

Postharvest Technology and Marketing Economics Research Expenditures for Selected Commodities

This appendix focuses on comparisons of postharvest technology and marketing economics (PHTME) and total research expenditures by the State agricultural experiment stations (SAES) and the U.S. Department of Agriculture (USDA) for selected commodities in order to obtain some insight into the patterns of expenditures on PHTME research for various commodities. The commodities considered were selected on a judgment basis and included selected vegetables, field crops, and livestock.

Potatoes

The current dollar expenditures by SAES and USDA on PHTME and total research on potatoes during the 1966-81 period are presented in figure B-1 and the constant dollar expenditures are presented in figure B-2.* In both SAES and USDA, the current dollar expendi-

tures on total research on potatoes increased during the 1966-81 period, with an overall increase of 267 percent in SAES and 154 percent in USDA. In constant dollars, the increase in SAES was 25 percent, while for USDA the constant dollar expenditures decreased 13 percent over the 16-year period.

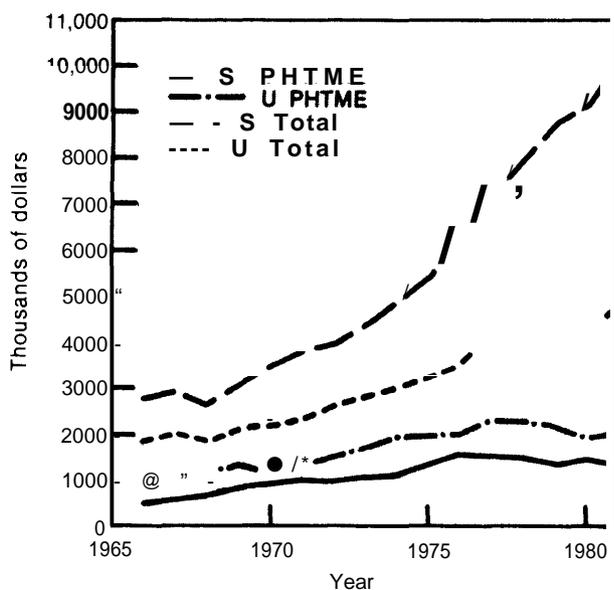
Current dollar expenditures on PHTME research on potatoes varied in both SAES and USDA during the 1966-81 period, and decreased from 1977 to 1980 in both SAES and USDA. In constant dollars, the expenditures from 1966 to 1981 decreased by 5 percent in SAES and decreased by 23 percent in USDA. The percent of total research expenditures for potatoes devoted to PHTME research varied in SAES from about 27 percent in 1969 to 1971 to 14 percent in 1981, and in USDA from about 63 percent in 1969 to 42 percent in 1981.

Other Vegetables

The USDA and SAES current dollar expenditures during the 1966-81 period on PHTME and total re-

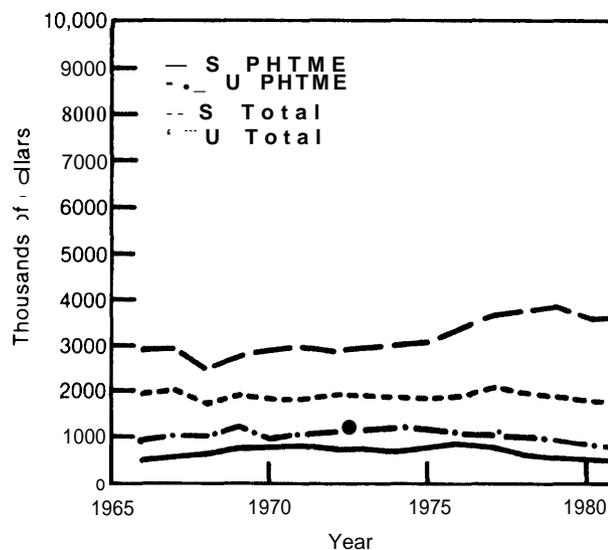
● Data used to construct these and all remaining figures in this appendix can be found in app. C.

Figure B-1.— Potato PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



SOURCE Office of Technology Assessment

Figure B-2.— Potato PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in constant dollars)



SOURCE Office of Technology Assessment

search on vegetables other than potatoes are presented in figure B-3, and the corresponding constant dollar expenditures are shown in figure B-4. The total funds allocated to all other vegetable research were substantially greater in SAES than in USDA and increased at a more rapid rate in the SAES. In current dollar expenditures, the overall increase from 1966 to 1981 was 284 percent in SAES and 202 percent in USDA. The corresponding changes in constant dollar expenditures were a 31-percent increase in SAES and a 3-percent increase in USDA.

In SAES, PHTME research expenditures as a percent of total research expenditures on vegetables other than potatoes reached a peak of 19 percent in 1969 and decreased to about 14 percent in 1981. From 1966 to 1981, the current dollar expenditures on PHTME research on vegetables other than potatoes increased 305 percent, while the increase in constant dollars was only 38 percent.

In USDA, the current dollar expenditures on PHTME research on vegetables other than potatoes increased 167 percent from 1966 to 1981, and the constant dollar expenditures decreased 9 percent. PHTME research expenditures as a percent of total research ex-

penditures on vegetables other than potatoes ranged from a high of 42 percent in 1975 to a low of 29 percent in 1980, and were 30 percent in 1981.

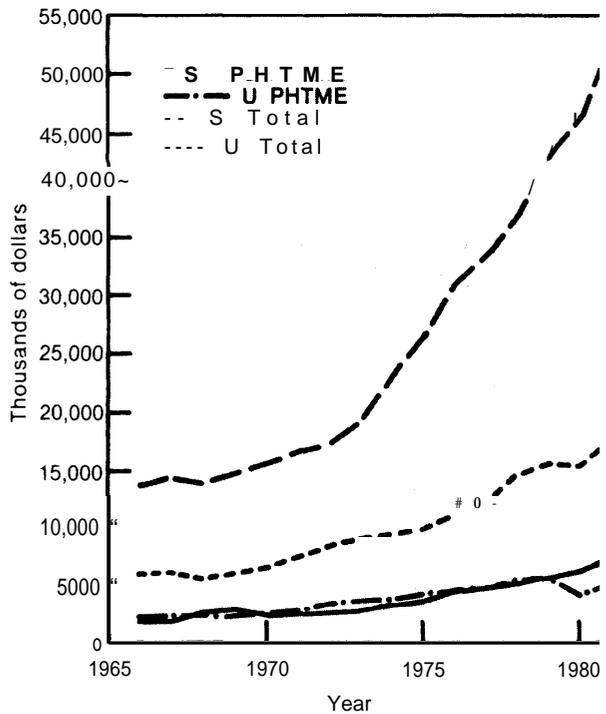
Corn

Current and constant expenditures on PHTME and total research on corn by the SAES and USDA for the 1966-81 period are presented in figures B-5 and B-6, respectively. The current dollar expenditures on total corn research increased 377 percent from 1966 to 1981 in the SAES and 115 percent in USDA. In SAES, constant dollar expenditures increased 58 percent, but in USDA the constant dollar expenditures decreased by 27 percent. Also, the expenditures on total corn research during the 16-year period fluctuated more in USDA than in SAES.

The current dollar expenditures on corn PHTME research from 1966 to 1981 increased 603 percent in SAES, while the constant dollar expenditures increased 140 percent. With some minor fluctuation, the increases were steady throughout the 16-year period. USDA current dollar expenditures on corn PHTME research exhibited a similar pattern, but the overall increase from 1966 to 1981 was 30 percent and constant dollar expenditures declined 56 percent.

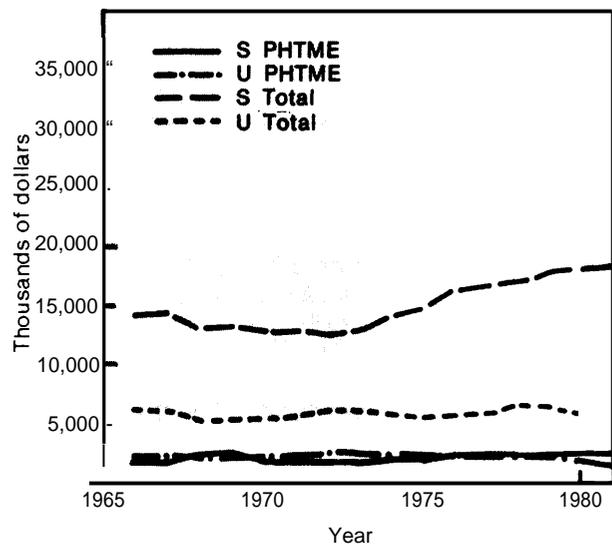
Expenditures in SAES on PHTME research as a percent of expenditures on all corn research ranged from a low of 8 percent in 1970 to a high of 13 percent in

Figure B-3.—Other Vegetables, PHTME AND Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



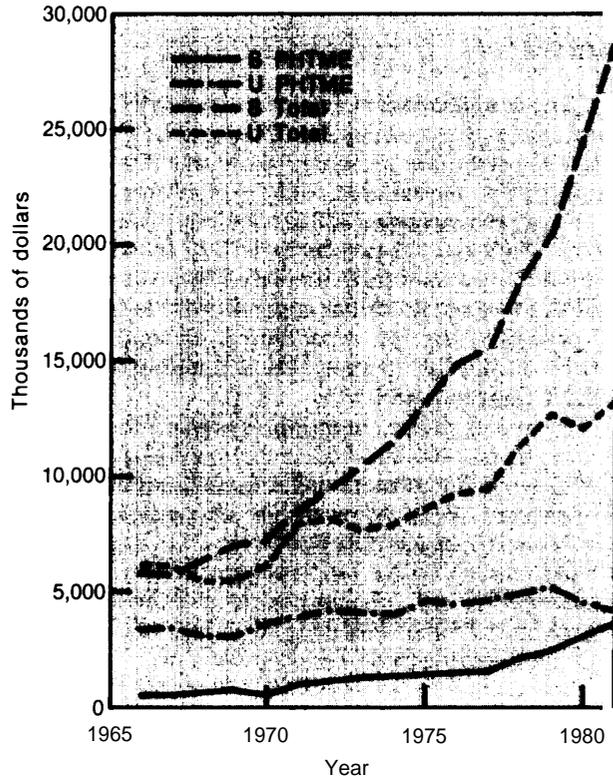
SOURCE Office of Technology Assessment

Figure B-4.—Other Vegetables, PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in constant dollars)



SOURCE Office of Technology Assessment

Figure B-5.—Corn PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



SOURCE: Office of Technology Assessment.

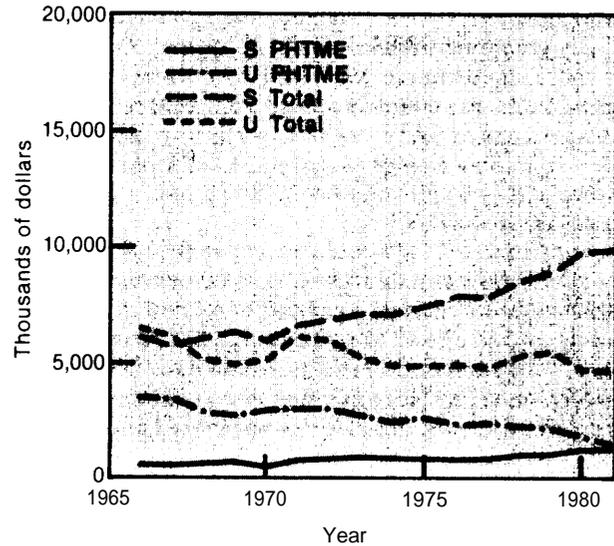
1973 and 1981. The USDA corresponding percentage ranged from a high of 59 percent in 1970 to a low of 32 percent in 1981.

Wheat

Current and constant dollar expenditures on PHTME and total research on wheat by the SAES and USDA for the 1966-81 period are presented in figures B-7 and B-8, respectively. SAES current dollar expenditures on wheat research increased much more rapidly than did total USDA expenditures, and by 1975 exceeded those of USDA. In current dollar expenditures, the overall increase from 1966 to 1981 was 408 percent in SAES and only 83 percent in USDA. In constant dollars, the SAES increase was 74 percent, and the USDA expenditures decreased by 38 percent. In 1981, the SAES expenditure on wheat research was 55 percent greater than that of USDA.

Current dollar expenditures on wheat PHTME research for the 1966-81 period increased 220 percent in the SAES system and 10 percent in USDA. In constant

Figure B-6.—Corn PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in constant dollars)



SOURCE: Office of Technology Assessment.

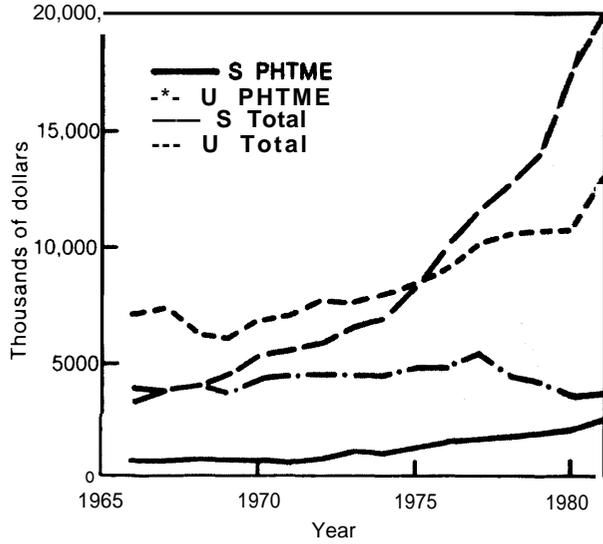
dollars, these increases translate into a 9-percent increase in the SAES and a 62-percent decrease in USDA. As a percent of total expenditures on wheat research, expenditures on wheat PHTME research in the SAES ranged from a high of 22 percent in 1968 to a low of 12 percent in 1981. The USDA low was 28 percent in 1981, and the high was 65 percent in 1970.

Soybeans

Current and constant dollar expenditures on PHTME and total research on soybeans by the SAES and USDA for the 1966-81 period are presented in figures B-9 and B-10, respectively. Current dollar expenditures of the SAES on all soybean research increased by 1,205 percent from 1966 to 1981, and in USDA increased by 454 percent. In constant dollars, the increase in SAES was 346 percent and in USDA, 89 percent.

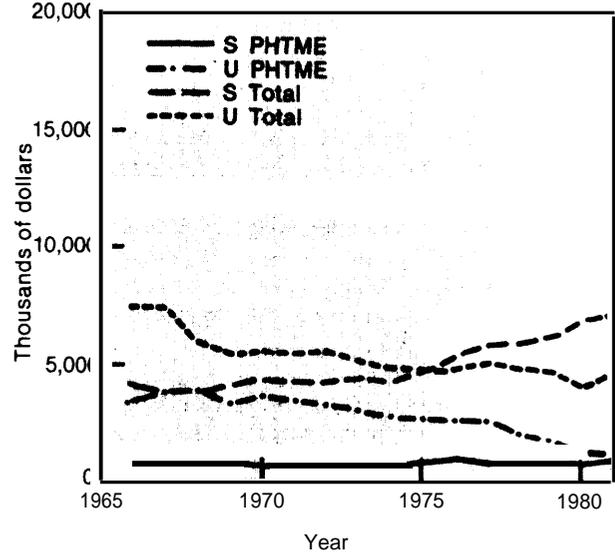
Current dollar expenditures on soybean PHTME research for the 1966-81 period increased over thirteen-fold in SAES, and in constant dollars the increase was 390 percent. In USDA, the increase from 1966 to 1981 in current dollars was 223 percent, but in constant dollars this increase was only 10 percent. USDA expenditures on soybean PHTME research steadily decreased in constant dollars from 1978 to 1981. In SAES, expenditures on soybean PHTME research as a percent of total expenditures on all soybean research ranged from a high of 10 percent in 1968 to a low of 7 per-

Figure B-7.—Wheat PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



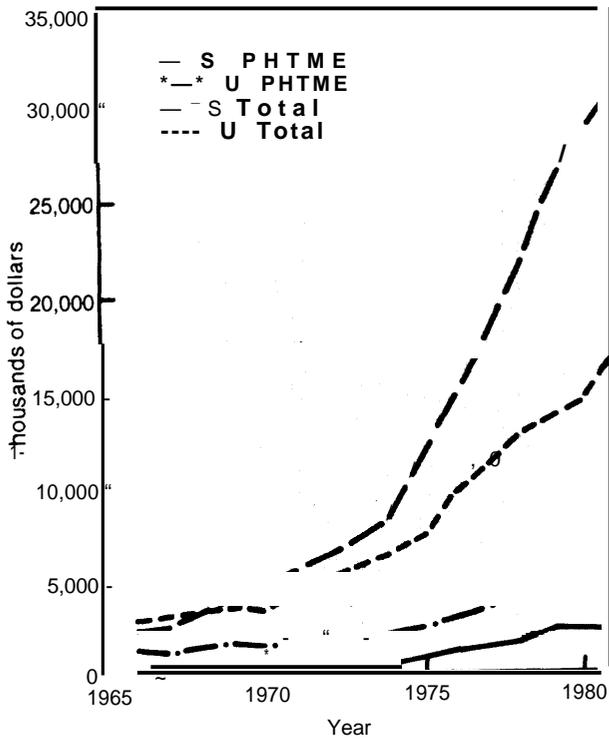
SOURCE Office of Technology Assessment

Figure B-8.—Wheat PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in constant dollars)



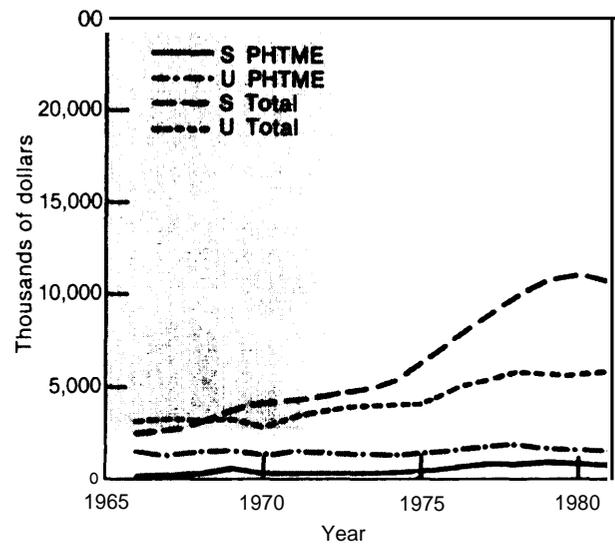
SOURCE: Office of Technology Assessment.

Figure B-9.—Soybean PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



SOURCE Office of Technology Assessment

Figure B-10.—Soybean PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in constant dollars)



SOURCE Office of Technology Assessment

cent in 1981. In USDA, expenditures on soybean PHTME as a percent of total expenditures on all soybean research ranged from a high of 46 percent in 1969 to a low of 26 percent in 1981.

Rice

Current and constant dollar expenditures on PHTME and on total research on rice by the SAES and USDA for the 1966-81 period are presented in figures B-II and B-12, respectively. Current dollar expenditures in the SAES on all rice research increased by 667 percent and in USDA by 185 percent. In constant dollars, the overall increase for the 16-year period was 162 percent in the SAES, while the constant dollar expenditures in USDA decreased 2 percent. From 1977 to 1981, both current and constant dollar expenditures on total rice research increased in the SAES.

Current dollar expenditures on rice PHTME research for the 1966-81 period increased about 463 percent in the SAES, while constant dollar expenditures increased 94 percent. In USDA, the increase from 1966 to 1981 was 185 percent in current dollar expenditures and a decrease of 3 percent in constant dollar expenditures. The decrease in USDA expenditures occurred during the last 4 years of the 16-year period. In the SAES,

expenditures on rice PHTME research as a percent of total expenditures on all rice research ranged from a high of 13 percent in 1966 to a low of 7 percent in 1970, and the proportion for 1981 was 10 percent. In USDA, expenditures on rice PHTME research as a proportion of total expenditures on all rice research ranged from a high of 67 percent in 1977 to a low of 51 percent in 1966 and 1981.

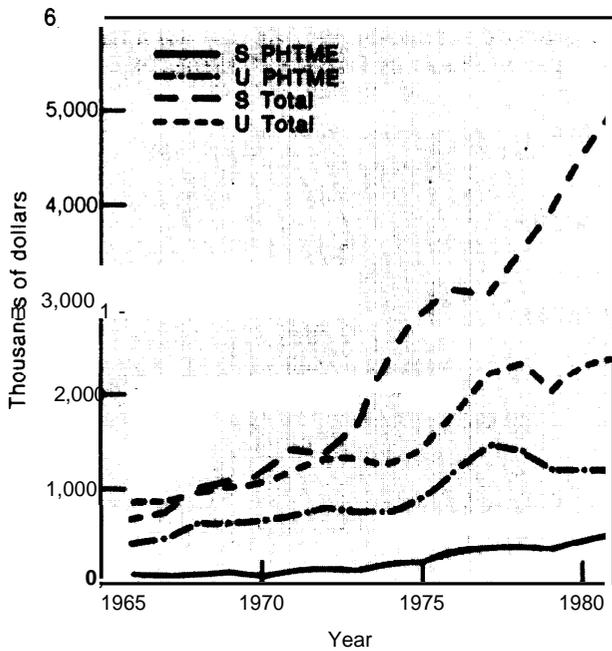
Cotton

The SAES and USDA PHTME and total research expenditures on cotton for the 1966-81 period in current and constant dollars are presented in figures B-13 and B-14, respectively. For all commodities discussed thus far, the total SAES expenditure in current dollars exceeded that of USDA. However, this is not true for cotton. The total USDA expenditures on cotton research were approximately 65 percent greater than those of the SAES.

The expenditures by USDA on cotton research increased 131 percent in current dollars from 1966 to 1981, but the constant dollar expenditures decreased by 21 percent. In the SAES, the current dollar expenditures increased by 148 percent from 1966 to 1981, while the constant dollar expenditures decreased by 15 percent.

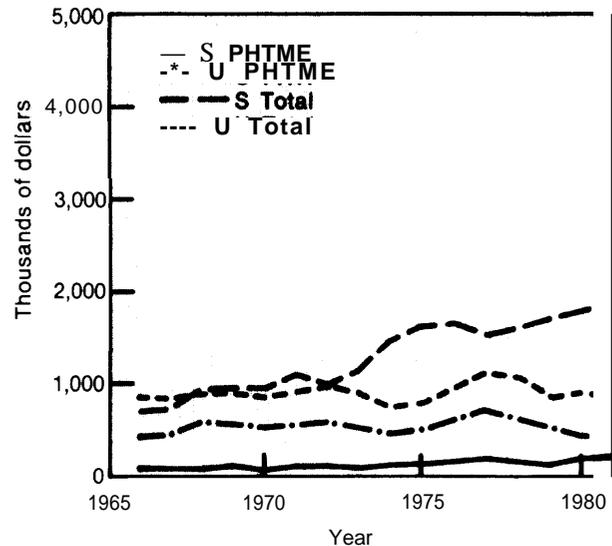
USDA current dollar expenditures on cotton PHTME research varied considerably over the 1966-81 period, and increased only 2 percent. The corresponding con-

Figure B-11.—Rice PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



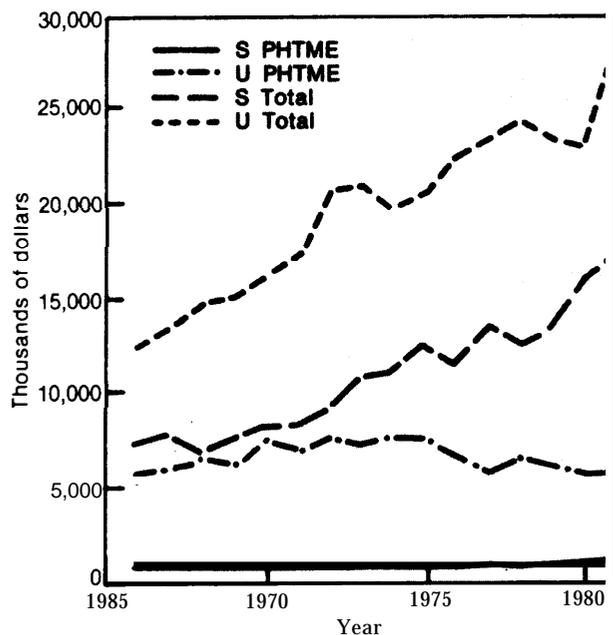
SOURCE: Office of Technology Assessment.

Figure B-12.—Rice PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in constant dollars)



SOURCE: Office of Technology Assessment.

Figure B-13.—Cotton PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



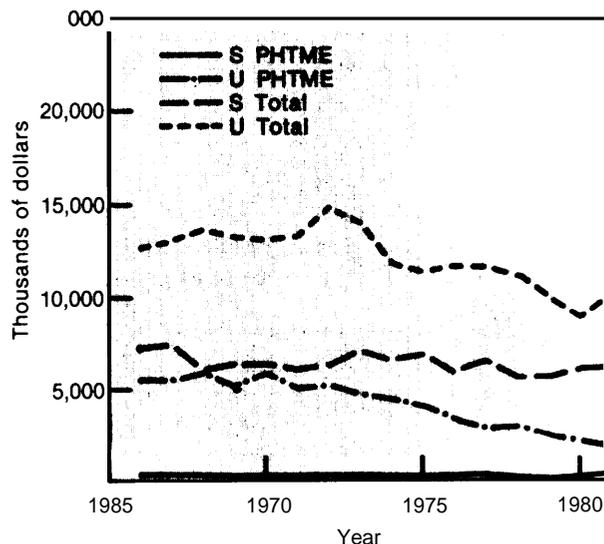
SOURCE: Office of Technology Assessment.

stant dollar expenditure declined by 65 percent. In the SAES, the increase in current dollars on cotton PHTME research for the same period was 150 percent, while the corresponding constant dollar expenditure declined 14 percent, USDA expenditures on cotton PHTME research relative to total expenditures on cotton research ranged from a high of 44 percent in 1970 to a low of 19 percent in 1981. In the SAES, the corresponding proportions ranged from a high of 5 percent in 1968 and 1981 to a low of 3 percent in 1979.

Dairy

Current and constant dollar expenditures by the SAES and USDA on PHTME and all dairy research for the 1966-81 period are presented in figures B-15 and B-16, respectively. Current dollar expenditures on all dairy research in the SAES increased 193 percent from 1966 to 1981, while the constant dollar expenditures remained level. The current dollar expenditures in USDA increased by 116 percent, but the constant dollar expenditures for the same 16-year period declined 26 percent. The total expenditures in the SAES on all dairy research during the 1966-81 period were from 74 percent to approximately 165 percent greater than the expenditures in USDA.

Figure B-14.—Cotton PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (In constant dollars)



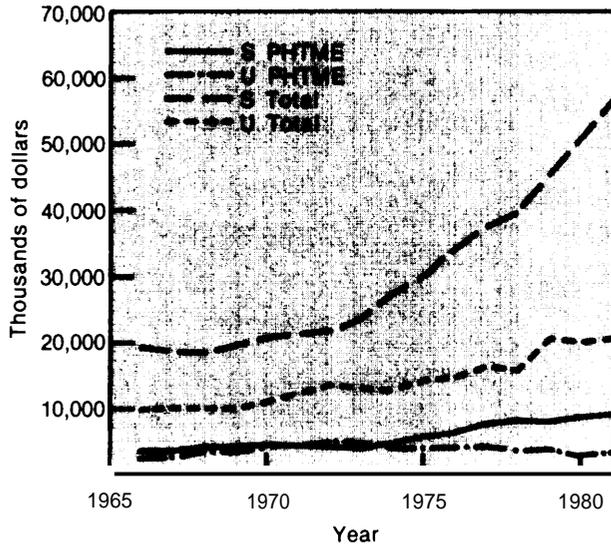
SOURCE: Office of Technology Assessment.

Current dollar expenditures in the SAES on dairy PHTME research, which includes marketing research, increased 170 percent from 1966 to 1981, but corresponding constant dollar expenditures declined 8 percent. For the same period, the current dollar expenditures on dairy PHTME research in USDA increased 21 percent, while constant dollar expenditures declined 59 percent. In the SAES, expenditures on dairy PHTME research as a percent of expenditures on all dairy research ranged from a high of 22 percent in 1970 to a low of 17 percent in 1973 and 1981. In USDA, the comparable percentages for the 16-year period ranged from a high of 37 percent in 1972 to a low of 13 percent in 1981.

Beef

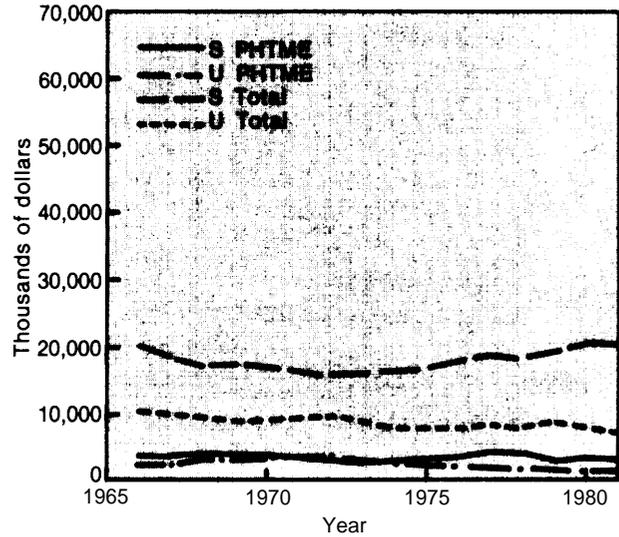
Current and constant dollar expenditures by the SAES and USDA on PHTME and all beef research for the 1966-81 period are presented in figures B-17 and B-18, respectively. Current dollar expenditures for all beef research in the SAES increased 333 percent from 1966 to 1981, and constant dollar expenditures increased 48 percent. The current dollar expenditures in USDA increased 213 percent, but the constant dollar expenditures increased only 7 percent. In a pattern similar to that of dairy research, total expenditures in the SAES on all beef research during the 1966-81 period were from 63 percent to 145 percent greater than the expenditures in USDA.

Figure B-15.—Dairy PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



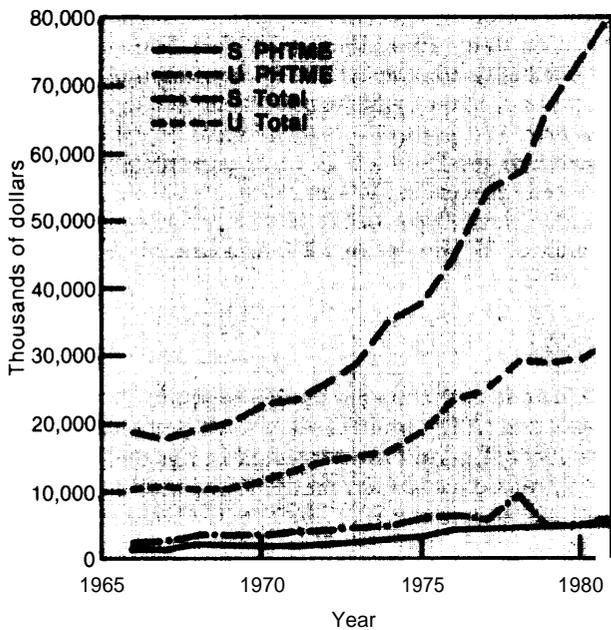
SOURCE: Office of Technology Assessment.

Figure B-16.—Dairy PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in constant dollars)



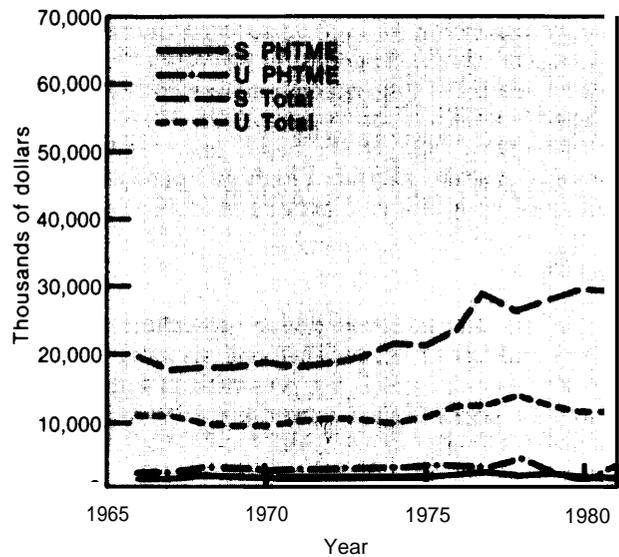
SOURCE: Office of Technology Assessment.

Figure B-17.—Beef PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in current dollars)



SOURCE: Office of Technology Assessment.

Figure B-18.—Beef PHTME and Total Research Expenditures by SAES and USDA, 1966-81 (in constant dollars)



SOURCE: Office of Technology Assessment.

Current dollar expenditures in the SAES on beef PHTME research increased 265 percent from 1966 to 1981, while the corresponding constant dollar expenditures increased 25 percent. During the same 16-year period, the current dollar expenditures on beef PHTME research in USDA increased 142 percent, but constant dollar expenditures declined 18 percent. SAES expendi-

tures on beef PHTME research as a percent of expenditures on all beef research ranged from a high of 12 percent in 1968 to a low of 6 percent in 1981. In USDA, the comparable percentages for the 1966-81 period ranged from a high of 33 percent in 1969 to a low of 17 percent in 1980. The 1981 proportion for USDA was about 18 percent.