



**U.S. PIRG**  
Education Fund

# Apples to **Twinkies** 2012

Comparing Taxpayer Subsidies for **Fresh Produce** and **Junk Food**





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# Executive Summary

**A**t a time when America is facing an obesity epidemic, crushing debt and a weak economy, billions of taxpayer dollars are subsidizing junk food ingredients.

In this report, we find that in 2011, over \$1.28 billion in taxpayer subsidies went to junk food ingredients, bringing the total to a staggering \$18.2 billion since 1995. To put that figure in perspective, \$18.2 billion is enough to buy 2.9 billion Twinkies every year—21 for every single American taxpayer.

In contrast, only \$637 million has gone to subsidies for apples since 1995. That's enough to buy 77 million apples per year on average—but just half of one apple per taxpayer.

At the same time, childhood obesity rates have tripled over the last three decades, with one in five kids aged 6 to 11 now obese. These increases in obesity rates will translate into kids who are at greater risk for heart disease and diabetes, undermining the health of our country and driving up medical costs by hundreds of billions

of dollars. The rise in obesity has many causes, but one of the most important is the increased prevalence of high-fat, heavily sweetened junk food.

Between 1995 and 2011, American taxpayers spent over \$277 billion in agricultural subsidies. Most subsidies went to the country's largest farming operations, mainly to grow just a few commodity crops, including corn and soybeans.

Most of these commodity crops are not simply eaten as-is. Among other uses, food manufacturers process them into additives like high fructose corn syrup and vegetable oils that provide a cheap dose of sweetness and fat to a wide variety of junk food products. Thus, Americans' tax dollars directly subsidize junk food ingredients

## Key Findings:

- Between 1995 and 2011, \$18.2 billion in tax dollars subsidized four common junk food additives—corn syrup, high fructose corn syrup, corn starch, and soy oils (which are processed further into hydrogenated vegetable oils).

- Healthier agricultural products receive very little in federal subsidies. Since 1995, taxpayers spent only \$637 million subsidizing apples, which is one of the few fresh fruits or vegetables that have a significant federal subsidy.
- If subsidies for junk food ingredients went directly to taxpayers to allow them to purchase food, each of America's 141 million taxpayers would receive \$7.58 to spend on junk food and 27 cents to spend on apples each year—enough to buy 21 Twinkies but just half of one Red Delicious apple.
- The \$18.2 billion in subsidies for junk food ingredients that taxpayers have shelled out since 1995 is enough to buy 49 billion Twinkies. Placed end to end, they would circle the globe 125 times.
- Since 1995, the lion's share of agricultural subsidies has gone to a very small number of large operations—75% of subsidies go to just 3.8% of U.S. farmers.

The fact that so many tax dollars are being wasted on junk food demonstrates the need to reform federal agricultural subsidies and end this wasteful spending.

# Apples to Twinkies: Comparing Federal Subsidies for Fresh Produce and Junk Food

## Introduction

The U.S. is in the middle of a public health crisis. We face a steep rise in obesity across the country, which is having an impact on our health, especially the health of our children.

Childhood obesity rates in the U.S. have more than tripled in the past 30 years.<sup>1</sup> Almost one in five children aged 6 to 11 is now obese. The consequences are significant. Obese children have arteries so thick that they resemble those of 45-year-olds, putting them at greatly increased risk of heart disease.<sup>2</sup> Seventy percent of obese 5- to 17-year-olds show one of the risk factors for heart disease.<sup>3</sup>

Dollars don't fully capture the scale of this crisis, but they can at least suggest its outlines: \$150 billion a year is spent on obesity and its related co-morbidities, a value that has doubled over the last decade.<sup>4</sup> And it's going to get worse; without significant policy changes, projections suggest that by 2030, half of Americans will be obese, and

we will be spending an additional \$66 billion a year in medical costs as a result.<sup>5</sup>

The obesity epidemic has many causes, but one of the simplest is also among the most significant: junk food. There are many reasons behind the increased production and consumption of junk food, some simply due to consumer taste and technological innovation. But our own government policy is also responsible for promoting obesity-fueling empty calories. The fact is that even as nutritionists and researchers tell us to cut down on junk food in order to end the childhood obesity epidemic, federal agricultural policy is busily underwriting the problem.

## Federal Agricultural Policy Has Lost Its Way

When significant federal support for American agriculture began in the 1930s, it was aimed at helping small family farms,

many of which were struggling as the economic catastrophe of the Great Depression and the environmental catastrophe of the Dust Bowl caught American farmers in a perfect storm.

Decades later, these programs have become ensconced as a permanent part of the policy landscape. And while they'd originated as rescue programs to help small, family-owned farmers keep their doors open, they've been reshaped into subsidies that primarily benefit the country's largest farming operations.

Since 1995, taxpayers have spent over \$277 billion on agricultural subsidies. Reflecting the political clout of the biggest producers, the lion's share of agricultural subsidies go to a very small number of large operations—75% of subsidies go to just 3.8% of U.S. farmers.<sup>6</sup> Ironically, the large producers who are the disproportionate recipients of subsidies may then use the dollars they receive from the federal government to buy out the smaller farms around them, meaning that the subsidies can be actively harmful to small family farmers.<sup>7</sup>

There is a dizzying variety of subsidy programs—market loans, crop insurance, counter-cyclical payments. Most taxpayer dollars go to subsidizing a few commodity crops. Of the \$277 billion spent since 1995, a full \$81.7 billion went to subsidize corn; wheat and cotton growers received over \$32 billion apiece; soybeans were subsidized to the tune of \$26.3 billion. Other big-ticket items include rice, sorghum (a type of grass frequently used as livestock fodder), peanuts, barley, tobacco, and livestock and dairy production. Non-crop-specific disaster relief and conservation programs make up most of the remaining spending, with other sectors of the agricultural economy receiving little in subsidies.<sup>8</sup>

Commodity crops are not unhealthy in and of themselves. But most of the corn and soybeans we grow do not go to Americans' plates as-is. For example, only about 1% of U.S.-produced corn is the sweet corn that is usually directly eaten by humans.<sup>9</sup> Instead, most commodity crops are fed to livestock, turned into biofuels, or processed into additives like high fructose corn syrup or hydrogenated vegetable oils.

In contrast, apples are one of the only fresh fruits or vegetables receiving significant federal subsidies. Since 1995 the entire complex of federal agricultural programs has spent only \$637 million on apples<sup>10</sup>, and even this modest support is an overstatement of the subsidies going to *fresh* apples—some of the apple crop is itself processed into forms like apple juice or applesauce which in turn may be sweetened with high fructose corn syrup.

Indeed, federal subsidies create very strong perverse incentives discouraging farmers from growing fresh fruits and vegetables: growers of corn or wheat who also use the land to raise produce can see their subsidies revoked and face further penalties.<sup>11</sup>

## Federal Subsidies for Junk Food Ingredients

Perhaps the greatest example of how U.S. farm policy has lost its way is the fact that many subsidized crops are processed into common junk food ingredients. A substantial portion of the corn grown in the U.S. is turned into high fructose corn syrup (HFCS) and corn starch, carbohydrates with no nutritional value. Soybeans are ground up, with the meal going to feed cows, and the liquid skimmed off

**“The lion’s share of agricultural subsidies go to a very small number of large operations—75% of subsidies go to just 3.8% of U.S. farmers.”**



## Crop Insurance Costs Soar

The federal crop insurance program is one of the largest subsidy programs, and the fastest growing. The program allows farm companies to shift their business risk onto taxpayers. Crop insurance is very different from home or car insurance policies with which consumers are familiar. Instead of individuals or companies covering the full cost of their insurance protection, the crop insurance policies are subsidized by taxpayer dollars.

The program subsidizes 62% of crop insurance premiums, on average, and reimburses insurance companies for their administrative and operating expenses. These premiums are used to guarantee as much as 85% of revenue.<sup>12</sup> Additionally, crop insurance can be used to insure an expected level of revenue, meaning insurance payouts can kick in even after a bountiful harvest.

Costs for crop insurance programs rose to \$5.7 billion in 2009 as higher premiums from rising crop prices drove up premium subsidies to farmers.<sup>13</sup> The costs for crop insurance programs were even higher in 2011 at over \$11 billion.<sup>14</sup>

The reason for this increase is counter-intuitive, and illustrates a key problem with how this program is designed. The program primarily benefits growers of commodity crops such as cotton, corn, wheat, and soybeans and these commodity crop prices have risen to historic levels in recent years. As a result, the cost to insure these crops has grown. As the insurance premiums go up, taxpayer premium subsidies go up.

In other words, when market forces create high crop prices which benefit farm operations, taxpayer subsidies to those operations *increase*. This is why rising subsidies are occurring at the same time that large agribusiness operations are experiencing record profits. Last year the agricultural sector made over \$98 billion in profit.<sup>15</sup>

Unlike other agricultural subsidy programs, the federal crop insurance program is not currently subject to any payment limitations or caps. Earlier this year, the GAO found that just 4% of the most profitable farm operations accounted for nearly 33% of all premium support provided by the federal government.<sup>16</sup>

and turned into fat-based additives like hydrogenated vegetable oil. When taxpayers subsidize these commodity crops, they subsidize junk food ingredients as well.

Take the Twinkie: of its 37 ingredients,

at least 14 of them are made with federal subsidies, including corn syrup, high fructose corn syrup, corn starch, and vegetable shortening.<sup>17</sup> Twinkies are sweet, fatty and calorie-rich, but utterly lacking in nutritional value.

But the Twinkie hardly stands alone: high fructose corn syrup can be found in cookies, candies, cakes, soda, bread, ketchup, yogurt, salad dressing, and sauces.<sup>18</sup> Vegetable oils and shortening derived from soy are also ubiquitous in processed food products.

To estimate how many taxpayer dollars are directly supporting junk food production, this report analyzes tax spending on four “empty calorie” ingredients that are almost pure sugar, fat, or carbohydrate, with very limited nutritional value: corn syrup, high fructose corn syrup, and corn starch, all derived from corn, and soybean oil.<sup>19</sup>

### **Subsidies for Corn Syrup, High Fructose Corn Syrup, and Corn Starch**

High fructose corn syrup is a corn-derived sweetener that is used as a replacement for sugar in many foods, because it is cheaper. Biologically, it is almost indistinguishable from ordinary table sugar, containing roughly equal parts fructose and glucose.<sup>20</sup> Ordinary corn syrup, or dextrose, is a sweetener that is primarily glucose but with a much lower fructose content. Corn starch is, simply enough, made by processing corn to remove everything but the starch. It is a pure carbohydrate, used as a thickening agent in foods.

A substantial portion of the corn produced in the U.S. is processed into these additives. According to USDA, since 1995, the nation grew 192.3 billion bushels of corn. Of those, 13.9 billion bushels were processed into some form of corn sweetener, while a further 4.6 billion bushels were turned into corn starch.<sup>21</sup> Thus, over this time period, approximately 9.64% of all American corn was turned into junk food ingredients.

Subsidy databases show that since 1995, \$81.7 billion in taxpayer dollars have

supported the growing of corn.<sup>22</sup> Therefore, 9.64% of this total, or \$7.9 billion, has gone directly to corn-based sweeteners and corn starch.

### **Subsidies for Soy Oils**

While corn commonly shows up in American supermarkets, in both processed and non-processed forms, soybeans have a much less ubiquitous presence on retail shelves. Yet they are a major recipient of federal agricultural subsidies, to the tune of \$26.4 billion since 1995.<sup>23</sup>

When soybeans are processed, they are crushed, yielding both oils and ground soy meal. The meal is primarily used as animal feed, while the resulting oils are processed and sold directly as vegetable oil and used as additives in other foods. When a nutrition label lists “vegetable oil” or “vegetable shortening” as an ingredient, very often that vegetable is soy. In fact, soybean oil accounts for roughly two thirds of all edible oils eaten in the United States.<sup>24</sup>

Soy oil, as a pure fat, is often added to processed foods to make them better-tasting. Vegetable oils and shortening show up in Twinkies, cakes, cookies, crackers, fish sticks, margarine, breakfast cereals, and many other snack foods.<sup>25</sup>

Determining the percentage of the soybean crop that is processed into junk food ingredients is more complex than it is for corn, because the same soybeans are processed into both meal and oils. However, USDA data breaks down the value of the yearly soybean crop that is attributable just to soy oils, rather than the value of the meal or hulls. Since 1995, 39% of the value of the soybean crop has come from oils.<sup>26</sup>

Taxpayers have spent \$26.4 billion subsidizing the production of soybeans since 1995. Thus, \$10.3 billion in taxpayer

dollars over that time period has gone to soy oils that are turned into hydrogenated vegetable oils and other junk food additives.

Between these four ingredients—corn syrup, high fructose corn syrup, corn starch, and soy oils—taxpayers have paid \$18.2 billion supporting junk food since 1995. To put that figure in perspective, \$18.2 billion is enough to buy 49 billion Twinkies.<sup>27</sup> Placed end to end, 49 billion Twinkies would circle the globe 125 times.<sup>28</sup>

Using the methodology described above, we also determined the junk food subsidies for the last two years. Taxpayer subsidies for junk food ingredients grew from \$853 million in 2010 to \$1.28 billion in 2011.

## Apples to Twinkies

The significant public expenditure on unhealthy additives is a counterproductive use of taxpayer dollars, and reflects our skewed agricultural policy priorities. The perversity of these subsidies can be clearly seen by examining how much federal support goes to what most nutritionists recognize as the healthiest category of foods: fresh fruits and vegetables.

Only one of the top twenty federal subsidy programs directly supports a fresh fruit or vegetable: apples.<sup>29</sup> It comes in at number 19 on the list: since 1995 the entire complex of federal agricultural programs has spent only \$637 million on apples, a fraction of the taxpayer dollars going to junk food.

Twinkies provide a perfect illustration of the junk food heavily subsidized by our food policy; the Red Delicious can serve

as a representative of the other varieties of apple.

In the seventeen years between 1995 and 2011, taxpayers spent \$18.2 billion subsidizing junk food ingredients; they spent \$637 million on subsidies for apples. On average, every year, that's \$1.07 billion for junk food, and \$37.4 million for apples.

These payments went to the farming companies that grew the crops, of course, but it's possible to illustrate our nation's priorities by seeing what our agricultural subsidies would buy.

If these agricultural subsidies went directly to taxpayers to allow them to purchase food, each of America's 141 million taxpayers would be given \$7.58 to spend on junk food and 27 cents to spend on apples each year—enough to buy 21 Twinkies but just over half of one Red Delicious apple.

## Conclusion

Billions of dollars in subsidies have been spent over the past decades to support junk food ingredients. This distressing practice doesn't reflect an overall policy of massive support for the entire agricultural sector; instead, it's the result of a conscious policy that directs subsidies to commodity crops that are more likely to be processed into food additives.

USDA says fruits and vegetables should make up about half of the foods on our plates, yet as this reports documents, this priority is not reflected in the way taxpayer dollars are spent through agricultural subsidies.

This wasteful spending not only squanders taxpayer dollars: by fueling the crisis

of childhood obesity, the subsidies damage our country's health and increase the medical costs that will ultimately need to be paid to treat the effects of the obesity epidemic. Taxpayers are paying for the privilege of making our country sick.

Subsidies to large agribusinesses are egregious enough on their own; the fact that the subsidies go to junk food adds insult to injury.

At a time when government spending is coming under increased scrutiny, policy-makers should take a hard look at what our agricultural policy says about our priorities. This is a golden opportunity to ensure our agricultural policy is aligned with our food policy, and take a stand against subsidies for junk food.

**Table 1: Apples and Twinkies Purchasable with Federal Subsidies, by Major U.S. City**

City	State	Population	Share of Junk Food Subsidies	Number of Twinkies	Share of Apple Subsidies	Number of Apples
Albuquerque	New Mexico	552,804	\$1,899,583	5,140,956	\$66,491	137,024
Arlington	Texas	373,698	\$1,284,127	3,475,309	\$44,948	92,629
Atlanta	Georgia	432,427	\$1,485,935	4,021,476	\$52,012	107,186
Austin	Texas	820,611	\$2,819,840	7,631,502	\$98,703	203,406
Baltimore	Maryland	619,493	\$2,128,745	5,761,149	\$74,512	153,554
Boston	Massachusetts	625,087	\$2,147,967	5,813,172	\$75,185	154,941
Charlotte	North Carolina	751,087	\$2,580,937	6,984,944	\$90,340	186,173
Chicago	Illinois	2,707,120	\$9,302,392	25,175,622	\$325,611	671,017
Cleveland	Ohio	393,806	\$1,353,223	3,662,309	\$47,367	97,613
Colorado Springs	Colorado	426,388	\$1,465,184	3,965,315	\$51,286	105,689
Columbus	Ohio	797,434	\$2,740,198	7,415,961	\$95,915	197,661
Concord	New Hampshire	42,546	\$146,199	395,668	\$5,117	10,546
Dallas	Texas	1,223,229	\$4,203,344	11,375,761	\$147,129	303,203
Denver	Colorado	619,968	\$2,130,377	5,765,566	\$74,569	153,672
Des Moines	Iowa	206,599	\$709,930	1,921,325	\$24,850	51,210
Detroit	Michigan	706,585	\$2,428,016	6,571,085	\$84,988	175,142
El Paso	Texas	665,568	\$2,287,071	6,189,636	\$80,054	164,975
Fort Worth	Texas	758,738	\$2,607,228	7,056,097	\$91,261	188,069
Fresno	California	501,362	\$1,722,815	4,662,557	\$60,304	124,273
Houston	Texas	2,145,146	\$7,371,298	19,949,387	\$258,017	531,720
Indianapolis	Indiana	827,609	\$2,843,887	7,696,582	\$99,544	205,140
Jacksonville	Florida	827,908	\$2,844,915	7,699,363	\$99,580	205,215
Kansas City	Missouri	463,202	\$1,591,687	4,307,677	\$55,714	114,814
Las Vegas	Nevada	589,317	\$2,025,052	5,480,519	\$70,883	146,075
Long Beach	California	465,576	\$1,599,844	4,329,755	\$55,999	115,403
Los Angeles	California	3,819,702	\$13,125,523	35,522,390	\$459,432	946,794
Louisville	Kentucky	602,011	\$2,068,672	5,598,570	\$72,410	149,221
Memphis	Tennessee	652,050	\$2,240,619	6,063,922	\$78,428	161,624
Mesa	Arizona	446,518	\$1,534,356	4,152,519	\$53,707	110,679
Miami	Florida	408,750	\$1,404,575	3,801,285	\$49,164	101,317
Milwaukee	Wisconsin	597,867	\$2,054,432	5,560,032	\$71,911	148,194
Minneapolis	Minnesota	387,753	\$1,332,424	3,606,018	\$46,639	96,113
Nashville	Tennessee	609,664	\$2,094,969	5,669,741	\$73,330	151,118
New York	New York	8,244,910	\$28,331,728	76,675,853	\$991,693	2,043,675
Oakland	California	395,817	\$1,360,134	3,681,011	\$47,609	98,112
Oklahoma City	Oklahoma	591,967	\$2,034,158	5,505,163	\$71,201	146,732
Omaha	Nebraska	415,068	\$1,426,285	3,860,041	\$49,924	102,883
Philadelphia	Pennsylvania	1,536,471	\$5,279,728	14,288,843	\$184,806	380,847
Phoenix	Arizona	1,469,471	\$5,049,497	13,665,758	\$176,747	364,239
Portland	Oregon	593,820	\$2,040,525	5,522,396	\$71,424	147,191
Portland	Maine	66,194	\$227,460	615,590	\$7,962	16,408
Raleigh	North Carolina	416,468	\$1,431,096	3,873,061	\$50,093	103,230
Sacramento	California	472,178	\$1,622,531	4,391,152	\$56,793	117,039
San Antonio	Texas	1,359,758	\$4,672,494	12,645,451	\$163,551	337,045
San Diego	California	1,326,179	\$4,557,108	12,333,174	\$159,512	328,722
San Francisco	California	812,826	\$2,793,089	7,559,103	\$97,766	201,476
San Jose	California	967,487	\$3,324,545	8,997,417	\$116,369	239,812
Santa Barbara	California	86,353	\$296,732	803,064	\$10,386	21,404
Seattle	Washington	620,778	\$2,133,160	5,773,099	\$74,667	153,873
Trenton	New Jersey	83,242	\$286,042	774,132	\$10,012	20,633
Tucson	Arizona	525,796	\$1,806,776	4,889,787	\$63,242	130,330
Tulsa	Oklahoma	396,466	\$1,362,364	3,687,047	\$47,687	98,272
Virginia Beach	Virginia	442,707	\$1,521,260	4,117,078	\$53,249	109,734
Washington	District of Columbia	617,996	\$2,123,600	5,747,227	\$74,332	153,183
Wichita	Kansas	384,445	\$1,321,056	3,575,254	\$46,241	95,293

**Table 2: Apples and Twinkies Purchasable with Federal Subsidies, by State**

State	Population	Share of Junk Food Subsidies	Number of Twinkies	Share of Apple Subsidies	Number of Apples
Alabama	4,802,740	\$16,503,508	44,664,432	\$577,671	1,190,461
Alaska	722,718	\$2,483,454	6,721,119	\$86,928	179,141
Atlanta	6,482,505	\$22,275,632	60,285,879	\$779,712	1,606,82
Arkansas	2,937,979	\$10,095,687	27,322,562	\$353,379	728,240
California	37,691,912	\$129,519,556	350,526,539	\$4,533,564	9,342,738
Colorado	5,116,769	\$17,582,596	47,584,833	\$615,442	1,268,300
Connecticut	3,580,709	\$12,304,280	33,299,811	\$430,686	887,555
Delaware	907,135	\$3,117,160	8,436,157	\$109,110	224,853
Florida	19,057,542	\$65,486,845	177,230,973	\$2,292,231	4,723,815
Georgia	9,815,210	\$33,727,704	91,279,307	\$1,180,568	2,432,908
Hawaii	1,374,810	\$4,724,217	12,785,432	\$165,361	340,776
Idaho	1,584,985	\$5,446,435	14,740,014	\$190,641	392,872
Illinois	12,869,257	\$44,222,231	119,681,276	\$1,547,908	3,189,918
Indiana	6,516,922	\$22,393,898	60,605,949	\$783,852	1,615,357
Iowa	3,062,309	\$10,522,918	28,478,804	\$368,333	759,05
Kansas	2,871,238	\$9,866,347	26,701,886	\$345,351	711,697
Kentucky	4,369,356	\$15,014,283	40,634,055	\$525,544	1,083,037
Louisiana	4,574,836	\$15,720,368	42,544,974	\$550,259	1,133,970
Maine	1,328,188	\$4,564,012	12,351,858	\$159,754	329,220
Maryland	5,828,289	\$20,027,570	54,201,813	\$701,024	1,444,665
Massachusetts	6,587,536	\$22,636,547	61,262,644	\$792,345	1,632,860
Michigan	9,876,187	\$33,937,237	91,846,379	\$1,187,903	2,448,022
Minnesota	5,344,861	\$18,366,381	49,706,038	\$642,877	1,324,837
Mississippi	2,978,512	\$10,234,969	27,699,510	\$358,254	738,287
Missouri	6,010,688	\$20,654,342	55,898,084	\$722,962	1,489,876
Montana	998,199	\$3,430,080	9,283,032	\$120,063	247,425
Nebraska	1,842,641	\$6,331,811	17,136,158	\$221,632	456,738
Nevada	2,723,322	\$9,358,068	25,326,299	\$327,560	675,033
New Hampshire	1,318,194	\$4,529,669	12,258,916	\$158,552	326,742
New Jersey	8,821,155	\$30,311,863	82,034,812	\$1,061,004	2,186,510
New Mexico	2,082,224	\$7,155,082	19,364,228	\$250,449	516,123
New York	19,465,197	\$66,887,657	181,022,075	\$2,341,264	4,824,861
North Carolina	9,656,401	\$33,181,993	89,802,418	\$1,161,467	2,393,543
North Dakota	683,932	\$2,350,174	6,360,418	\$82,263	169,527
Ohio	11,544,951	\$39,671,559	107,365,520	\$1,388,621	2,861,660
Oklahoma	3,791,508	\$13,028,642	35,260,195	\$456,041	939,806
Oregon	3,871,859	\$13,304,750	36,007,442	\$465,705	959,722
Pennsylvania	12,742,886	\$43,787,987	118,506,053	\$1,532,708	3,158,594
Rhode Island	1,051,302	\$3,612,557	9,776,879	\$126,450	260,587
South Carolina	4,679,230	\$16,079,094	43,515,816	\$562,815	1,159,846
South Dakota	824,082	\$2,831,768	7,663,782	\$99,120	204,266
Tennessee	6,403,353	\$22,003,645	59,549,783	\$770,192	1,587,207
Texas	25,674,681	\$88,225,115	238,768,919	\$3,088,137	6,364,013
Utah	2,817,222	\$9,680,733	26,199,549	\$338,854	698,308
Vermont	626,431	\$2,152,586	5,825,671	\$75,347	155,274
Virginia	8,096,604	\$27,822,111	75,296,647	\$973,855	2,006,915
Washington	6,830,038	\$23,469,849	63,517,860	\$821,513	1,692,969
West Virginia	1,855,364	\$6,375,530	17,254,479	\$223,162	459,891
Wisconsin	5,711,767	\$19,627,169	53,118,184	\$687,008	1,415,782
Wyoming	568,158	\$1,952,344	5,283,745	\$68,338	140,830
Washington, DC	617,996	\$2,123,601	5,747,228	\$74,332	153,183
<b>TOTAL</b>	<b>311,591,890</b>	<b>\$1,070,713,613</b>	<b>2,897,736,437</b>	<b>\$37,478,112</b>	<b>77,234,646</b>

# Endnotes

1 Obesity is defined by having a Body Mass Index of over thirty (BMI is calculated by dividing weight, in kilograms, by the square of height, in meters). A male at the average American height of 5'10" is obese if he weighs more than 210 pounds; for a woman at the average American height of 5'4", obesity sets in at weights above 175 pounds. See the World Health Organization, Information Sheet on Obesity and Overweight, at <http://www.who.int/dietphysicalactivity/publications/facts/obesity/en/>; Wikipedia, *Human Height*, at [http://en.wikipedia.org/wiki/Human\\_height#Average\\_height\\_around\\_the\\_world](http://en.wikipedia.org/wiki/Human_height#Average_height_around_the_world).

2 Pam Belluck, *Child Obesity Seen as Warning of Heart Disease*, N.Y. Times, Nov. 11, 2008, at <http://www.nytimes.com/2008/11/12/health/12heart.html>.

3 Centers for Disease Control and Prevention, Health Topics: Childhood Obesity, at <http://www.cdc.gov/healthyyouth/obesity/>.

4 Eric A. Finkelstein, Justin G. Trogdon, Joel W. Cohen, and William Dietz, *Annual Medical Spending Attributable To Obesity: Payer- And Service-Specific Estimates*, Health Affairs, July 27, 2009.

5 Various Contributors, *Series on Obesity*, The Lancet, Aug. 26, 2011, at <http://www.thelancet.com/series/obesity>.

6 Environmental Working Group, 2012 Farm Subsidy Database, at <http://farm.ewg.org>. Ten percent of subsidy recipients collected 75% of the subsidies, but because USDA reports that 62% of American farmers don't pocket a dollar in federal

subsidies, only 3.8% of farmers are being paid three quarters of the total subsidies.

7 Brian Riedl, *How Farm Subsidies Harm Taxpayers, Consumers, and Farmers Too*, Heritage Foundation, June 20, 2007, at <http://www.heritage.org/research/reports/2007/06/how-farm-subsidies-harm-taxpayers-consumers-and-farmers-too>; Gilbert M. Saul, Sarah Cohen, and Dan Morgan, *Federal Subsidies Turn Farms into Big Business*, Washington Post, Dec. 21, 2006, at <http://www.washingtonpost.com/wp-dyn/content/article/2006/12/20/AR2006122001591.html>.

8 2012 Farm Subsidy Database.

9 USDA Economic Research Service, *Corn Prices near Record High, but What About Food Costs?*, Amber Waves, Feb. 2008, at <http://www.ers.usda.gov/AmberWaves/February08/Features/CornPrices.htm>.

10 2012 Farm Subsidy Database. This figure includes subsidies from both the Apple Market Loss Assistance Program as we did in our 2011 report, and also the newly available crop insurance premium subsidies for 1995-2011.

11 Jack Hedin, *My Forbidden Fruits (and Vegetables)*, N.Y. Times, Mar. 1, 2008, at <http://www.nytimes.com/2008/03/01/opinion/01hedin.html>.

12 Dennis A. Shields, *Renegotiation of the Standard Reinsurance Agreement (SRA) for Federal Crop Insurance*, Congressional Research Service, June 10, 2010, at [http://assets.opencrs.com/rpts/R40966\\_20100610.pdf](http://assets.opencrs.com/rpts/R40966_20100610.pdf).

13 USDA Risk Management Agency, Crop year government cost of federal crop insurance, 2002-2011, at <http://www.rma.usda.gov/aboutrma/budget/cycost2002-11.pdf>

14 *Id.*

15 USDA Economic Research Service, 2011 Farm Sector Income Forecast, at <http://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/2011-farm-sector-income-forecast.aspx>

16 2012 Farm Subsidy Database.

17 The full list includes wheat flour, corn syrup, HFCS, vegetable shortening, animal shortening, eggs, dextrose, “modified cornstarch,” corn flour, soy protein isolate, soy flour, corn dextrin, soy lecithin, cornstarch. Laura Coffey, *37 Ingredients Twinkie Eaters Ingest*, MSNBC, at <http://today.msnbc.msn.com/id/38872091/ns/today-food/t/ingredients-twinkie-eaters-ingest/>.

18 See a representative list at e.g. Kate Hopkins, *Foods and Products Containing High Fructose Corn Syrup*, Accidental Hedonist, at [http://www.accidentalthedonist.com/index.php/2005/06/09/foods\\_and\\_products\\_containing\\_high\\_fruct](http://www.accidentalthedonist.com/index.php/2005/06/09/foods_and_products_containing_high_fruct).

19 This conservative definition underestimates federal support for junk food. Wheat flour, which may be processed and “enriched”, is used in a large number of such products. Similarly, dairy subsidies support the production of milk, eggs, and cheese, which may be used as junk food ingredients. Even for the crops we do examine, we do not fully capture how much is going to junk food—corn chips and corn puffs, for example, include more corn-based ingredients than just processed corn starch and sweeteners.

20 Gary Taubes, *Is Sugar Toxic?*, N.Y. Times Magazine, Apr. 17, 2011, at <http://www.nytimes.com/2011/04/17/magazine/mag-17Sugar-t.html?pagewanted=all>. However, some studies have suggested that consuming high fructose corn syrup rather than sugar may lead to increased weight gain. See, e.g., Hilary Parker, *A Sweet Problem: Princeton Researchers Find that High Fructose Corn Syrup Prompts Considerably More Weight Gain*, princeton.edu, Mar. 22, 2010, at <http://www.princeton.edu/main/news/archive/S26/91/22K07/>.

21 USDA Economic Research Service, Sugar and Sweeteners: Recommended Data, Table 27: U.S. Use of Field Corn, by Crop Year. Because this data set is arranged in “crop years” stretching from September of one year through August of the next, we started our count in the 1995/96 crop year. Available at

<http://www.ers.usda.gov/data-products/sugar-and-sweeteners-yearbook-tables.aspx>.

22 2012 Farm Subsidy Database.

23 *Id.*

24 Kayla Hedrick, “Low-Lin” Oil Helps Keep Us Healthier and Profitable, unitedsoybean.org, Jan. 19, 2011, at <http://unitedsoybean.org/topics/consumer/low-lin-soybean-oil-helps-keep-us-healthy-and-farmers-profitable>.

25 Many soy oils undergo a process called hydrogenation before being used in food products. Hydrogenation is a process that can help protect oils from spoilage and improve their taste, as well as making them semisolid. However, partial hydrogenation also increases the concentration of trans fatty acids in the oil, and consumption of trans fats has been shown to increase the risk of heart disease. Due to these health concerns, food processors have been decreasingly relying on partial hydrogenation of soy oils. *Id.*; Wikipedia, *Hydrogenation*, at <http://en.wikipedia.org/wiki/Hydrogenation>.

26 USDA Economic Research Service, Oil Crops Yearbook 2011, Table 9: Soybeans: Monthly Value of Products Per Bushel of Soybeans Processed, and Spot Price Spread, U.S., 1990/91 -2010/11. The average share of the price since 1995 is weighted by the total soybean production in a given year, which may be found in Table 2: Soybeans: Acreage Planted, Harvested, Yield, Production, Value, and Loan Rate, U.S., 1960-2012. Available at [usda.gov/data-products/oil-crops-yearbook.aspx](http://usda.gov/data-products/oil-crops-yearbook.aspx)

27 If bought in larger quantities, the per-unit cost of a Twinkie is roughly \$.37. See, e.g., this Amazon.com product listing: <http://www.amazon.com/Hostess-Twinkies-individually-wrapped-twinkies/dp/B0027AR7RU>.

28 A Twinkie is 4” long. See <http://science.howstuffworks.com/innovation/edible-innovations/twinkie.htm>. Earth’s circumference is 24,901 miles. See <http://en.wikipedia.org/wiki/Earth>.

29 2012 Farm Subsidy Database. Federal farm policy does include disaster relief payments that go to owners of orchards and other fruit-growing trees in the event that a natural disaster damages their crop; due to the non-recurrent, random nature of these payments, we do not include them in our analysis. Number twenty on the list are subsidies for growing sugar beets, a tuber; however, sugar beets are cultivated to be processed into sugar, not to be eaten directly.