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CORK PRODUCTION AND TRADE WITH  
PARTICULAR EMPHASIS ON THE SOVIET BLOC

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CORK PRODUCTION AND TRADE  
WITH PARTICULAR EMPHASIS ON THE SOVIET BLOC 1/

Summary

Cork is produced in commercial quantities in very limited areas of the world. Because of its unique qualities, cork has a large number of specialized industrial uses and is a strategic commodity in time of war. World production and exports of cork in 1951 are at the highest levels in history as a result of the heavy demand from all sources. The Soviet Bloc 2/ is dependent upon imports to meet its cork requirements, since long-term efforts to produce an appreciable amount of cork in the USSR thus far have been unsuccessful. The increased imports into the Soviet Bloc during 1950 reflect a growing need for cork and possibly for stockpiling.

1. Introduction.

Cork, which is obtained from the bark of the cork oak, is a strategic commodity in time of war because of its many military and nonmilitary uses for which satisfactory substitutes in some instances may be either limited or not available. Such characteristics of cork as its natural compressibility, resilience, lightness, insulating value, resistance to moisture and liquid penetration, and frictional quality account for the large number of its specialized uses.

In terms of end use, cork usually is divided into two grades, corkwood and grinding cork. Corkwood, the highest grade, is used mainly in stoppers, discs, squares, life preservers, and floats. Grinding cork, the lower grade, is used in cork composition products (such as beverage crowns, gaskets, oil immersion friction drives, friction clutches, carburetor floats, shoe fillers, grinding and polishing wheels, washers, seals, grease retainers, and textile cots), in corkboard for insulating and acoustical purposes, and in linoleum. There are no completely satisfactory substitutes for the principal industrial cork products, particularly gaskets, oil immersion friction drives, friction

1. A basic report on cork entitled Cork Requirements and Supplies, dated June 1951, which deals largely with supplies, consumption, and uses of cork in the US, has been published by the Forest Products Committee of the Munitions Board.

2. The Soviet Bloc as herein referred to includes the USSR, Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Rumania, and East Germany.

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clutches, carburetor floats, washers, grease retainers, textile cots, grinding and polishing wheels, and certain types of insulation.

The climatic conditions necessary for the growth of the cork oak restrict commercial production to relatively small areas in southern Europe, notably in Portugal, Spain, France, and Italy and in North Africa. Relatively insignificant quantities (less than one-half of 1 percent of the world total) are produced in the eastern Mediterranean basin, the US, the USSR, Japan, China, Korea, and Manchuria. In time of war the problem of obtaining adequate supplies of cork, as in the case of such critical materials as industrial diamonds, becomes increasingly important in the nonproducing countries.

## 2. World Production and Trade.

Approximately 34 percent of the world's cork-producing area is located in Portugal; 24 percent in Spain, France, and Italy; and the remaining 42 percent in North Africa. Approximately half of the North African cork-producing area is in Algeria, one-third in French Morocco, and the remaining one-sixth in Tunisia and Spanish Morocco. (The area of cork oak forest in the principal producing countries is given in Table 1.)

The total annual world harvest of cork bark normally averages about 300,000 metric tons, with Portugal, the largest producer, accounting for about 50 percent; North Africa, 20 percent; and Spain, France, and Italy, the remaining 30 percent. 1/ Portugal also accounts for over one-half of the total world exportable supply. (A summary of the average production and exports of cork of the major producing countries during the prewar, war, and postwar periods is given in Table 2.)

As a result of the strong world demand for cork, caused to some extent by fear of another world war, production and exports in the calendar year 1950 reached record levels of about 353,000 metric tons produced and 348,000 tons exported. These tonnages represent increases of 11 and 29 percent, respectively, over the 1945-49 averages.

1. As indicated by a comparison of the production figures and the producing area percentages, there is wide variation in the amount of cork produced on a given acreage, depending on locality. In Portugal, yields are relatively high; in North Africa, very low.

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In all of the major producing countries, plans were being made to increase production to the maximum in 1951 in order to meet the greatly increased demand. Purchase contracts were being let in many countries before the bark was stripped from the trees. This large demand for cork has caused a sharp reduction in the normal yearly carry-over stocks, which, along with the premature stripping of green bark <sup>1/</sup> in some areas, may result in a shortage of high-quality cork within the next few years.

The US, the UK, West Germany, and the USSR were the four leading importers of cork in 1950. The US normally imports over 40 percent of the world's cork export, and the UK, West Germany, and the USSR import about 25 percent. (A summary of the average imports of cork and cork products by these four countries during the prewar, war, and postwar periods is given in Table 3.) West Germany and the USSR showed the largest increases in imports in 1950. West Germany's imports increased by 152 percent and those of the USSR by 153 percent over the respective previous 5-year averages.

### 3. Soviet Bloc Imports.

The USSR maintains its own cork manufacturing industry, normally importing raw cork directly from the producing countries. Only about 1 percent of that country's known imports are manufactured cork products.

In the Soviet Bloc the USSR has long been the foremost user of corkwood, and Portugal has been the chief supplier of this grade of cork. Soviet imports of grinding cork originate principally in Algeria and French Morocco, which are second and third in order of importance to the Soviets as cork suppliers.

The European Satellite countries import all of their cork requirements, including a considerable amount of cork products. Czechoslovakia is the major Satellite importer, and Portugal and North Africa are the principal exporters to the Satellites. Relatively small quantities of cork are exported from Spain to the Satellite countries.

1. High-quality bark requires from 8 to 10 years of growth. Any earlier stripping results in an inferior bark with limited uses.

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Payment for cork imports by the USSR usually is made in dollars. Since World War II, attempts have been made by the Soviets to arrange for barter transactions, but in most cases these have failed to materialize. With respect to the Satellites, transactions usually are made on a barter basis and through regular trade agreements, occasionally in exchange for high-priority commodities such as wheat, chemicals, and industrial goods. The principal firms shipping cork from Portugal to the USSR and the European Satellites are Wicander, Ltda., shipping to Poland and East Germany through Bremen; E. Brito and Irmao, shipping to Czechoslovakia; and J. Barreira and Irmao, shipping to Odessa and Libau.

Total cork imports into the USSR in 1950 represented an increase of 153 percent over the 1945-49 average. (A summary of cork imports <sup>1/</sup> into the Soviet Bloc from the major producing countries for the prewar, war, and post-war periods is given in Table 4.) Total Soviet Bloc imports in 1950 represented an increase of 124 percent over the 1945-49 average. These figures take into consideration only those imports received directly from the producing countries. There is some evidence that the USSR and the Satellites are augmenting their supplies of cork by transshipments through other European countries, particularly West Germany. The substantial increase in raw cork exports to West Germany in 1950 may be an indication of this (see Table 3). The large increase in cork imports in 1950 probably results from increased industrial activity in the Soviet Bloc, particularly in the shipbuilding, stopper, and linoleum industries. The possibility that some of this cork is being stockpiled, however, cannot be overlooked.

Soviet Bloc requirements for cork cannot be ascertained, because of the many and varied industrial uses of cork as well as the possible utilization of substitutes.

The extent to which the Soviet Bloc has been successful in finding cork substitutes is not known. Attempts by the Soviets in 1948 to substitute cardboard for cork composition gaskets, washers, and seal retainers proved unsuccessful because of the inability of cardboard to withstand the permeating action of oil.

1. The statistics presented on the Soviet Bloc represent a summary of all available material.

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The outlook in the Soviet Bloc for 1951, based on statistics through June 1951 on imports from a few producing countries, gives every indication of a continued high rate of cork purchasing which may surpass the high 1950 level. The fact that in many instances the USSR is bidding on the best grades of cork, with apparent disregard of price, supports this assumption.

#### 4. Experimental Cork Production in the USSR.

The USSR has been experimenting for over a century with the culture of the cork oak in the Crimea and Southern Caucasus regions in an attempt to attain self-sufficiency in cork production. First plantings of the cork oak were made in the Crimea in 1819, in Sukhumi and Gagry in 1890, and in Kutaisi in 1898. At about the turn of the century a plan was developed which visualized the planting of 10,000 hectares 1/ of cork oak trees by 1929. By 1930, although plantings had spread to Adzharia, Abkhazia, West Georgia, and Azerbaydzhan, cork oaks were being grown on a total of only 900 hectares. In 1929, additional plans were formulated for the systematic planting of 2,500 hectares each year at a density of about 200 to 250 seedlings to the hectare so that at the end of 30 years a total of 75,000 hectares would be attained, an area which the Soviets thought sufficient to supply all of their domestic cork requirements. The plantings were to be made in 13 regions of the USSR, principally in the Crimea and around the Black and Caspian seacoasts of the Caucasus. (A tabular summary, listing the principal regions, dates, areas of plantings, problems encountered, and prospects for future developments, is given in Table 5.)

Young cork oaks are highly susceptible to damage from many causes, and the Soviet producing regions are not well-suited to the needs of this plant. As a result, hundreds of hectares of trees have been destroyed throughout the years by frost, winds, soil conditions, mice, maggots, crickets, wild and domestic animals, and various diseases. By 1937, cork trees were being grown on only about 925 hectares in the USSR, and many of the trees were in very poor condition. The USSR invested 2 million rubles in 1937 in making additional plantings and conducting further experimental studies. By 1949, however, cork oak plantings had dwindled to about 830 hectares, with a density varying from 34 to 100 trees per hectare.

1. One hectare equals 2.47 acres.

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Thus, after more than a century of efforts to produce cork on a commercial scale in regions around the Black and Caspian seas, relatively little progress has been made by the Soviets toward overcoming unfavorable environmental factors. Even if experimental work on cork oak production is continued and intensified, it seems unlikely that the USSR can produce significant quantities of cork within the next few decades and hence will have to continue to depend on imports for the major source of supply.

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APPENDIX

TABLES

Table 1

Area of Cork Oak Forests  
in the Principal Producing Countries

<u>Country</u>	<u>Area (Hectares) a/</u>	<u>Percentage of Total</u>
Portugal	696,084	34
Spain	251,723	12
France b/	141,645	7
Italy c/	99,961	5
Algeria	445,170	22
French Morocco	299,883	15
Tunisia	95,104	4
Spanish Morocco	29,948	1
Total	<u>2,059,518</u>	<u>100</u>

- a. One hectare equals 2.47 acres.  
b. Including Corsica.  
c. Including Sardinia and Sicily.

Table 2

Production and Exports of Cork  
by the Principal Producing Countries  
1935-50

Country	Annual Average 1935-39		Annual Average 1940-44		Annual Average 1945-49		1950	
	Production	Exports a/	Production	Exports a/	Production	Exports a/	Production	Exports a/
Portugal	163,750 b/	155,072	141,317 b/	132,414	184,000 c/	164,075	195,000	209,970
Spain	57,533 d/	39,027 e/	42,430	35,183	57,840	43,961	74,400	45,748
Algeria	42,355 e/	43,901	22,300	19,842	33,173	36,756	33,000	48,500
French Morocco	16,900 d/	18,134	24,092 e/ a	5,427	16,868 c/	13,700 c/	20,000	25,500
France	10,630	4,904	9,000 b/	1,763	10,060	1,413 d/	11,000	2,693 b/
Italy	10,353	5,324	14,943 e/	4,298 c/	11,000	6,258 e/	12,000 b/	9,746
Tunisia	6,414	5,128	4,076	888 f/	3,165	3,948	4,435	5,176
Spanish Morocco	2,151 d/	445 e/	1,573 e/	276 e/	2,000	424 e/	2,942	382 b/
Total	310,086	271,922	259,731	200,091	318,106	270,525	352,777	347,712

a. The excess of exports over production in several cases reflects reductions in carry-over stocks in exporting countries.  
Note that this situation is particularly common in 1950.

- b. Estimated.  
c. Four-year average.  
d. Three-year average.  
e. Two-year average.  
f. One year.

Table 3

Total Imports of Cork into Selected Countries  
from the Principal Producing Countries  
1935-50

Importing Country	Metric Tons		
	Annual Average 1935-39	Annual Average 1940-44	Annual Average 1945-49
US	97,923 a/	99,325	125,083
UK	37,924 a/	30,890	41,639 a/
West Germany	42,723 a/	10,410	13,214 b/
USSR	6,477	1,372	4,632
Total	185,047	141,997	184,568

a. Four-year average.

b. One year.

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Table 4

Soviet Bloc Imports of Cork  
from the Principal Producing Countries  
1935-50

Producing Country	Metric Tons							
	Annual Average 1935-39		Annual Average 1940-44		Annual Average 1945-49		1950	
	USSR	European Satellites	USSR	European Satellites	USSR	European Satellites	USSR	European Satellites
Portugal	4,326 a/	2,009	1,142	240	3,032	930	8,972	3,959
Spain	441 b/	0	0	991	0	510	0	396
Algeria	1,710 b/-	0	230	0	600 s/	2,086 c/	2,726	1,066
French Morocco	0	0	0	0	0	92	0	98
France	0	0	0	0	0	0	0	0
Italy	0	371 b/	0	1,188 d/	1,000 s/	141 s/	0	269
Tunisia	0	0	0	0	0	0	0	0
Spanish Morocco	0	0	0	0	0	0	0	0
Other	0	3,752	0	0	0	0	0	1,307
Subtotal	6,477	6,132	1,372	2,419	4,632	3,759	11,698	7,095
Total, Soviet Bloc	12,609		3,791		8,391		18,792	

- a. One year.
- b. Three-year average.
- c. Two-year average.
- d. Four-year average.

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FOOTNOTES FOR TABLES

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