing orders for three commodities--celery, tomatoes, and oranges--with particular emphasis on the Florida tomato marketing order. We also discussed with officials of ARS and USDA's Economic Research Service research done on various aspects of marketing orders. We discussed coordination of marketing order programs with officials of the Department of Justice, COLC, OCA, FTC, and the Council of Economic Advisers.

We reviewed available research on the factors affecting tomato quality and discussed these factors with researchers and scientists at the Universities of Florida, Arizona, and California.

Also we obtained views on the regulatory activities carried out under the Florida tomato marketing order from the managers of the Florida Tomato Committee, selected growers and handlers of Florida tomatoes, representatives of importers of Mexican tomatoes, a representative of tomato growers in Mexico, and representatives of selected retail chain stores.

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FREDERICK J. LORDAN, STAFF DIRECTOR
MICHAEL PERTSCHUK, CHIEF COUNSEL

United States Senate

COMMITTEE ON COMMERCE
WASHINGTON, D.C. 20510

MAR 15 1973

Honorable Elmer B. Staats
Comptroller General of the United States
General Accounting Office Building
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Staats:

The purpose of this letter is to confirm the agreement which our respective staffs have reached regarding my request for a GAO review of the administration of marketing orders by the Department of Agriculture, with particular reference to the Florida tomato marketing order.

It was agreed that the review will cover four areas, as follows:

1. Decision-making processes of the Department of Agriculture and coordination with other Federal agencies --

   This phase of the review should examine into the manner in which the Department considers consumer interests in its administration of marketing orders and coordinates its activities in this regard with other responsible Federal agencies.

2. Economic and technical research --

   This phase of the review should examine into significant economic and technical data affecting consumer interests which the Department develops and uses in its decision-making processes involving marketing orders.

3. Tomatoes: factors affecting their wholesomeness and acceptance by consumers --

   This phase of the review should entail inquiry into the maturation process of tomatoes and related factors affecting their wholesomeness and consumer acceptance. The objective of this phase will be to ascertain the extent to which taste, nutritional values, and consumer preference are affected by the maturation process and by artificial ripening. This phase should also involve inquiry into the extent to which immature tomatoes are marketed in the United States.

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4. Alternatives to market orders --

This phase of the review should ascertain whether any research has been done or any efforts made to find alternatives to the present market order system which would increase benefits to consumers without seriously jeopardizing producers' interests.

I shall be looking forward to your report.

Sincerely yours,

Ted Moss

Frank E. Moss, Chairman
Subcommittee for Consumers

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APPENDIX II

REGULATORY PROVISIONS AUTHORIZED BY
USDA FRUIT, VEGETABLE, AND NUT MARKETING ORDERS
AND AGREEMENT IN EFFECT JUNE 30, 1974

Marketing order number	Area and commodity	Type of restriction: Grade	Size	Pack and container	Flow to market	Market allocation	Reserve pool	Producer allotments
905	Fla. citrus	X	X		(a)			
906	Tex. oranges and grapefruit	X	X	X				
907	Calif.-Ariz. navel oranges		X		X			
908	Calif.-Ariz. valencia oranges		X		X			
909	Calif.-Ariz. grapefruit	X	X					
910	Calif.-Ariz. lemons		X		X			
911	Fla. limes	X	X	X	X			
912	Indian River grapefruit				X			
913	Fla. interior grapefruit				X			
914	Fla. interior oranges				X			
915	Fla. avocados	X	X	X				
916	Calif. nectarines	X	X	X				
917	Calif. pears, plums, and peaches	X	X					
918	Ga. peaches	X	X					
919	Colo. peaches	X	X					
921	Wash. peaches	X	X	X				
922	Wash. apricots	X	X	X				
923	Wash. cherries	X	X	X				
924	Wash.-Oreg. fresh prunes	X	X	X				
925	Idaho-Oreg. fresh prunes	X	X	X				
926	Calif. tokay grapes	X	X	X	X			
927	Oreg.-Wash.-Calif. winter pears	X	X					
928	Hawaii papayas	X	X	X				
929	Mass.-R.I.-Conn.-N.J.-Wis.-Mich.-Minn.-Oreg.-Wash.-N.Y. cranberries	X	X				X	X
930	Mich.-N.Y.-Wis.-Pa.-Ohio-Va.-W.Va.-Md. cherries	X	X				X	

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Marketing agreement No.	Area and commodity	Type of restriction: Grade	Size	Pack and container	Flow to market	Market allocation	Reserve pool	Producer allotments
[illegible]	Wash.-Oreg. bartlett pears	X	X	X				
[illegible]	Calif. olives	X	X					
[illegible]	Idaho-E. Oreg. potatoes	X	X	X				
[illegible]	Wash. potatoes	X	X	Pack				
[illegible]	Oreg.-Calif. potatoes	X	X	Pack				
[illegible]	Colo. potatoes	X	X	X				
[illegible]	Maine potatoes	X	X	X				
[illegible]	New England potatoes	X	X					
[illegible]	Va. N.C. potatoes	X	X					
[illegible]	Idaho-Oreg. onions	X	X	X	(a)			
[illegible]	South Tex. onions	X	X	X	(a)			
[illegible]	Tex. Valley tomatoes	X	X	X				
966	Fla. tomatoes	X	X	X				
967	Fla. celery	X	X	X	X			X
971	South Tex. lettuce	X	X	X	X			
981	Calif. almonds					X		
982	Oreg.-Wash. filberts	X	X	Pack		X		
984	Calif.-Oreg.-Wash. walnuts	X	X	Pack		X		
987	Calif. dates	X	X	container		X		
989	Calif. raisins	X	X			X	X	
991	Wash.-Idaho-Oreg.-Calif. hops	X					X	X
993	Calif. prunes	X	X	Pack			X	
Marketing agreement 146	Peanuts (note b) (16 States, Virginia to California)	X	X					

[a] Shipping holiday--a brief period when all shipments are suspended to control supply.

[b] Contains indemnity provisions for aflatoxin-damaged peanuts.

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APPENDIX III

CHRONOLOGY OF FLORIDA TOMATO MARKETING ORDER
SHIPMENT REGULATIONS SINCE 1968

Marketing season	Dates operative	Type of restriction
1968-69	Nov. 15 to Nov. 19	--All tomatoes shipped must be over 2-4/32" (7x7 or larger).
	Nov. 20 to Dec. 30	--All tomatoes shipped must be 1-28/32" (7x8 or larger).
	Dec. 31 to Jan. 7	--All U.S. No. 3 grade tomatoes shipped must be 2-9/32" (6x7 or larger) or all U.S. No. 2 grade, or better, must be 2-4/32" (7x7 or larger).
	Jan. 8 to Apr. 13	--(dual size) All tomatoes shipped must be U.S. No. 3 grade or better; mature greens must be over 2-9/32" (6x7 or larger) and vine-ripes must be over 2-17/32" (6x6 or larger).
	Apr. 14 to Apr. 24	--(dual size) All tomatoes shipped must be U.S. No. 3 grade or better; mature greens must be over 2-11/32" and vine-ripes must be over 2-20/32".
	Apr. 25 to May 25	--Same as Dec. 31 to Jan. 7 restrictions.
	May 26 to June 8 .	--(dual size) Same as Jan. 8 to Apr. 13 restrictions.

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APPENDIX III

Marketing season	Dates operative	Type of restriction
1969-70	Nov. 15 to Apr. 26	--All tomatoes shipped must be over 2-4/32" (7x7 or larger).
	Apr. 27 to June 7	--(dual size) Mature green tomatoes shipped must be over 2-9/32" (6x7 or larger) and vine-ripes must be over 2-17/32" (6x6 or larger).
	June 8 to 20	--Same as Nov. 15 to Apr. 26 restriction.
1970-71	Nov. 1 to Mar. 15	--All tomatoes shipped must be 1-28/32" (7x8 or larger).
	Mar. 16 to May 23	--No minimum-size restrictions in effect.
	May 24 to June 18	--All tomatoes shipped must be over 2-9/32" (6x7 or larger
1971-72	Entire season	--No minimum-size restrictions in effect.
1972-73	Entire season	--All tomatoes shipped must be 1-28/32" (7x8 or larger).
1973-74	Entire season	--Same as 1972-73 season.

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

September 5, 1974

Mr. Henry Eschwege, Director
Resources and Economic Development
Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

Thank you for the opportunity to comment on the draft of your report entitled "Administration of Marketing Orders for Fresh Fruits and Vegetables."

The report contains no recommendations for action by the Secretary of Agriculture. However, it reasonably portrays operations under the marketing order program and contains information which should be of value to the Subcommittee for Consumers, Committee on Commerce, United States Senate.

We appreciate the interest of your agency and the Subcommittee in this program. We believe that consumers have a significant stake in the maintenance of orderly food marketing, which is the basic goal of the marketing order program.

Sincerely,

E. L. Peterson
Administrator

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