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Federal Marketing Orders for Horticultural Crops

Nicholas J. Powers

In this report . . . *This bulletin describes the purpose of Federal marketing orders and their effects on growers, marketers, input suppliers, food processors, and consumers. Many Federal marketing orders have regulations for funding promotion and research and for establishing package, container, grade, and size requirements. These regulations intend to boost sales by increasing buyer awareness of the product, developing more desirable products, and reducing marketing costs. A few marketing orders, with regulations that control the volume of produce entering certain markets, are intended to even out supplies and prices. These regulations can raise farm prices in the regulated market if shipments are restricted. However, production increases resulting from higher prices can subsequently reduce farm prices.*

Federal legislation authorizes marketing orders, which enable an administrative committee consisting of growers, handlers, and sometimes a consumer representative appointed by the Secretary of Agriculture, to regulate certain marketing activities. Marketing orders are composed of many different regulations that authorize funding for commodity promotion and research; establishment of package, grade, and size requirements; and control over the volume of farm produce to certain markets (table 1).

Federal marketing orders were devised to help growers collectively market their commodities. Farm prices were low during the Great Depression, prompting several marketing cooperatives to try to raise farm prices by limiting shipments to some markets during the early 20th century. These marketing cooperatives were unsuccessful because nonparticipating growers, or free riders, would benefit without bearing any of the costs of withholding produce from the market. State marketing orders also failed to boost farm prices because of free riders. Congress responded to growers' requests for a solution to the free-rider problem by passing the Agricultural Marketing Agreement Act of 1937 (AMAA), as amended (*2*).[1] Congress intended to enhance growers' prices and revenues while protecting consumer interests by assuring that the rise in farm prices was neither too fast nor above parity.

The AMAA gave growers market power by authorizing Federal marketing orders and agreements for specific fruit, vegetable, nut, and specialty crops. The legislation enabled growers to use collective action by making marketing order regulations compulsory on all handlers selling produce in a designated area. Marketing orders provide growers greater market power than agreements because the latter apply only to handlers who sign the agreement. Marketing agreements are not discussed in this bulletin because only peanuts have a marketing agreement without a marketing order.

[1] Italicized numbers in parentheses refer to literature cited in the References.

Regulations Under Federal Marketing Orders

- Generic advertising and promotion
- Production, marketing, and product research
- Package and container requirements
- Grade and size requirements
- Shipping holidays
- Prorates
- Market allocation
- Reserve pools
- Marketing allotments

Table 1—Authorized regulations of Federal marketing orders[1]

Produce item	Promotion, research, and package			Grade and size		Volume controls				
	1	2	3	4	5	6	7	8	9	10
					Category					
Citrus fruits:										
California-Arizona navel oranges[2]	x	x			x		x			
California-Arizona Valencia oranges[2]	x	x			x		x			
California-Arizona lemons[2]	x	x			x		x			
Florida citrus[3]			x	x	x	x				
Florida limes	x	x	x	x	x	x	x			
Texas oranges and grapefruit[4]	x	x	x	x	x					
Deciduous fruits:										
California nectarines	x	x	x	x	x					
California pears, plums, peaches	x	x	x	x	x					
California kiwifruit			x	x	x					
California desert grapes	x	x	x	x	x	x				
California Tokay grapes	x	x	x	x	x	x	x			
California olives	x	x		x	x					
Colorado peaches	x	x		x	x					
Florida avocados	x	x	x	x	x	x				
Georgia peaches				x	x					
Hawaii papayas	x	x	x	x	x					
Pacific Coast winter pears	x	x		x	x					
Washington apricots	x	x	x	x	x					
Washington sweet cherries	x	x	x	x	x					
Washington peaches	x	x	x	x	x					
Washington-Oregon Bartlett pears	x	x	x	x	x					
Washington-Oregon fresh prunes	x	x	x	x	x					
Cranberries (10 States)[5]									x	x

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1. Generic advertising and promotion.
2. Production and marketing research.
3. Package and container requirements.
4. Grade requirements.
5. Size requirements.
6. Shipping holidays.
7. Prorates.
8. Market allocation.
9. Reserve pool.
10. Marketing allotment.

Table 1—Authorized regulations of Federal marketing orders–Continued

Produce item	Promotion, research, and package			Grade and size		Volume controls				
	1	2	3	4	5	6	7	8	9	10
	Category									
Dried fruits:										
California dates	x	x	x	x	x			x		
California prunes	x	x	x	x	x				x	
California raisins	x	x		x	x			x	x	
Vegetables:										
Florida celery	x	x	x	x	x	x	x			x
Florida tomatoes	x	x	x	x	x					
Idaho-E. Oregon onions	x	x	x	x	x	x				
Rio Grande Valley (Texas) tomatoes[2]	x	x	x	x	x					
South Texas lettuce	x	x	x	x	x	x	x			
South Texas onions	x	x	x	x	x	x				
Texas melons	x	x	x	x	x					
Vidalia onions	x	x								
Potatoes:										
Colorado	x	x	x	x	x					
Idaho-E. Oregon			x	x	x					
Maine			x	x	x					
S. Oregon-N. California	x	x		x	x					
Texas-New Mexico[2]	x	x	x	x	x					
Virginia-N. Carolina				x	x					
Washington				x	x					
Nuts:										
California almonds	x	x		x				x	x	
California walnuts	x	x		x	x			x	x	
Oregon-Washington hazelnuts				x	x			x		
Peanuts[6,7]				x	x					
Other specialty crops:										
Spearmint oil (six western States)[8]	x	x							x	x

[1]As of September 1, 1989.
[2]Marketing order only; no marketing agreement.
[3]Covers oranges, grapefruit, tangerines, and tangelos entering fresh-use markets. Includes Indian River and Interior grapefruit programs.
[4]Restricting handler deliveries is specifically prohibited.
[5]Grade and size **requirements** apply only to portion of crop placed into the reserve pool.
[6]Marketing agreement only; no marketing order. Covers States of Alabama, Florida, Georgia, Mississippi, South Carolina, Arizona, Arkansas, California, Louisiana, New Mexico, Oklahoma, Texas, Missouri, North Carolina, Tennessee, and Virginia.
[7]Contains a provision authorizing the inspection for aflatoxin damaged peanuts.
[8]Covers States of Washington, Idaho, Montana, Nevada, Utah, Oregon, and California.

Sources: U.S. Dept. Agr., Agr. Mkting. Serv., and (*1*).

Overview of Federal Marketing Orders

Fourteen Federal marketing orders regulated produce with an average annual farm value exceeding $100 million.

The annual farm value of fruit, vegetable, nut, and specialty crops regulated by Federal marketing orders and sold for marketing years 1985/86 to 1987/88 averaged nearly $4.6 billion.[2] Vegetables, including potatoes, had the highest average annual farm value at about $1.6 billion, and that for nuts, dried fruits, and spearmint oil totaled $1.2 billion. Average annual farm value for citrus crops was $933 million, while that for noncitrus crops totaled $781 million.

For marketing years 1985/86 to 1987/88 (table 2):

- Eight marketing orders regulated at least 90 percent of the annual value of domestic and imported almonds, kiwifruit, nectarines, prunes, raisins, walnuts, lemons, and cranberries.
- Six marketing orders regulated 75-90 percent of the annual value of domestic and imported fresh-use oranges during the winter, spring, and summer, dates, limes, papayas, and spearmint oil.
- Thirty-one marketing orders regulated less than 75 percent of the annual farm value of other crops and imports.

[2]The farm value of produce for 2 of the 45 Federal marketing orders in effect on September 1, 1989, are not available for marketing years 1985/86 to 1987/88.

Most geographic regions of the United States grow at least 1 fruit, vegetable, nut, or specialty crop whose marketing is regulated by 1 of the 45 Federal marketing orders in effect on September 1, 1989 (excluding milk). Marketing orders, however, are concentrated in the West and Southeast. Marketing orders regulate 36 crops grown west of the Mississippi River, 8 crops grown east of the Mississippi River and south of Pennsylvania, and 2 crops grown east of the Mississippi River and north of Maryland.[3]

Federal marketing orders are used extensively for fluid milk, but because these orders are administered much differently than those for horticultural crops, they are not examined in this bulletin. State marketing orders typically authorize grade and size regulations and funding for generic advertising and commodity promotion, such as funding of the generic advertisements for California raisins, and thus are also not examined here.

[3]The cranberry marketing order covers production in 10 States from Massachusetts to Washington and, thus, is counted in 2 regions—west of the Mississippi River and east of the Mississippi River and north of Maryland.

Marketing Orders Hold Little Promise for Major Field Crops

Could marketing orders substitute for Federal price and income support programs covering the major field crops? The idea has considerable appeal because marketing orders involve no direct U.S. Treasury outlays. Marketing orders have been called "farm programs you don't see," because other than some administrative expenses, direct outlays do not show up in the Federal budget.

In most cases, it would be difficult to develop marketing orders that most growers would agree to because of the diverse production and marketing conditions for field crops. Most crops covered by a marketing order are grown by a few producers within well defined geographic areas and are sold in a few markets. Field crop production occurs over wide areas of the country and involves many producers marketing crops to many markets.

In addition, growers can boost farm prices by restricting sales of high-quality produce when an industry can isolate its market from other suppliers. It is generally easier to isolate markets for horticultural crops than for the major field crops because of specialized production regions and short marketing seasons for many specialty crops.

Field crop producers in other countries compete directly with U.S. producers through world trade, and any attempt to elevate the U.S. price of field crops would likely cause domestic field crop producers to lose export market shares. If marketing orders enhanced U.S. prices for field crops above the world price, then imports would enter the United States and would decrease domestic prices.

Furthermore, higher farm prices would encourage domestic grain users to circumvent the marketing restrictions by producing their own grain and selling it in a different form. Feedlot operators, for example, could grow their own corn and market it through fed cattle.

Despite their potential benefits for producers, marketing orders for horticultural crops do not appear to offer a workable alternative to current price and income support programs, which can boost farm prices for major field crops.

Table 2—Annual farm value of fruit, vegetable, nut, and specialty crops[1]

Produce item	Marketing order crop	Domestic crop	Imports	Order crop as share of domestic crop and imports
	Million dollars			*Percent*
Citrus fruits:				
Florida citrus	[2]279.5	[3]831.7	[3]5.3	34
California-Arizona lemons	186.4	201.4	[4]3.4	91
Florida limes	21.6	21.6	[4]4.9	82
California-Arizona navel oranges	[5]245.9	[6]298.1	[7]5.0	81
California-Arizona Valencia oranges	179.6	[8]211.6	[7]5.0	83
Texas oranges and grapefruit	20.1	[9]536.3	[3]5.3	4
Deciduous fruits:				
Washington apricots	3.4	31.1	[10]17.5	7
Florida avocados	10.3	172.5	[11]2.3	6
Washington sweet cherries	52.8	139.1	[12,13]6.0	36
Cranberries (10 States)	163.2	163.2	[14]	100
California desert grapes	79.4	[15]360.6	[16]207.2	14
California Tokay grapes	1.5	[15]360.6	[16]207.2	less than 1
California kiwifruit	21.8	21.8	0	100
California nectarines	72.7	72.7	0	100
California olives	52.6	52.6	[10]114.8	31
Hawaii papayas	11.6	11.6	[12]2.6	82
Colorado peaches	3.4	[15]230.5	[10]37.3	1
Georgia peaches	21.4	[15]230.5	[10]37.3	8
Washington peaches	8.6	[15]230.5	[10]37.3	3
California pears, plums, peaches	[17]167.4	[18]454.7	[12,19]75.8	32
Pacific Coast winter pears	86.3	131.7	[10]25.1	55
Washington-Oregon Bartlett pears	19.5	131.7	[10]25.1	12
Washington-Oregon fresh prunes	4.9	[20]6.3	[21]10.1	30

— = Not available.

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[1]Domestic grown fresh vegetables are valued using the f.o.b. shipping point price. Domestic-grown nonvegetable produce is valued using the equivalent incoming packinghouse door price. The value of imports is based on foreign market value and excludes import duties, freight, insurance, or other expenses incurred in transporting the commodity to a U.S. port. The farm values of domestic-grown citrus fruits, vegetables, and potatoes are averages over the marketing seasons from 1985/86 to 1987/88. The farm values of domestic-grown deciduous fruits, dried fruits, nuts, and spearmint oil are averages over the marketing seasons from 1986 to 1988. The values of imports are averages over the fiscal years from 1985/86 to 1987/88.

[2]Includes grapefruit from the Indian River and Interior grapefruit programs, oranges, tangelos, tangerines, and temples entering fresh-use markets.

[3]Includes grapefruit, oranges, tangelos, tangerines, and temples entering fresh-use markets.

[4]From 1 to 15 percent of the value of imports are processed products.

[5]Includes some miscellaneous oranges entering fresh-use markets.

[6]The value of early, midseason, and navel oranges entering fresh-use markets during the winter season. These oranges compete mostly with California-Arizona navels.

[7]Imported fresh oranges, mandarins, tangerines, tangelos, and temples.

[8]All fresh Valencia oranges marketed from spring through the summer. These oranges compete mostly with fresh California-Arizona Valencias.

Table 2—Annual farm value of fruit, vegetable, nut, and specialty crops–Continued

Produce item	Marketing order crop	Domestic crop	Imports	Order crop as share of domestic crop and imports
	Million dollars			*Percent*
Dried fruits:				
California dates	17.1	17.1	[4]4.7	78
California prunes	121.1	121.1	0	100
California raisins	274.3	274.3	[10]4.6	98
Vegetables:				
Florida celery	44.6	213.5	3.0	21
South Texas lettuce	6.3	935.2	[11]6.0	1
Texas melons	58.5	—	[4]70.0	—
Idaho-E. Oregon onions	83.9	455.0	[11]59.8	16
South Texas onions	47.8	455.0	[11]59.8	9
Vidalia onions	—	455.0	[11]59.8	—
Florida tomatoes	502.9	[15]861.9	[22]221.2	46
Rio Grande Valley (Texas) tomatoes	6.4	[15]861.9	[22]221.2	less than 1
Potatoes:				
Colorado	61.7	1,712.9	[23]83.4	3
Idaho-E. Oregon	371.9	1,712.9	[23]83.4	21
Maine	109.0	1,712.9	[23]83.4	6
S. Oregon-N. California	92.3	1,712.9	[23]83.4	5
Texas-New Mexico	—	1,712.9	[23]83.4	—
Virginia-N. Carolina	12.0	1,712.9	[23]83.4	1
Washington	239.0	1,712.9	[23]83.4	13
Nuts:				
California almonds	569.9	569.9	[23]3.7	99
Oregon-Washington hazelnuts	15.3	15.3	[10]7.0	69
California walnuts	209.5	209.5	[10]1.3	99
Other specialty crops:				
Spearmint oil	[24]21.4	25.8	0.6	81

[9]Grapefruits and early, midseason, and navel oranges entering fresh-use markets during the winter season, since they compete mostly with Texas citrus entering fresh-use markets.
[10]From 90 to 100 percent of the value of imports are processed products.
[11]Less than 1 percent of the value of imports are processed products.
[12]From 50 to 90 percent of the value of imports are processed products.
[13]Fresh and processed cherry imports.
[14]Value is less than $0.1 million.
[15]Produce to fresh use.
[16]Imported fresh produce.
[17]Covers the handling of fresh Bartlett pears, all plums, and fresh freestone peaches grown in the State of California.
[18]Fresh pears, all plums grown in the State of California, and fresh peaches.
[19]Includes all imported peaches, pears, and prunes, and fresh plums.
[20]Produce to fresh use. Estimates include small quantities of prunes.
[21]Fresh plums.
[22]Fresh and frozen tomato imports.
[23]From 25 to 50 percent of the value of imports are processed products.
[24]Spearmint oil order covers States of Washington, Idaho, Montana, Nevada, Utah, Oregon, and California, but the reported farm value is for produce grown in Idaho, Oregon, and Washington.

Sources: U.S. Dept. Agr., Nat. Agr. Stat. Serv.; and (*4*).

Promotion, Research, and Package Regulations

The funding for promotion and research and the package requirements are intended to increase sales and grower revenues and to lower retail prices.

The goals of generic advertising and promotion are to raise farmers' revenue by expanding demand. Production, marketing, and product research regulations seek to lower farmers' production and marketing costs, which are partially passed on to the consumer as lower retail prices. Under container and package regulations, reduced marketing costs can raise farm revenues and lower retail prices.

Generic Advertising and Promotion Regulations

Generic advertising and promotion involves growers directing messages to food processors, wholesalers, the food service industry, retailers, and consumers to increase total sales of a commodity. Generic advertising and promotion is most effective when the final product is highly nondifferentiable and is derived from a highly homogenous commodity produced by many growers. Thirty-six of the 45 marketing orders authorized generic advertising and promotion programs as of September 1989.

Marketing order funding of generic advertising and promotion overcomes problems of financing high-cost projects and free riders. Many small handlers cannot by themselves afford an effective areawide generic advertising campaign, nor can they absorb the financial loss if the program is ineffective. Advertising and promotion typically require a large minimum investment to be effective in developing and expanding regional, national, and overseas markets.

In administering advertising and promotion, the marketing order's administrative committee proposes an annual advertising budget and USDA reviews and, subject to any changes, approves or denies the Committee's request. All production sold from the area covered with a marketing order is assessed a proportionate share of the advertising and promotion expenses. The assessment is levied on handlers who deduct all or part of it from growers' net return, or pass all or some of the assessment on to buyers. Thus, each handler's contribution to the cost of the program is in proportion to that handler's benefits. Competing handlers probably pass some of the benefits back to growers as higher farm prices and higher sales.

Buyers benefit from advertising if it broadens product knowledge and reduces the cost of searching for desired products, thus, indirectly increasing buyer satisfaction. Handlers and growers benefit when higher revenues from advertising exceed its costs. The potential effects of advertising probably decline when more products are advertised, since total per capita food consumption is relatively constant. Advertising can still increase demand for the advertised commodity or it can slow or stop a declining trend in demand.

Production, Marketing, and Product Research Regulations

Industry-sponsored research seeks to solve production and marketing problems, such as high rates of produce shrinkage and spoilage. Such problems boost grower costs and can limit sales, which reduce revenues and profits. Thirty-four of the 45 marketing orders authorize production and marketing research.

Marketing order funding of research helps overcome problems of financing high-cost projects and free riders. The outlays required to conduct effective research generally are too large for most individual growers and handlers. Moreover, individual growers and handlers who finance research normally receive only a fraction of the research benefits, which are shared with noncontributing handlers and growers (free riders) who benefit from research when it enters the public domain.[4]

Under marketing orders, research is funded much the same way as generic advertising and promotion, with assessments on handlers based on the quantity of produce shipped. Handlers can either deduct all or part of the assessment from growers' net returns or pass all or some of it on to buyers. Competing handlers would likely pass some of the benefits from

[4]A patent can protect access to basic innovations, such as a new tomato variety. However, most research applies existing methods and technology to solve problems, and access to the results cannot be restricted by a patent. For example, applied innovations are easily transferred and diffused to nonexperimenting farmers who directly observe field experiments.

marketing research back to growers in the form of greater sales and higher farm prices.

Growers become more competitive with domestic and overseas rivals when research lowers their per-unit production cost. Research can increase productivity (or lower cost) by developing new practices and technologies that enable growers to produce either the same output with fewer inputs or more output with the same inputs. Examples of production research include developing more efficient irrigation systems and ways to limit produce damage from natural pests and low and high temperatures. When growers adopt new practices and technologies, the supply curve shifts rightward because per-unit costs of production are lower. Growers can expand production, while consumers can buy more produce at lower prices. Grower revenues probably fall, since the farm price usually falls proportionately more than the shipments increase. Grower profits are higher, however, if production costs are reduced by more than the decline in revenue.

Marketing research can lower marketing costs by developing new packaging and container materials, which reduce bruising and spoilage of produce and improve the quality of produce reaching consumers. Other examples of marketing research include developing new handling processes, packaging materials, and containers that require fewer and/or less costly marketing inputs. Competitive marketers eventually pass the benefits from low-cost marketing practices on to consumers as lower retail prices and to growers as higher farm prices.

Research for developing new varieties with characteristics more desirable by consumers can help handlers and growers expand demand. Consumers consequently benefit from a larger product set. Handlers and growers benefit when higher revenues resulting from the new varieties exceed the research costs.

Container and Package Regulations

These requirements fix the size, capacity, weight, dimensions, or packing of the container(s) that handlers must use in the packaging, sale, shipment, or handling of produce. Twenty-eight marketing orders authorize container and package requirements.

Standardization of containers and packages can lower marketing costs in several ways. The costs of completing business transactions are lower because handlers, wholesalers, and retailers can more effectively negotiate prices and quantities over long distances. Transportation costs are also lower, because haulers can more efficiently load and arrange produce in the cargo hold of trucks and rail cars.

These requirements also regulate the materials used to make containers and packages. Materials must be sturdy enough to help protect the produce from bruising, scarring, and spoiling while it is in transit. Damaged or spoiled produce adds to costs of distribution, since retailers either sell damaged produce at a discount or dispose of it.

The effects of container and package requirements on prices and sales are similar to the effects of marketing research. Cost savings resulting from uniform containers and packages translate into higher farm prices and lower retail prices if marketers are competitive.

Under advertising and promotion and product research regulations. . .

Advertising and new products potentially expand demand

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Prices rise with consumer demand

↓

Farm revenue increases

Under production research regulations. . .

Findings of research reduce production costs

↓

Reduced production costs (short run) increase grower profits

↓

Production rises as costs fall

↓

Increased production (long run) decreases prices

↓

Farmer revenue generally falls

Under marketing research and container and package regulations. . .

Findings of marketing research reduce marketing costs

↓

Competitive marketers pass cost savings to farmers as higher farm prices and to consumers as lower retail prices

Grade and Size Regulations

Grade and size standards and requirements convey information to retailers and consumers about the quality of produce.

Grade standards categorize produce by attributes observable prior to purchase, such as defects in color and shape, and by attributes mostly nonobservable prior to purchase, such as maturity, fermentation, decay, disease, or off flavor. Size standards categorize produce by size. These standards eliminate the need for retail buyers to see the produce prior to purchase, and can lower the costs of completing transactions.

Grade requirements prohibit handlers from shipping substandard quality produce, while size requirements typically prohibit handlers from shipping small produce. Minimum size and grade requirements are enforced by authorizing inspections, which require inspectors to visually observe the external appearances of a representative sample of the produce and to cut open the sample produce and check its internal quality. Size requirements, the most frequently authorized regulation, are authorized in 41 marketing orders. Thirty-nine marketing orders authorize grade requirements, making grade the second most often authorized regulation.

Grade and size requirements covering the external attributes (observable prior to purchase) of produce can help prevent handlers from shipping produce that sells for less than the variable costs of marketing. Some handlers who have imperfect price information sometimes ship such produce. Improving the dissemination of market prices for different grades and sizes of produce to handlers could help eliminate this problem. Misshapen, damaged, or off-color produce is sometimes unprofitable to ship because it may spoil while in transit, shrink excessively, or be unwanted by consumers. Marketing and retailing costs should fall when handlers do not ship such produce.

Grade requirements covering the internal attributes (mostly nonobservable prior to purchase) of produce intend to build and maintain a reputation with consumers for consistently high quality. A few handlers tempted by high prices early in the season sometimes ship outwardly attractive but immature or off-flavor produce. Consumers who cannot observe the internal quality of produce prior to purchase may be disappointed, resulting in lost goodwill and confidence and weakened demand. Retailers usually discount the selling price to compensate consumers for the uneven internal quality of the produce. Retail buyers, who can identify only the shipping area, often become suspicious of all produce from the area and either discount the price they are willing to pay or purchase less produce from the area. Sometimes it is difficult for buyers to identify the handlers commingling produce that has inferior internal quality with high-quality produce, since produce often is not branded. Branding produce is not feasible for small handlers who cannot justify the fixed costs. Growers and handlers who ship high-quality produce suffer the costs of a few handlers and growers who ship inferior quality produce.

Grade and size requirements are controversial because they can restrict sales of fresh-quality produce to the regulated market (usually fresh-use) and divert shipments to nonregulated markets (usually processing). Handlers and growers may impose such requirements because revenues are higher if the regulated market is more price-responsive than the nonregulated markets. Retail prices for produce and consumer expenditures in the regulated market usually are higher than those in the nonregulated market. Restricting sales to the regulated market, however, limits consumer choices. For example, high-quality produce that is misshapen and off color may be the only fresh produce affordable to low-income consumers.

Benefits of grade and size *standards:*

- Conveys information to buyers and sellers, which reduces transaction costs
- Effective price reporting

Benefits of grade and size *requirements:*

- Reduced marketing costs through prohibiting sales of unprofitable produce
- Quality assurances for consumers

The costs of grade and size standards are negligible. However, grade and size requirements can restrict sales of high-quality produce to a market, which can increase consumer prices in that market. This restriction can elevate grower revenues, thus creating additional incentive for growers to use grade and size requirements.

Volume Control Regulations

These regulations control the volume of produce that can enter certain markets during the season or a period within the season.

Shipping holidays, prorates, market allocations, reserve pools, and marketing allotments are the regulations used to try to control the volume of produce under Federal marketing orders.

Shipping Holidays

Shipping holidays prohibit handlers from sending produce to the market for brief periods of time, such as a few days or a week. These holidays intend to prevent sharp declines in farm prices when there is a temporary oversupply. For example, some handlers, who have imperfect information on shortrun price expectations, sometimes ship large volumes of produce and are disappointed by the unexpected low prices. Improving the accuracy and dissemination of information could help handlers boost revenues by better planning of shipping schedules. Shipping holidays prevent this type of problem by allowing time for the market to realign a temporary market supply and demand imbalance. The shipping holiday is the mildest form of volume control.

Shipping holidays are unlikely to greatly affect the season's price and sales to markets because they are used infrequently and are only temporary. Higher farm prices cannot be sustained because the holidays do not restrict sales for a substantial portion of the marketing season.

Four of the nine marketing orders authorizing shipping holidays are for highly perishable crops (California desert grapes and Tokay grapes; Florida celery; and south Texas lettuce), and the remaining five marketing orders are for only slightly less perishable crops (Florida citrus, limes, and avocados; Idaho-eastern Oregon onions; and south Texas onions).

Prorates

Prorates regulate shipments to the markets over longer periods than shipping holidays. Prorates set a limit on weekly shipments to a market(s) that handlers can ship on behalf of the growers. Unlike shipping holidays, prorates seldom prevent handlers from sending produce to a market. Prorates usually regulate weekly shipments to the higher priced fresh-use market. Each handler's share of the industry prorate is proportional to the share of industry production the handler controls. Seven marketing orders authorize prorate regulations (California-Arizona navel oranges, Valencia oranges, and lemons; Florida limes and celery; California Tokay grapes; and south Texas lettuce).

Prorates are intended to provide some of the benefits of unavailable risk-transferring markets by stabilizing intraseasonal prices and shipments. Opportunities for growers to reduce price risks by forward pricing are very limited or are absent for most commodities covered by marketing orders authorizing prorate regulations. Forward pricing involves entering a contract that fixes the price for a product to be delivered in the future. The seller agrees to ship a fixed amount of the product of specified grade and size to the buyer on a set future date at an agreed-upon price. To be most successful, futures trading on organized exchanges must accompany forward pricing, thereby bringing together large numbers of traders and allowing price risks to be shifted to speculators. Fruit and vegetable products generally lack the homogeneity or volume needed to attract the number of speculative traders required for successful futures trading. The ability of prorates to provide greater within-season stability of prices and shipments than the free market, or other market institutions, is debatable.

Leveling within-season shipments can help stabilize within-season prices. Temporarily withholding produce from the market during weeks of abundant supplies and releasing produce during weeks of scarce supplies can level shipments. Prorates can temporarily withhold produce from the regulated market by establishing a small enough prorate quantity.

Stabilizing within-season shipments does not necessarily stabilize prices when demand shifts erratically. Within-season demand shifts can destabilize prices for a given volume of shipments. Seasonal supplies of substitute crops or an external shock to the general economy (economic recession or recovery) can cause seasonal demand shifts. Prorates can do little to stabilize within-season prices if within-season shipments of substitute crops are erratic and if the marketing order covers only a small portion of the crop supply.

Product diversion would likely occur if prorate regulations were used throughout the marketing season and if the quantity prorated was consistently less than the amount handlers would ship otherwise. Product diversion can boost the weighted farm price and grower revenues in the short run if the processing-use market is less price sensitive to higher shipments than the fresh-use market. The consequences of a product diversion carried over extended periods partly depend on the production response. Higher farm prices in the short run stimulate longrun production, which causes prices to fall. The larger the production response, the more likely the longrun price is to return to free-market levels. Production response is larger when inputs, such as water, fertilizer, labor, and arable land suitable for growing the crop, are available. Land generally must come from reduced plantings of competing crops. Land availability can limit production growth for horticultural crops that are restricted to a narrow geographic area with specific climatic and soil conditions.

Product diversion results in smaller supplies and higher prices for consumers of fresh produce. Processed products are more abundant and are priced lower. Some consumers unable to afford fresh produce may purchase processed products. Consumer expenditures for fresh produce and processed products, combined, are higher. Prices also are higher for crops that compete with the diverted crop for land.

Consumers and growers may both benefit from product diversion if it is used only to prevent grower prices and revenues from declining sharply during large crop years. Permitting growers to divert sales of produce only during large crop years would probably boost low farm prices and revenues, reduce downside income risk, and eventually stimulate production.[5] Consequently, supplies would be larger during small crop years than if there were no diversion. Consumers would benefit from more supplies at lower farm prices during small crop years, but they also lose from fewer supplies of fresh produce at higher prices during large crop years. Consumers would benefit from such a program if benefits during small crop years outweighed the cost during large crop years. Growers would benefit from risk reduction.

[5]Grower revenues are typically lower when the crop is larger because the farm price for most crops falls by proportionately more than the increase in sales.

Benefits of Prorates

Prorates may stabilize within-season prices and shipments. Instability of within-season prices and shipments produces the following results:

- Risk-averse growers produce less.
- Risk-averse handlers, processors, and inventory holders handle fewer shipments or take larger markups.
- Retailers experience greater difficulties in planning business operations, such as in-store promotions and labor schedules.
- Food processors incur more one-time labor, maintenance, and administrative costs, because when supplies are erratic, shortrun plant capacity changes more frequently.

Cost savings from stabilizing within-season prices and shipments shrink marketing margins and translate into higher farm prices and lower retail prices if marketers are competitive.

Costs of Prorates

In addition to shifting sales within the season, prorate regulations can:

- Divert sales from the regulated market (usually fresh use) to nonregulated markets (usually processing); and
- Boost grower revenues.

Consumers pay more if prorates are used to divert products. Such product diversion would likely occur if prorate regulations were used throughout the marketing season and if the quantity prorated were consistently less than what handlers would ship otherwise.

Market Allocations

Market allocations place a maximum on the quantity of produce that handlers may ship into regulated markets during a marketing season. While prorates regulate within-season shipments, market allocations regulate total seasonal flows. Six marketing orders for semiperishable crops authorize market allocations (cranberries; California dates, raisins, almonds, and walnuts; and Oregon-Washington hazelnuts).

Market allocations are intended to help stabilize interseasonal prices and shipments and, thus, generate some of the benefits of forward-pricing markets. Forward-pricing markets are absent for many of the crops with marketing orders authorizing market allocations.[6] The ability of market allocations to provide greater interseasonal stability of prices and shipments than the free market, or other market institutions, is debatable.

Many perennial crops display pronounced alternate bearing tendencies. That is, a year with small yields follows a year with large yields. Yield variability is one source of interseasonal price and shipment instability. Market allocations can help stabilize interseasonal prices and shipments in the regulated markets by diverting sales in large crop years from regulated markets to nonregulated markets. Regulated markets usually are the principal users of the commodity and are generally more price responsive than nonregulated markets. Consequently, stabilizing shipments will help even out farm prices more in the regulated market than in the nonregulated markets. The ability of market allocations to stabilize prices in the regulated market is likely reduced when supplies of competing crops are erratic and the marketing order covers only a small part of the crop supply. Benefits of more stable prices and shipments are discussed in the section on prorates.

Market allocations are controversial because they can divert products to nonregulated markets over extended periods. The economic effects of product diversion are described in the section on prorates.

Market allocations also are intended to help an industry develop marketing and product strategies, such as assuring buyers reliable supplies of the produce at stable prices, which can help establish and expand markets for new and existing products. Processors are more willing to invest in the development of new products when the input price and supplies are stable because costs are lower. Retailers seem more willing to stock and promote a processed product reliable in volume from year to year, because consumers may more easily develop loyalty to products regularly available. Many industry experts believe that the marketing order for almonds helped that industry develop new products, such as almond butter and roasted almonds.

Reserve Pools

Reserve pools prohibit handlers from selling a minimum share, or specified proportion, of the current season's production. This share of the harvested crop is placed into storage, or more commonly, the reserve pool, and either shipped into commercial markets when grower prices have strengthened (usually during a short crop year) or diverted to processing when there is a chronic buildup of inventory. Five marketing orders for semiperishable crops authorize reserve pools (California prunes, raisins, almonds, and walnuts; and spearmint oil).

Reserve pools under marketing orders may partly offset a tendency for inventory holders to carry insufficient interyear stocks. Inventory holders have a financial incentive to hold stocks until the next year if the price expected next year exceeds the current year's price plus storage costs in a well-functioning competitive market. However, uncertainty about next year's price may prevent risk-averse inventory holders from forming an accurate expected price and, consequently, carrying sufficient quantities of the commodity. Such difficulties may be more prevalent when the free market generates too little information on current and expected supply and demand.

Reserve pools can help stabilize prices and shipments between seasons by placing supplies during large crop years into storage and selling those supplies in future marketing seasons when supplies are small and prices are higher. Chronic buildup of inventory sometimes occurs, especially when there are several back-to-back large crop years. The inventory is often diverted to nonregulated markets in such cases. The costs of product diversions are discussed in the section on prorates.

Marketing Allotments

Marketing allotments require that handlers market only produce for which the grower possesses a marketing quota. Growers can sell only up to their allotted quotas. Marketing allotments indirectly control the

[6] A few of the crops with marketing orders authorizing market allocations have forward-pricing contracts, but these contracts are only for one or two seasons into the future.

What Do Reserve Pools Mean for the California Raisin Farmer?

To better understand how reserve pools operate, consider the following example:

Farmer Joe Baker grows raisins in California's San Joaquin Valley and delivers his harvested raisins to a packer-handler, Raisins, Inc., to grade, pack, and market the fruit. Raisins, Inc., pays Baker for the free percentage of his raisins and holds the reserve percentage of raisins for the account of the Raisin Administrative Committee (Committee). The free percentage is the proportion of the raisin crop that can be sold in commercial markets. The reserve pool percentage is the proportion of the raisin crop that must be held in storage and not sold until authorized by the Committee.

Baker's farm is in California, and Raisins, Inc., must abide by Federal marketing order regulations for California raisins. Under the marketing order, the Committee, subject to USDA's review and approval, determines the quantity of raisins that cannot be sold in commercial markets (the industry's reserve pool and reserve pool percentage) during the current season. The Committee considers the supply and expected demand for raisins and sets the size of the reserve pool to avoid market gluts and a sharp decline in farm prices. The initial level of the reserve pool is determined near the beginning of the season, but can be adjusted downward as the season progresses. Raisins, Inc., holds the reserve percentage of raisins received from growers for the Committee's account.

Raisins, Inc., can sell the free percentage of the raisins it receives in commercial markets. Raisins, Inc., pays Baker for the free percentage of the raisins he delivers. The raisins in the reserve pool are held in storage until released for sale by the Committee. Baker receives a weighted average of the Committee's returns from sales of reserve raisins.

Experience has demonstrated that a glut of raisins usually depresses the price of raisins by more if sold on commercial markets than if withheld and disposed of in noncommercial markets or carried over and sold during a year with small supplies. Baker's returns rise if the marketing order causes some raisins to be withheld from sale during a large crop year and sold during a small crop year. Withholding raisins from sale results in higher prices to consumers for raisins during large crop years, but lower prices during small crop years, than otherwise would have prevailed.

Reserve pools may also even out annual supplies resulting in smaller year-to-year swings in prices and quantities marketed. Greater stability can aid the industry in developing new markets and maintaining established markets in years with small supplies.

maximum output, since growers without allotments would not produce a commodity that cannot be sold. Marketing order allotments are established by the Committee based on growers' historical sales. Marketing allotments are authorized in three marketing orders (cranberries, Florida celery, and spearmint oil).

Marketing allotments are intended to stabilize year-to-year supplies and prices and to generate some of the benefits of missing risk-transferring markets. A marketing allotment program's ability to stabilize interseasonal supplies and prices more than the free market or other market institution is open to further research.

Marketing allotments can stabilize seasonal prices and sales by preventing growers from overplanting because of imperfect price information. Shortrun effects of overplanting include temporary abandonment of the crop if the price for lower quality produce falls to or below harvesting costs. Mediumrun effects include lower prices and lower land values. The effects of overplanting can linger many years for perennial crops. Once growers have incurred the large sunk cost of developing a viable perennial crop, they are reluctant to uproot highly productive crops unless farm prices fall below variable production costs for extended periods. Disinvesting perennial crops at a faster rate than the depreciation rate is costly for growers.

At a hops hearing on whether to suspend the allotment regulation, some growers felt that the allotment regulation had stabilized prices and production by preventing growers from overplanting. Other growers felt that the allotment regulation had restricted profitable production

expansion. The Secretary of Agriculture terminated the marketing allotment regulation for hops because the regulation did not effectuate the declared policy of the Agricultural Marketing Agreement Act. Growers then voted on whether to continue the marketing order. Subsequently, after a close grower vote outcome in the early 1980's, the Secretary of Agriculture terminated the marketing order for hops.

Marketing allotments are the most controversial of the marketing order regulations because they potentially have the greatest market power. Growers can cooperatively act as a monopoly if the marketing order completely covers production of the crop. A monopoly usually sells less produce at higher prices than do competitive producers. Consumers consequently face higher prices and smaller quantities of the commodity. Growers seldom can act as a monopoly since the marketing orders authorizing allotments usually cover only part of the crop's potential growing area.

The net effect of marketing allotment regulations depends on their use. Preventing overplanting when some growers have overoptimistic price expectations reduces losses from crop abandonment and overinvesting. Allotment regulations used to permanently restrict production, however, would likely benefit growers at consumers' expense.

Allotments in the marketing orders for cranberries have never been used. Although allotments are set for Florida celery and spearmint oil, their effectiveness in raising prices may be limited. Any attempt of Florida celery growers to raise prices by reducing sales would likely be thwarted by increased marketings of California celery. Growth in imports and expanded domestic production in nonmarketing order States would likely counter high spearmint oil prices caused by an allotment restricting spearmint oil production in the marketing order area. All of the marketing orders authorizing marketing allotments (cranberries, Florida celery, and spearmint oil) provide for assigning some allotments to new and existing growers each season, thus limiting the allotment's potential ability to restrict output.

USDA's guidelines also do not encourage growers to use allotments to restrict production below free-market levels (*3*).

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For additional information...
Contact Nicholas J. Powers (202-786-1868), Economic Research Service, U.S. Department of Agriculture, Room 1140, 1301 New York Avenue, NW., Washington, DC 20005-4788.

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