

Peat

By Eugene T. Sheridan ¹

Peat production in the United States decreased 5% in 1972, principally because a smaller number of plants were operating than in 1971. Production declined in 14 States, and active plants decreased by 17. The largest production losses were recorded in Florida, Indiana, Minnesota, and Pennsylvania.

Commercial sales, which were 5% greater than production because about 30,000 tons of peat was sold from stockpiles, were 1% greater than in 1971. The total value of sales also increased slightly

because of the larger quantity sold and because of an increase of \$0.03 per ton in the average value of all peat sold.

Imports increased 5%, and the quantity of peat imported in 1972 was about one-half the quantity produced domestically. Ninety-six percent of the peat imported was shipped from Canada.

World production was estimated at 89 million short tons. The U.S.S.R. was the largest producer with an output estimated at 80 million tons, 89% of the world total.

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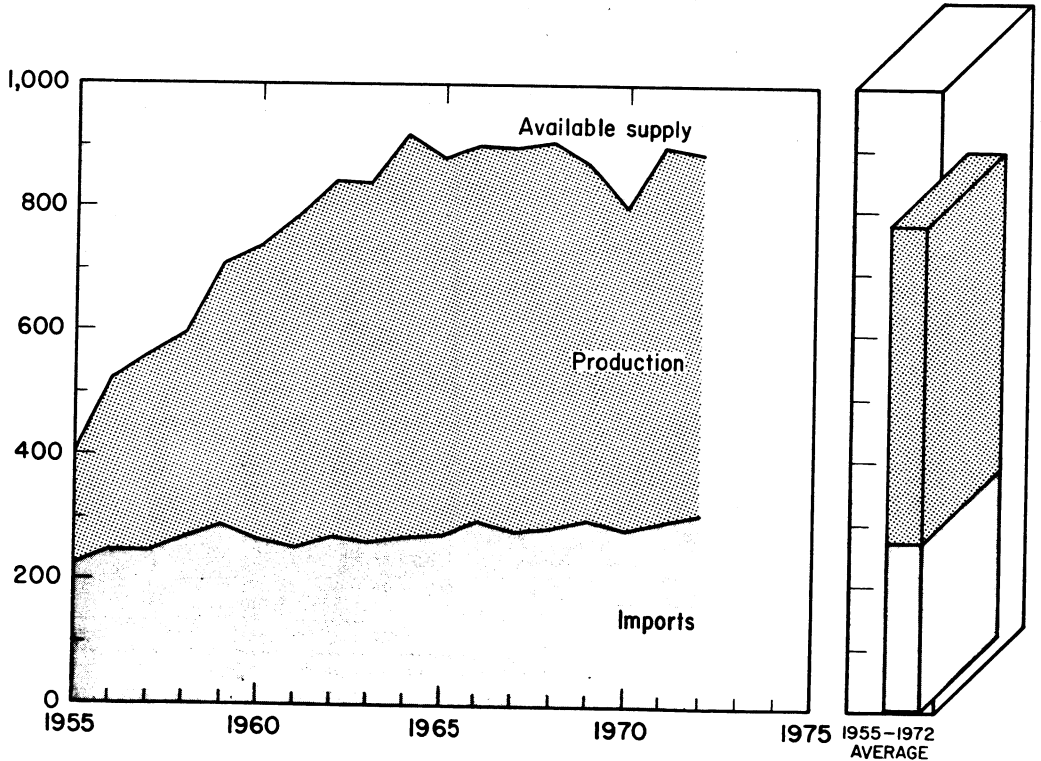


Figure 1.—Production, imports, and available supply of peat in the United States.

DOMESTIC PRODUCTION

The 5% decrease in production in 1972 resulted principally from a smaller output of moss peat and humus. This loss was partially offset by a 5% increase in reed-sedge production.

Twenty-two States produced peat in 1972 compared with 24 States in 1971. Michigan

remained the largest producer with 36% of the Nation's output. Illinois, Florida, New Jersey, Colorado, California, and Indiana followed in output in the order named.

These States, with Michigan, provided nearly four-fifths of the total production.

Table 1.—Salient peat statistics

| | 1969 | 1970 | 1971 | 1972 |
|-----------------------------------------------------|---------|---------|---------|---------|
| United States: | | | | |
| Number of operations..... | 128 | 122 | 120 | 103 |
| Production.....short tons..... | 572,122 | 516,825 | 605,382 | 576,712 |
| Commercial sales.....do..... | 565,760 | 525,603 | 599,548 | 606,679 |
| Value of sales.....thousands..... | \$7,055 | \$5,986 | \$7,011 | \$7,112 |
| Average per ton..... | \$12.47 | \$11.89 | \$11.69 | \$11.72 |
| Imports.....short tons..... | 299,997 | 283,211 | 296,283 | 310,491 |
| Available for consumption ¹do..... | 865,757 | 808,814 | 895,881 | 917,169 |
| World: Production.....thousand short tons..... | 89,431 | 92,026 | 89,610 | 89,388 |

[†] Revised.

¹ Commercial sales plus imports.

Table 2.—Peat produced in the United States in 1972, by kind

(Short tons)

| Kind | Unpre- pared | Processed | | | Total |
|-----------------|-----------------|-----------|--------------------|-------------------------------|---------|
| | | Shredded | Kiln-dried only | Shredded and kiln-dried | |
| Moss..... | 56,589 | 79,191 | 1,075 | 2,468 | 139,273 |
| Reed-sedge..... | 105,235 | 219,345 | -- | -- | 324,580 |
| Humus..... | 15,123 | 95,561 | 1,775 | 400 | 112,859 |
| Total..... | 176,897 | 394,097 | 2,850 | 2,868 | 576,712 |

Table 3.—Production and commercial sales of peat in the United States in 1972, by State

| State | Active plants | Production (short tons) | Commercial sales | | |
|---------------------|------------------|----------------------------|------------------|----------------------|--------------------|
| | | | Short tons | Value | |
| | | | | Total (thousands) | Average per ton |
| California..... | 3 | 29,233 | 29,233 | \$620 | \$21.20 |
| Colorado..... | 10 | 38,528 | 38,528 | 210 | 5.44 |
| Florida..... | 8 | 45,424 | 45,424 | 362 | 7.97 |
| Georgia..... | 2 | W | W | W | W |
| Illinois..... | 5 | 69,523 | 74,003 | 985 | 12.64 |
| Indiana..... | 9 | 24,413 | 45,321 | 478 | 10.54 |
| Iowa..... | 2 | W | W | W | W |
| Maine..... | 4 | 3,013 | 2,083 | 99 | 47.60 |
| Maryland..... | 1 | 2,653 | 2,653 | 29 | 11.03 |
| Massachusetts..... | 1 | W | W | W | W |
| Michigan..... | 19 | 208,691 | 219,251 | 2,190 | 9.99 |
| Minnesota..... | 3 | W | W | W | W |
| Montana..... | 1 | 750 | 750 | W | W |
| New Jersey..... | 4 | W | W | W | W |
| New Mexico..... | 1 | 2,436 | 2,436 | 46 | 18.96 |
| New York..... | 5 | 14,984 | 14,507 | 200 | 13.81 |
| Ohio..... | 7 | 3,902 | 3,902 | 67 | 17.10 |
| Ohio..... | 9 | 23,136 | 22,416 | 320 | 14.30 |
| Pennsylvania..... | 1 | 14,500 | 11,200 | W | W |
| South Carolina..... | 1 | 95 | 95 | 1 | 14.74 |
| Vermont..... | 6 | 18,035 | 18,035 | 89 | 4.93 |
| Washington..... | 1 | 1,815 | 1,815 | 179 | 98.80 |
| Wisconsin..... | 1 | 1,815 | 1,815 | 179 | 98.80 |
| Total..... | 103 | 576,712 | 606,679 | 7,112 | 11.72 |

W Withheld to avoid disclosing individual company confidential data; included in total.

Table 4.—Relative size of peat operations in the United States

| Size | 1971 | | | | 1972 | | | |
|----------------------------|---------------|------------|------------|------------|---------------|------------|------------|------------|
| | Active plants | | Production | | Active plants | | Production | |
| | Number | % of total | Short tons | % of total | Number | % of total | Short tons | % of total |
| Under 500 tons..... | 29 | 24.1 | 5,868 | 1.0 | 26 | 25.2 | 6,142 | 1.0 |
| 500 to 999 tons..... | 17 | 14.2 | 11,649 | 1.9 | 11 | 10.7 | 7,678 | 1.3 |
| 1,000 to 4,999 tons..... | 44 | 36.7 | 93,949 | 15.5 | 38 | 36.9 | 86,279 | 15.0 |
| 5,000 to 14,999 tons..... | 20 | 16.7 | 132,622 | 30.2 | 18 | 17.5 | 170,153 | 29.5 |
| 15,000 to 24,999 tons..... | 4 | 3.3 | 67,388 | 11.1 | 6 | 5.8 | 111,240 | 19.3 |
| Over 25,000 tons..... | 6 | 5.0 | 243,906 | 40.3 | 4 | 3.9 | 195,220 | 33.9 |
| Total..... | 120 | 100.0 | 605,382 | 100.0 | 103 | 100.0 | 576,712 | 100.0 |

Active operations decreased from 120 to 103, but average output per plant increased 11% to 5,599 tons. Three-fourths of the operations, however, had outputs smaller than the average. Only 28 plants had production in excess of 5,000 tons, and

only four plants produced more than 25,000 tons.

Roughly one-third of the peat was sold as produced with no processing other than air drying. Most of the remainder was shredded, and a small quantity was subjected to thermal drying.

CONSUMPTION AND USES

Commercial sales and imports both increased in 1972, and the amount of peat available for consumption was about 2% greater than in 1971.

Peat was used for a variety of purposes, but 85% of the total commercial sales reported by producers was for general soil improvement. Among the principal markets for this peat were nurseries and greenhouses, which used peat as a mulch and as a medium for growing plants and shrubs; landscape gardeners and contractors, who used peat for building lawns and golf course greens and for transplanting

trees and shrubs; and garden, hardware, and variety stores, which sold peat to homeowners for mulching and for improving lawn and garden soils. Most of the remaining peat was sold for use in potting soils and for packing flowers and shrubs, but small quantities were used in mushroom beds and in mixed fertilizers and for earthworm culture and seed inoculant.

Fifty-four percent of the tonnage of peat sold commercially by producers was packaged. Packaged peat, however, accounted for more than two-thirds of the total value of sales. Of the total peat sold in packages,

Table 5.—Commercial sales of peat in the United States in 1972, by kind and use ¹

| Use | Moss | | Reed-sedge | | Humus | |
|-----------------------|------------|-------------------|------------|-------------------|------------|-------------------|
| | Short tons | Value (thousands) | Short tons | Value (thousands) | Short tons | Value (thousands) |
| Bulk: | | | | | | |
| Soil improvement..... | 56,882 | \$545 | 75,764 | \$688 | 65,400 | \$433 |
| Other uses..... | 23,058 | 121 | 37,096 | 346 | 18,335 | 130 |
| Total..... | 79,940 | 665 | 112,860 | 1,035 | 83,735 | 563 |
| Packaged: | | | | | | |
| Soil improvement..... | 84,467 | 1,613 | 212,765 | 2,375 | 23,305 | 508 |
| Other uses..... | 2,423 | 66 | 41,821 | 69 | 2,363 | 217 |
| Total..... | 86,890 | 1,678 | 217,586 | 2,444 | 25,668 | 725 |
| Total: | | | | | | |
| Soil improvement..... | 141,349 | 2,158 | 288,528 | 3,063 | 88,705 | 941 |
| Other uses..... | 25,481 | 187 | 41,917 | 415 | 20,698 | 347 |
| Grand total..... | 166,830 | 2,344 | 330,446 | 3,479 | 109,403 | 1,289 |

¹ Data may not add to totals shown because of independent rounding.

Table 6.—Commercial sales of peat in the United States in 1972, by use

| Use | In bulk | | In packages | | Total ¹ | |
|-----------------------------------|------------|-------------------|-------------|-------------------|--------------------|-------------------|
| | Short tons | Value (thousands) | Short tons | Value (thousands) | Short tons | Value (thousands) |
| Soil improvement..... | 198,046 | \$1,666 | 320,537 | \$4,495 | 518,583 | \$6,161 |
| Potting soils..... | 27,032 | 222 | 6,762 | 117 | 33,794 | 339 |
| Packing flowers, shrubs, etc..... | 27,304 | 221 | 1,170 | 8 | 27,474 | 229 |
| Seed inoculant..... | - | - | 2,448 | 224 | 2,448 | 224 |
| Mushroom beds..... | 2,749 | 88 | - | - | 2,749 | 38 |
| Earthworm culture..... | 5,767 | 50 | 227 | 4 | 5,994 | 54 |
| Mixed fertilizers..... | 15,637 | 66 | - | - | 15,637 | 66 |
| Total ¹ | 276,535 | 2,264 | 330,144 | 4,848 | 606,679 | 7,112 |

¹ Data may not add to totals shown because of independent rounding.

about two-thirds was reed-sedge peat, about one-fourth was moss peat, and the remainder was peat humus.

States leading in sales of packaged peat were Michigan, Illinois, Indiana, and New

Jersey, which, together, reported 84% of the total sales of packaged peat. Michigan was the largest producer of packaged peat with 55% of the total sales.

PRICES AND SPECIFICATIONS

Prices of peat at individual operations varied greatly in 1972, with the price depending mainly upon the kind of peat sold, the amount of processing, and whether the material was sold packaged or in bulk.

The overall average value per ton, f.o.b. plant, for peat sold in 1972 was \$11.72. This was an increase of \$0.03 per ton over the average value of 1971, and the bulk of the increase was attributed mainly to higher average receipts for peat sold by producers in New Jersey, Ohio, and Pennsylvania.

The average price of bulk peat increased \$0.31 per ton to \$8.19. Packaged prices, however, decreased an average of \$0.20 per ton to \$14.68. The average price for bulk peat was influenced mainly by higher overall prices for bulk sales by California, Pennsylvania, and South Carolina producers; the decline in the unit value of packaged peat was attributed to generally smaller receipts for each ton of packaged peat sold by Michigan producers.

Imported peat had a total value of \$17.2 million. The total value of imported peat was 13% greater than in 1971, partially because there was 14,000 tons more peat

imported but also because the average value per ton increased from \$51.11 to \$55.31.

Although the average value of imported peat was nearly four times that of domestically produced packaged peat, their values are not comparable because they are assigned at different marketing levels. Also, imported peat has different physical properties than most of the peat sold domestically, and it is usually sold on a volume basis rather than by weight. Each 100 pounds of a typical air-dried imported peat will measure approximately 12 bushels, whereas the same quantity of a typical domestic peat will measure 3 to 4 bushels. Only a few domestic operations produced peat with properties similar to those of the imported kind.

Peat is broadly classified in the United States as moss peat, reed-sedge peat, and humus, according to the materials from which it has been formed and its degree of decomposition. Moss peat is a type that has been formed principally from sphagnum, and/or other mosses; reed-sedge peat has originated mainly from reeds, sedges, and other swamp plants; and humus is peat too decomposed for identification of its biological origin.

FOREIGN TRADE

The quantity of peat imported into the United States in 1972 totaled 310,000 short tons. This was 5% more peat than was im-

ported in 1971 and the largest quantity imported in any year to date.

Canada provided the bulk of the im-

ports, supplying 96% of the total peat imported. Virtually all of the remaining foreign peat was supplied by Europe.

European shipments decreased 8%, principally because of smaller shipments

from West Germany, Ireland, and Sweden. The decline in shipments from these countries, however, was partially offset by a substantially larger shipment from Poland. Imported peat was classified according to

Table 7.—U.S. imports for consumption of peat moss, by grade and country

| Country | Poultry and stable grade | | Fertilizer grade | | Total | |
|----------------|--------------------------|-------------------|------------------|-------------------|------------|-------------------|
| | Short tons | Value (thousands) | Short tons | Value (thousands) | Short tons | Value (thousands) |
| 1971 | | | | | | |
| Canada | 1,941 | \$129 | 281,519 | \$14,403 | 283,460 | \$14,532 |
| Denmark | -- | -- | 19 | 1 | 19 | 1 |
| Germany, West | 513 | 21 | 9,327 | 423 | 9,840 | 444 |
| Ireland | 6 | 3 | 172 | 10 | 178 | 13 |
| Mexico | -- | -- | 93 | 4 | 93 | 4 |
| Netherlands | 13 | 1 | -- | -- | 13 | 1 |
| Poland | -- | -- | 2,308 | 121 | 2,308 | 121 |
| Sweden | -- | -- | 319 | 22 | 319 | 22 |
| United Kingdom | -- | -- | 53 | 4 | 53 | 4 |
| Total | 2,473 | 154 | 293,810 | 14,988 | 296,283 | 15,142 |
| 1972 | | | | | | |
| Canada | 2,057 | 162 | 296,743 | 16,335 | 298,800 | 16,497 |
| France | -- | -- | 14 | 1 | 14 | 1 |
| Germany, West | 857 | 46 | 7,337 | 450 | 8,194 | 496 |
| Ireland | -- | -- | 14 | 1 | 14 | 1 |
| Norway | 22 | 2 | -- | -- | 22 | 2 |
| Poland | 187 | 6 | 3,075 | 163 | 3,262 | 169 |
| Sweden | 3 | 3 | -- | -- | 3 | 3 |
| Taiwan | 22 | 1 | -- | -- | 22 | 1 |
| U.S.S.R. | 110 | 2 | -- | -- | 110 | 2 |
| United Kingdom | -- | -- | 50 | 1 | 50 | 1 |
| Total | 3,258 | 222 | 307,233 | 16,951 | 310,491 | 17,173 |

Table 8.—U.S. imports for consumption of peat moss in 1972, by grade and customs district

| Customs District | Poultry and stable grade | | Fertilizer grade | | Total | |
|----------------------|--------------------------|-------------------|------------------|-------------------|------------|-------------------|
| | Short tons | Value (thousands) | Short tons | Value (thousands) | Short tons | Value (thousands) |
| Baltimore, Md | 61 | \$4 | 994 | \$45 | 1,055 | \$49 |
| Boston, Mass | -- | -- | 234 | 18 | 234 | 18 |
| Buffalo, N.Y. | 135 | 11 | 22,982 | 1,236 | 23,117 | 1,247 |
| Charleston, S.C. | 17 | 1 | -- | -- | 17 | 1 |
| Detroit, Mich | 142 | 11 | 44,977 | 2,880 | 45,119 | 2,891 |
| Duluth, Minn | -- | -- | 3,230 | 284 | 3,230 | 284 |
| Great Falls, Mont. | 22 | 1 | 8,557 | 491 | 8,579 | 492 |
| Honolulu, Hawaii | 6 | 1 | -- | -- | 6 | 1 |
| Houston, Tex | -- | -- | 408 | 22 | 408 | 22 |
| Los Angeles, Calif | -- | -- | 659 | 42 | 659 | 42 |
| Miami, Fla | -- | -- | 233 | 19 | 233 | 19 |
| Mobile, Ala | 423 | 23 | 1,346 | 76 | 1,774 | 99 |
| New Orleans, La | -- | -- | 1,533 | 65 | 1,533 | 65 |
| New York, N.Y. | 136 | 6 | 962 | 58 | 1,098 | 64 |
| Norfolk, Va | -- | -- | 448 | 19 | 448 | 19 |
| Ogdensburg, N.Y. | 19 | 1 | 85,068 | 4,235 | 85,087 | 4,236 |
| Pembina, N. Dak | 1,174 | 80 | 21,059 | 1,113 | 22,233 | 1,193 |
| Philadelphia, Pa | 109 | 5 | 523 | 32 | 637 | 37 |
| Portland, Maine | 542 | 56 | 12,999 | 658 | 13,541 | 714 |
| Portland, Oreg | 32 | 2 | 102 | 5 | 134 | 7 |
| St. Albans, Vt. | 17 | 1 | 45,273 | 2,236 | 45,290 | 2,237 |
| San Francisco, Calif | 69 | 6 | 636 | 71 | 705 | 77 |
| San Juan, P.R. | -- | -- | 769 | 53 | 769 | 53 |
| Savannah, Ga | 182 | 7 | 339 | 16 | 521 | 23 |
| Seattle, Wash | -- | -- | 52,605 | 3,200 | 52,605 | 3,200 |
| Tampa, Fla | 167 | 6 | 1,292 | 77 | 1,459 | 83 |
| Total | 3,258 | 222 | 307,233 | 16,951 | 310,491 | 17,173 |

use as poultry-and-stable-grade peat and fertilizer-grade peat. Of the total imported, 99% was duty-free fertilizer-grade peat. A duty of \$0.25 per long ton was levied on poultry-and-stable-grade peat.

Foreign peat entered the United States

through 26 customs districts in 1972, but 88% of the total was shipped through the Buffalo and Ogdensburg, N.Y.; Detroit, Mich.; Pembina, N. Dak.; St. Albans, Vt.; and Seattle, Wash., customs districts. The largest quantity, 85,000 tons, was shipped through the Ogdensburg district.

Table 9.—Peat moss imported for consumption from Canada and West Germany in 1972, by grade and customs district

| Customs district | Canada | | | | West Germany | | | |
|---------------------------|--------------------------|-------------------|------------------|-------------------|--------------------------|-------------------|------------------|-------------------|
| | Poultry and stable grade | | Fertilizer grade | | Poultry and stable grade | | Fertilizer grade | |
| | Short tons | Value (thousands) | Short tons | Value (thousands) | Short tons | Value (thousands) | Short tons | Value (thousands) |
| Baltimore Md..... | -- | -- | -- | -- | 17 | \$1 | 994 | \$45 |
| Boston, Mass..... | -- | -- | 57 | \$3 | -- | -- | -- | -- |
| Buffalo, N. Y..... | 135 | \$11 | 22,982 | 1,237 | -- | -- | -- | -- |
| Charleston, S.C..... | -- | -- | -- | -- | 17 | 1 | -- | -- |
| Detroit, Mich..... | 142 | 11 | 44,977 | 2,880 | -- | -- | -- | -- |
| Duluth, Minn..... | -- | -- | 3,230 | 284 | -- | -- | -- | -- |
| Great Falls, Mont..... | 22 | 1 | 8,557 | 491 | -- | -- | -- | -- |
| Honolulu, Hawaii..... | 6 | 1 | -- | -- | -- | -- | 203 | 11 |
| Houston, Tex..... | -- | -- | -- | -- | -- | -- | 659 | 42 |
| Los Angeles, Calif..... | -- | -- | -- | -- | -- | -- | 141 | 9 |
| Miami, Fla..... | -- | -- | -- | -- | 428 | 23 | 1,346 | 76 |
| Mobile, Ala..... | -- | -- | -- | -- | -- | -- | 144 | 6 |
| New Orleans, La..... | -- | -- | -- | -- | -- | -- | 720 | 45 |
| New York, N.Y..... | -- | -- | -- | -- | -- | -- | 293 | 13 |
| Norfolk, Va..... | -- | -- | -- | -- | -- | -- | -- | -- |
| Ogdensburg, N.Y..... | 19 | 1 | 85,054 | 4,234 | -- | -- | -- | -- |
| Pembina, N. Dak..... | 1,174 | 80 | 21,059 | 1,113 | -- | -- | -- | -- |
| Philadelphia, Pa..... | -- | -- | -- | -- | 109 | 5 | 373 | 22 |
| Portland, Maine..... | 542 | 56 | 12,999 | 653 | -- | -- | -- | -- |
| Portland, Oreg..... | -- | -- | -- | -- | 32 | 2 | 102 | 5 |
| St. Albans, Vt..... | 17 | 1 | 45,273 | 2,236 | -- | -- | -- | -- |
| San Francisco, Calif..... | -- | -- | -- | -- | 69 | 6 | 636 | 71 |
| San Juan, P.R..... | -- | -- | -- | -- | -- | -- | 769 | 53 |
| Savannah, Ga..... | -- | -- | -- | -- | 130 | 6 | 205 | 12 |
| Seattle, Wash..... | -- | -- | 52,555 | 3,199 | -- | -- | 742 | 40 |
| Tampa, Fla..... | -- | -- | -- | -- | 55 | 2 | -- | -- |
| Total..... | 2,057 | 162 | 296,743 | 16,335 | 857 | 46 | 7,337 | 450 |

WORLD REVIEW

World production of peat in 1972 was estimated at 89 million short tons. While this appears to be less than one-half the quantity previously estimated for 1971 world output, it in actuality reflects a revision in the data previously reported for the U.S.S.R. Output statistics for the U.S.S.R. in 1972 and previous years were adjusted downward to reflect reported data based upon study tour reports and fully documented official production figures. The data now exclude peat produced by collective farms in the U.S.S.R., which had previously been estimated but for which no reliable data could be obtained.

Despite the exclusion of a portion of the total Soviet output, the U.S.S.R. was by far the largest peat producer with an esti-

mated 89% of the world production. According to published Soviet figures, 30 million tons of peat was produced by State enterprises for agricultural use, and about 50 million tons was produced for fuel. Agricultural peat was used for general soil improvement and the manufacture of fertilizers, and fuel peat was used for generating electric power and for domestic and industrial heating.

Ireland ranked second in peat production with an estimated output of 5.8 million short tons. Virtually all of Ireland's production was fuel peat that was used for electric-power generating and household heating. A small amount of agricultural peat was produced, principally for export.

West Germany, the third-ranking peat

producer with 1.8 million short tons, provided about 2% of the world output. Most of the West German production was agricultural peat, but about one-fifth was consumed as fuel.

Other producers ranking in output in the order named were the United States,

the Netherlands, Canada, and Finland. The combined output of these countries was, however, only 2% of the total. Although fourth in world production, output of the United States was only 0.7% of the world total.

Table 10.—Peat: World production, by country

(Thousand short tons)

| Country ¹ | 1970 | 1971 | 1972 ² |
|----------------------------------------|--------|--------|-------------------|
| Argentina, agricultural use | | | |
| Canada, agricultural use | 3 | 3 | 3 |
| Denmark, fuel ^e | 321 | 326 | 370 |
| Finland: | 6 | 6 | 6 |
| Agricultural use | 159 | 259 | 140 |
| Fuel | 97 | 112 | 166 |
| France, agricultural use | 85 | 90 | 90 |
| Germany, West: | | | |
| Agricultural use | 1,306 | 1,494 | 1,440 |
| Fuel | 357 | 352 | 313 |
| Hungary, agricultural use ^e | 72 | 72 | 72 |
| Ireland: | | | |
| Agricultural use | 58 | 63 | 70 |
| Fuel | 5,908 | 6,058 | 5,700 |
| Israel, agricultural use ^e | 22 | 22 | 22 |
| Japan ^e | 80 | 80 | 80 |
| Korea, Republic of, agricultural use | 9 | 4 | 4 |
| Netherlands ^e | 440 | 440 | 440 |
| Norway: | | | |
| Agricultural use | 12 | 12 | 12 |
| Fuel ^e | 6 | 6 | 6 |
| Poland, fuel | 55 | 55 | 55 |
| Spain | 18 | 19 | 19 |
| Sweden: | | | |
| Agricultural use | 113 | 127 | 130 |
| Fuel ^e | 23 | 23 | 23 |
| U.S.S.R.: | | | |
| Agricultural use ^e | 30,000 | 30,000 | 30,000 |
| Fuel | 52,359 | 49,382 | 49,600 |
| United States, agricultural use | 517 | 605 | 577 |
| Total | 92,026 | 89,610 | 89,338 |
| Fuel peat included in total | 58,811 | 55,994 | 55,369 |

^e Estimate. ^p Preliminary. ^r Revised.

¹ In addition to the countries listed, Austria, Canada, Iceland, and Italy produce a negligible quantity of fuel peat. No data are available for East Germany, a major producer.

TECHNOLOGY

Experimental work conducted at the University of Sherbrooke, Quebec, Canada,² indicated that mercury present in waste water can be removed and recovered quantitatively by treatment with peat. The humic acids contained in peat are known to be good ion-exchange resins, and the studies have shown that contaminated waters can be made virtually mercury-free if treated with moss peat in the presence of a precipitating agent such as sodium sulfide. Recovery of mercury is accomplished by burning the peat containing mercury in the presence of a limited amount of air. Vapors of mercury and sulfur dioxide are eliminated in a scrubbing tower containing limestone and elemental sulfur, and metal-

lic mercury can be decanted from the water.

Field and laboratory studies conducted at the University of Minnesota³ have shown that peat soil and various mixtures of sand, calcitic limestone, and peat can be used as filter media to remove significant amounts of phosphorus and organic materials from wastewaters. The treatment

² Lalancette, J. M., and B. Coupal. Recovery of Mercury From Polluted Water Through Peat Treatment. Proc. 4th Internat. Peat Cong., Otaniemi, Finland, June 25-30, 1972, v. 4, pp. 213-217.

³ Farnham, R. S., and J. L. Brown. Advanced Wastewater Treatment Using Organic and Inorganic Materials. Proc. 4th Internat. Peat Cong., Otaniemi, Finland, June 25-30, 1972, v. 4, pp. 271-298.

processes used in the experiments were physical and chemical as well as biological in nature, and the major emphasis was placed upon the removal of phosphorus, which has become a major pollutant in recent years. The studies also showed that various types of peat can be used in such filter systems and that the systems are not only efficient, but they can be operated at relatively high application rates.

Additional research work on peat at the University of Sherbrooke,⁴ evaluated the use of peat as an absorbing agent for the removal of coloring matter from the effluent of a dye house at a textile plant. Many of the dyes used by the textile industry are nonbiodegradable, and their removal in an economic manner remains a problem. Adsorption of these dyes with activated carbon is one of the most promising of the processes proposed or used, but activated carbon is a relatively expensive material for this use. The study concluded that sphagnum peat moss of the blond type has good absorption capacity for basic dyes, but this capacity decreases for dyes that are acidic. Also, with an actual effluent from a dye house, competitive adsorption with other polluting material decreased the efficiency of peat moss in reducing the concentration of dyestuff.

Laboratory tests,⁵ confirmed partly on a pilot and technical scale, in Raciborz, Poland, show that peat can be used effectively as a basic raw material to obtain a

number of activated carbons with good physical, chemical, and adsorption properties. Such carbons may be produced, both by gas activation in which peat is treated with steam, carbon dioxide, or air at 700° to 1,000°C, or by chemical activation, based upon the impregnation of peat with chemical compounds. The chemical activation method uses chemicals such as zinc chloride or phosphoric acid to impregnate the peat, after which it is carbonized and activated at 600° to 700°C. Activated carbons with a high proportion of micropores are generally used for gas and vapor adsorption, carbons with medium-sized pores are used for catalytic and special applications, and macroporous carbons serve as decolorizing and medicinal agents. Peat has been used for the production of all of the aforementioned types of activated carbon as a replacement raw material for wood charcoal, which is more costly and, in Poland, becoming increasingly less available because of a timber deficit. Baltic-type peat from the Szczencin and Leborg regions of Poland, which is characteristically low in ash content, is especially amenable to activated carbon production.

⁴ Dufort, Jean, and Maurice Ruel. Peat Moss As An Adsorbing Agent for the Removal of Coloring Matter. Proc. 4th Internat. Peat Cong., Otaniemi, Finland, June 25-30, 1972, v. 4, pp. 299-310.

⁵ Fica, Jozef. Investigations on Peat Utilization for the Production of Activated Carbon. Proc. 4th Internat. Peat Cong., Otaniemi, Finland, June 25-30, 1972, v. 4, pp. 185-196.