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FOOD PRODUCTION AND CONSUMPTION IN YUGOSLAVIA

[This report presents information on Yugoslav food problems and the Yugoslav food industry, taken from 1951 - 1953 Serbian and Croatian sources.

Part I of the report deals with food consumption and availability, while Part II gives data on food industry production.

Numbers in parentheses refer to appended sources.]

I. YUGOSLAV FOOD PROBLEMS

Prewar Food Problems

Since there was no shortage of agricultural products on the Yugoslav market in average harvest years, and since prices of such products were relatively low, it would seem that food was not a problem in prewar Yugoslavia.

The average annual per capita consumption from 1934 to 1938 was as follows (in kilograms):

	Cereals	Fruit	Meat, Fish	Milk	Eggs	Fats	Sugar	Pota-toes	Vege-tables
Production	543	89	26	147	2.9	7.5	4.5	108	97.7
Consumption	228	30	23	112	2.1	6	4.5	55	66

Prewar Yugoslavia was last in Europe in consumption of meat, eggs, fats, and sugar. The consumption of milk and dairy products was quite high, but this offset only slightly the lack of proteins of animal origin. Per capita consumption of animal proteins was 89 percent of the required minimum, considerably below the European average. The disparity in consumption of animal products by the rich and poor was very high. The middle bourgeoisie and rich farmers consumed considerably larger quantities of animal products than was the average for the country. Most of the people living in unproductive and underdeveloped rural areas lived on bread, beans, and some fats; some had to leave the land because even such food was not available. The food situation was difficult for the unemployed, for those employed part-time, and for blue- and white-collar workers with several children.

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Yugoslav export "surpluses" were not surpluses at all, but food needed by the majority of the working people who could not afford it. The following table shows that there actually was no surplus for export in prewar Yugoslavia (1,000 tons):

	Gross [Annual] Average Production, 1934-1938	Net [Annual] Average Production, 1934-1938	[Annual] Require- ments, Based on Average European Consumption
Cereals:	8,144	4,668	2,040
Potatoes	1,498	826	1,905
Beans and other vegetables	1,449	1,000	1,695
Meat and fish	384	384	705
Eggs	44	44	105
Milk	2,200	1,680	1,680
Fats	135	101	225
Sugar	68	68	315 (1)

Postwar Food Problems

During the war, Yugoslav agriculture was unable to replace obsolete implements, and suffered tremendous losses in production capacity and manpower, resulting in a considerable reduction in productivity by the end of the war. (1) Low work productivity in agriculture is reflected in the relatively high number of persons employed, 114 per 100 hectares of arable land.

One of the obstacles hindering development of agricultural production is the small individual landholdings, which comprise about 70 percent of the arable area and 78 percent of the livestock area. Yugoslavia has over 2 million farms, 68.5 percent of which are 5 hectares in area; 21.3 percent, 5-10 hectares; and 9.2 percent, over 10 hectares.

Small-scale agricultural production, lack of mechanization, and low fertilization are reflected in low yields per hectare of arable land. (2)

The demand for food products began increasing after the liberation. Consumption of agricultural products in rural areas increased as a result of land reform and social liberation of the working people in rural areas. Food consumption in rural areas has been as follows:

	1930 - 1939		1947 - 1951	
	Total Annually (1,000 tons)	Per Capita Annually (kg)	Total Annually (1,000 tons)	Per Capita Annually (kg)
Cereals	2,570	227	2,485	224
Potatoes	601	53	678	61
Beans	61	5.4	63	6
Meat	212	18.7	216	19.4
Fats	61	5.4	65	5.9
Cheese	49	4.3	67	6

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	1930 - 1939		1947 - 1951	
	Total Annually (1,000 tons)	Per Capita Annually (kg)	Total Annually (1,000 tons)	Per Capita Annually (kg)
Milk	832	73	700	63
Eggs	28.5	2.5	32	2.9
Butter	7	0.62	6.4	0.58

Food consumption in urban areas has been as follows:

	1930 - 1939		1947 - 1951	
	Total Annually (1,000 tons)	Per Capita Annually (kg)	Total Annually (1,000 tons)	Per Capita Annually (kg)
Cereals	596	172	805	173
Potatoes	240	69	270	58
Beans	14	4	32	6.9
Meat	111	32	120	26
Fats	37	10.7	39	8.4
Cheese	26	7.5	19	4.1
Milk	279	81	179	39
Eggs	16.8	4.9	16	3.4
Butter	4	1.15	1.6	0.35

Exports have not been permitted to reach a level that would endanger the basic food supply of the population. Prewar and postwar exports of the more important foods have been as follows (1,000 tons):

	1935 - 1939 /Yearly Av?/	1939	1947 - 1951 /Yearly Av?/	1951
Cereals	557.5	309	245	84
Vegetables	26.2	16	7.7	7.8
Fruit	62.3	71	21.8	29.3
Meat	57	62.5	6.6	5
Fats	26.5	13.3	--	--
Eggs	13.7	15.5	1	0.5

Food has been one of Yugoslavia's most difficult problems in the postwar years. The food situation has been characterized by a growing disproportion between available food stocks and the rapidly increasing demand for them. (1) Shortages of cereals, fats, meat, and milk were especially critical in some years. The following table shows availability of foods from 1939 to 1950:

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<u>Food</u>	<u>Unit</u>	<u>1939</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>
Meat and fish	Tons	175,400	67,000	84,000	104,000	137,000
Rice	Tons	20,000	1,500	514	2,500	5,800
Fats	Tons	75,000	73,000	57,000	58,000	55,000
Sugar	Tons	79,000	87,800	112,700	93,400	83,000
Wine	1,000 liters	138,000	120,000	57,000	83,000	90,000
Beer	1,000 liters	42,000	66,000	107,000	100,000	114,000
Plum brandy	1,000 liters	42,000	27,000	8,500	12,000	14,000
Potatoes	Tons	297,000	185,000	341,000	415,000	245,000
Beans	Tons	26,400	27,000	31,800	36,900	31,000 (3)

In 1951, the following quantities of food supplies were available in Yugoslavia (in kilograms unless otherwise indicated):

<u>Food Supplies</u>	<u>Total (millions)</u>	<u>Quantity per Capita</u>
<u>Cereals</u>		
Wheat and rye flour, 90% milled	1,951	118
Corn flour	1,467	88
Total cereals available	3,419	206
<u>Vegetables</u>		
Potatoes	1,162	70
Beans	206	12.4
Cabbage	315	19
Onions	95	5.7
Tomatoes	166	10
Green peppers	84	5.1
Carrots	20	1.2
Peas	9	0.5
Other vegetables	689	41.5
<u>Fruit</u>		
Apples	176	10.6
Pears	105	6.4
Cherries	47	2.8
Apricots and peaches	32	2
Plums	1,151	69.3
Grapes	1,178	71
Prunes	14	8.4
<u>Meat, Fats, Milk, Sugar, Salt</u>		
Meat	323	19.5
Fats	167	10
Milk (liters)	1,879	113
Sugar	239	14.4
Cooking salt	123	7.4 (4)

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Food Prospects

Elimination of compulsory delivery of many agricultural products has greatly contributed to stimulating agricultural production and decreasing prices of agricultural products. The agricultural producer has an incentive to produce and sell more products to obtain money for industrial goods.(1)

II. THE YUGOSLAV FOOD INDUSTRY

The food industry in Yugoslavia includes the production of carbohydrate foodstuffs, such as sugar, starch, flour, etc.; the production of protein food products, such as meat, fish, cheese, milk, and yeast; the production of edible fats, such as lard, oil, and margarine; the processing of carbohydrates for spirits, beer, vinegar, candy, cookies, bread, paste products [macaroni, noodles, etc.]; processing of fats for technical oils, soap, solidified oil, etc.; the processing of flavoring extracts, condiments, and appetite stimulants, such as pepper, spices, sauces, etc.; the processing of natural vitamins; the production of alcoholic and nonalcoholic beverages; the processing of fruits and vegetables; the production of animal feed; and the production of by-products and auxiliary foods, such as flavoring extracts, pectin, pastry flour, and similar products.

Originally, the Yugoslav food industry consisted of sugar and starch plants, distilleries, yeast plants, breweries, fish canneries, and some vegetable and fruit canneries. With the increase in the urban population after World War I, the food industry came to include the production of oil, paste products, and cookies. Meanwhile, meat processing, fruit and vegetable canning, and confectionery production were expanded. The food industry was the most highly developed industry in Yugoslavia, both in invested capital and number of employees.

World War II needs led to the production of large quantities of processed articles, such as canned vegetables and meats, paste products, and crackers, and led to intensive development of the vegetable oil industry.

The postwar period demanded even greater output from the food industry to meet the needs of the guaranteed supply system.

The food industry has made greater progress than any other branch of industry in improving quality and variety since the new economic measures were introduced. Processed fruits, chocolate and candies and other chocolate products, alcoholic beverages, sugar, smoked meats, and other foods are furnished in varieties equal to prewar. Flour, grits, and paste products are not on the market in sufficient volume or variety.(5)

Raw Materials for the Food Industry

The chief sources of raw materials for the Yugoslav food industry are natural and semiprocessed agricultural animal and vegetable products.

Although Yugoslavia is rich in such raw materials, both in variety and in capacity, the volume of production is insufficient.(5)

On 15 January 1951, Yugoslavia had 901,000 horses, 4,459,000 cattle, 8,869,000 sheep, and 3,210,000 hogs.(6)

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In 1951 [probably the end of 1951], Yugoslavia had 1,095,247 horses, 4,928,996 cattle, 3,910,815 hogs, 10,273,084 sheep, and 17,110,307 chickens, ducks, turkeys, etc.(5)

On 15 January 1952, Yugoslavia had 1,102,498 horses, 4,820,682 cattle, 3,989,796 hogs, 10,518,084 sheep, and 20,356,356 chickens, ducks, turkeys, etc.(7)

On 30 June 1952, Yugoslavia had 977,000 horses, 4,882,000 cattle, 11,719,000 sheep, and 5,610,000 hogs.(6)

Before World War II, the salt-water fish catch was from 8,000 to 10,000 tons annually. Since the liberation, the catch has increased in some years to 20,000 tons. Ninety percent of the total catch are bluefish (sardines, mackerel, and tunny), the remainder being whitefish and fish taken in traps. The fresh-water fish catch in Slovenia, the Vojvodina, and Serbia totals 1,800 to 2,900 tons annually.

The crop yield has been as follows:

<u>Farm Crops</u>	1951 (tons)	1952* (1,000 tons)
Corn	4,032,700	--
Wheat	2,277,400	--
Rye	276,600	--
Barley	358,900	--
Oats	292,700	--
Rice	7,400	--
Millet	12,200	--
Buckwheat	1,600	--
<u>Industrial Crops</u>		
Hops	1,300	--
Castor beans	2,000	--
Chicory	16,000	--
Soya	4,300	--
Sunflowers	94,300	50.9
Sugar beets	1,936,600	512.2
Rape	8,400	--
Sesame	347	--
Peanuts	109	--
Poppy	2,900	--
Tobacco	27,800	4.8
<u>Vegetable Crops</u>		
Potatoes	1,621,300	1,136.0
Beans	187,400	50.0
Cabbage	314,900	167.2
Peppers	84,000	--
Tomatoes	168,100	79.9
Garlic and onions	118,100	--
Green beans	24,000	--
Peas	9,900	--
Melons and watermelons	251,700 (5)	-- (8)

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<u>Fruit</u>	1951 (100 kg)	1952 (1,000 tons)
Cherries	476,252	55.4
Apples	1,793,790	164.2
Plums	11,628,343	237.3
Pears	1,065,419	61.1
Walnuts	339,735	32.2
Sour cherries	242,682	-- (9)
Quince	119,171	--
Apricots	164,965	--
Peaches	166,222	--
Oranges and tangerines	1,863	--
Lemons	201	--
Olives	301,197	--
Figs	141,055	--
Grapes	11,874,883 (10)	652,530 (4)

* [Data for 1952 is incomplete as figures were given only for the most important items.]

The situation in the Yugoslav food industry is characterized by the following:

1. Of a total of 6,472,800 hectares of arable surface in Yugoslavia, only 316,800 hectares provide raw materials for the food industry.
2. Transportation facilities are poor in Yugoslavia, especially between food-surplus and food-deficit areas.
3. The production of milk, sugar beets, oleaginous plants, tobacco, and pork could be trebled in a short time, and agricultural products not yet utilized industrially could be put to such use.
4. The production of fruit and nonalcoholic juices and concentrates, frozen products, soda and other nonalcoholic beverages, margarine, vitamin concentrates, dehydrated soups, extracts, etc., could be expanded.
5. Utilization of food wastes, especially in the production of mixed and concentrated animal feed, is still in its infancy.
6. The number of consumers of industrial food products, such as factory-produced bread, dairy products, sugar, and meat products, is still very low.(5)

Location and Types of Yugoslav Food Industries

The Vojvodina, Posavina, Podravina, Pomoravlje, and several other areas produce the largest crops of corn, other cereals, and industrial crops such as sugar beets, hemp, sunflowers, and rape, and are therefore the natural locations for most Yugoslav food industries.

Some food industries such as breweries, paste products plants, bakeries, confectioneries, wine cellars, dairies, etc., are located in consumer centers.

Most large flour mills are located in grain-growing areas, but since the war there has been a tendency to build them in consumer centers, and to move some mills to grain-growing areas. The quantity and varieties of flour are fairly good, but still below prewar quality and varieties.(5)

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Of the 1,140 food industries in Yugoslavia, 657 are located in Serbia (215 in Serbia proper, and 442 in the Vojvodina), 246 in Croatia, 127 in Slovenia, 48 in Bosnia-Herzegovina, 41 in Macedonia, and 21 in Montenegro. [See appended map.] (11)

1. Sugar

Yugoslavia has eight beet-sugar works, located in Belgrade, Crvenka, Cuprija, Novi Vrbas, Zrenjanin, Belje, Osijek, and Zupanj. These works are superior to Czechoslovak, Polish, and some German ones, which have smaller capacities and do not combine sugar making and sugar refining. All Yugoslav sugar works have refineries which produce white sugar; each has a capacity of at least 1,500 tons daily, while some have a capacity of more than 2,400 tons daily.

To meet postwar demands for sugar, the area under sugar beet cultivation has been increased rapidly, but the average yield has decreased because 75 percent of the sugar beet producers are inexperienced, because of shortages of natural and artificial fertilizer, and because of insufficient draft animals and manpower. From 1930 to 1939, the average annual yield of sugar beets was 160-288 metric centners per hectare; in 1950, 86.4-192.8 metric centners per hectare; and in 1951, 350 metric centners per hectare.

The production of sugar beets and sugar has been as follows:

Year	Area Under Beets (ha)		Sugar Beet Yield		Processed Sugar Beets (carloads)	Sugar Produced (carloads)
	Seeded	Harvested	Kg per Ha	Carloads		
1939	47,131	46,106	20,000	92,277	--	10,760
1946	--	--	--	--	--	7,074
1947	--	--	--	--	122,355	15,200
1948	80,121	79,277	18,900	149,804	131,873	16,235
1949	89,946	89,455	12,240	109,526	80,282	10,149
1950	102,812	98,428	8,640	85,063	80,000	8,494
1951-52	101,310	100,450	19,280	193,663	176,922	20,977 (5)

2. Starch and Starch Products

The Yugoslav starch and starch products industry does not yet meet domestic demand, although production is increasing constantly.

Yugoslavia has eight starch plants, two of which produce starch preparations for their own enterprises, while the others produce starch for general consumption and for industry. Serbia has two plants with an annual [combined?] capacity of 8,100 tons of starch products, Croatia has four with an annual [combined?] capacity of 1,650 tons, Slovenia one with a capacity of 1,920 tons, and Macedonia one with a capacity of 125 tons. (5) The most important starch plant is located in Jabuka near Pancevo; other important starch plants are located in Subotica, Sisak, and Domzale. (11)

A large corn processing combine with an annual capacity of 70,000 tons of corn was under construction in 1952 in Zrenjanin. This will make it possible to meet domestic demand and supply some products for export. This combine will also produce large quantities of crystalline glucose. (5)

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3. Meat Processing

Meat processing plants in prewar Yugoslavia were unfavorably located; they were generally small in capacity, obsolete, and processed only pork in any quantities, yet were located far from the main hog-raising areas of the country. The main hog-raising and hog-fattening areas were in the eastern part of the country -- in the Backa, the Banat, Macva, Pomoravlje, Srem, Semberija, Banja Luka, and Velika Gorica -- while most of the plants were in the west -- in Ljubljana, Maribor, Murska Subota, Krizevci, Sesvete, Zapresic, Cakovac, Petrinja, Split, Rijeka, and Zagreb.

Important meat processing factories in the east are now located in Subotica, Zemun, Velika Plana, Mladenovac, Indjija, Svetozarevo, and Banatski Karlovac.(5)

For Yugoslavia as a whole, the meat industry is most widely developed in Serbia, Croatia, and Slovenia, with the main processing plants being located in Coka, Beli Manastir, Subotica, Sid, Belgrade, Svetozarevo, Zapresic, Petrinja, Cakovec, Celje, Ljubljana, Maribor, and Skoplje.(11)

In 1946, Yugoslav... processed 5,537 tons of meat; in 1947, 5,446 tons; in 1948, 21,347 tons; in 1949, 37,450 tons; and in 1951, 28,298 tons.

An increase in the production and consumption of meat is linked to an increase in the number and an improvement in the quality of livestock. Since livestock is not yet up to prewar livestock in quantity or quality, the full capacity of the meat-processing industry cannot be utilized. There has been a special lack of quality livestock for the production of bacon for the foreign market.

Canned meats are produced by the "Crvena zvezda" Plant in Kragujevac, the "Kulpin" Plant in Novi Sad, the "29 novembar" Smoked-Meat Plant in Subotica, the "Gavrilovic" Plant in Petrinja, the Coka and Belje state farms, and in small quantities by the Meat and Sausage Industrial School in Krizevac.

Meat canned in the plants is limited to pork and beef goulash, and pork and liver pates, except in the Gavrilovic Plant, which also cans fine baked hams in great demand on the foreign market, and other specialties.(5)

4. Fish Processing

Only salt-water fish are canned in Yugoslavia, sardines being the most important, followed by mackerel and tunny. Some "ukljeva" [a bony fish slightly larger than a sardine] is smoked in Montenegro, but Lake Ohrid's well-known trout is not canned. Large fish canneries in Yugoslavia are located in Rovinj, Banjole, Zadar, Split, Komiza, and Martinscica near Rijeka. Although some of these canneries are equipped to process fish waste, they do not utilize such equipment to the extent necessary or possible.

The following amounts of fish were canned in Yugoslavia: in 1946, 1,209 tons; in 1947, 3,293; in 1948, 3,182; in 1949, 4,328; in 1951, 3,800 (5); and in 1952, 4,500 tons.(11)

5. Dairy Products

The chief milk producing areas in Yugoslavia are the Sava and Drava river valleys in Slovenia, Medjumurje, Podravina, Croatian Posavina, Gorski Kotar, Baranja, Vojvodina, Pomoravlje, Semberija, and Macva. Sheep-raising areas producing considerable quantities of cheese include Macedonia, Bosnia, Montenegro, parts of Dalmatia (the islands and Zagora), and parts of Serbia.

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After World War II, the capacity of the dairy-products industry was increased considerably by expanding old plants and building new ones. With UNICEF aid, construction was begun on dairies in Belgrade, Zagreb, Ljubljana, Sarajevo, Skoplje, and Novi Sad, and on powdered milk plants in Osijek and Zupanj.

In 1950, the daily capacity of the Belgrade dairy was increased from 80,000 liters to 120,000 liters, and that of the Ljubljana dairy from 30,000 liters to 50,000 liters. A dairy with a daily capacity of 50,000 liters was opened in April 1952 in Novi Sad, while a dairy with a 120,000-liter daily capacity was opened in Zagreb in July. Dairies with a daily capacity of 50,000 liters each were under construction in Sarajevo and Skoplje; they were scheduled to be finished by the end of 1952. These dairies are intended primarily to process fresh milk, but are also equipped to produce milk products.

A powdered milk plant with a 35,000-liter daily capacity was put in operation in Osijek in 1951, while another with 20,000-liter capacity was put in operation in June 1952 in Zupanj. These plants are also equipped to produce cheese, butter, and casein.

With the completion of these dairy industry facilities, about 500,000 liters of milk will be processed daily, either as fresh milk or as powdered milk.

Construction has begun on 145 village collection stations of various types and capacities in the immediate vicinity of main central dairies. Twenty collection stations were finished early in 1952, and 80 were to be completed by the end of 1952. Their purpose is to chill and prepare milk collected for shipment to central dairies. These collection stations will be equipped chiefly with domestically produced machinery.

Yugoslavia does not have many milk processing plants. The most important are located in Veliki Zdenci, Belje, Staro Petrovo Selo, Djakovo, Bohinj, Bjelovar, and Zupanja.(5)

6. Yeast

The production and consumption of yeast in Yugoslavia has increased rapidly. Maximum yeast consumption before World War II totaled 30 carloads monthly; it is now between 54 and 65 carloads, while potential consumption is even greater.

Baker's yeast in Yugoslavia is produced solely from molasses. Yeast plants are located in areas where wheat is a major item of consumption. In southern areas where corn is a major item of consumption, the demand for yeast is confined primarily to the cities. The main baker's yeast plants are located near distilling plants in Savski Marof, Sisak, Kreka, Belgrade, and Ljubljana; smaller plants are located in places consuming large quantities of yeast, such as Svetozarevo, Menges, etc. Plant capacity is sufficient to cover domestic needs, and to produce for export. Yeast production since the war has totaled 7,500-8,000 tons annually.(5)

7. Oil

There are a number of local works producing olive oil in Dalmatia, the Primorje, and Istria, and works processing sunflower seeds, pumpkin seeds, aniseed, and sesame in Croatia, Slavonia, the Vojvodina, and Macedonia. Yugoslavia's large and modern factories producing edible oils are in Zagreb, Brcko, Glina, Novi Vrbas, Zrenjanin, Urosevac, Ljubljana, Medvodje, Skoplje, Titov Veles, Bakar, Zadar, Omis, Dubrovnik, Bar, and Kotor. Most of these large factories also have extractors for obtaining residue oils, and oil from such plants as corn and soya. Most extractors are powered by gasoline.(5)

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Yugoslavia's edible oil factories are distributed among the republics as follows: In Serbia, the main factories are located in Novi Vrbas, Zrenjanin, and Urosevac, areas where sunflower seed production is most extensive. In Croatia, a large factory in Zagreb and smaller factories in Osijek, Daruvar, Podravska Slatina, and Varazdin process sunflower seeds, pumpkin seeds, and cereals, while factories in Zadar, Bakar, and Dubrovnik process olives. In Slovenia, factories in Vir, Domzale, Slovenska Bistrica, Ljubljana, Britof, and Kranj process linseed and castor beans. Macedonia has an edible oil factory in Veles. In Montenegro, factories in Kotor and Bar process olives.(11)

Yugoslavia produces only about half the oleaginous plants it needs to keep its factories operating at capacity. The average yield of sunflower seed, which is the principal raw material used, is only 900-1,000 kilograms per hectare. The yields of other oil crops (rape, sesame, castor, and soya) are below the world average. By expanding the production of plants with higher fat content, such as poppy seed, pumpkin seed, and rape seed, the area under sunflowers could be reduced.

In 1939, Yugoslavia produced 24,626 tons of vegetable oils (edible and industrial); in 1946, 18,292 tons; in 1947, 24,996 tons; in 1948, 41,505 tons; in 1949, 28,193 tons; in 1950, 29,010 tons; and in 1951, 23,869 tons.(5)

8. Spirits

Ethyl alcohol in Yugoslavia is produced from molasses and from corn. The annual production of molasses totals 40,000-55,000 tons, or 13,400,000-18,500,000 liters of pure molasses. Of this output, 9,000-10,000 tons are reserves for making baker's yeast. Corn is processed in small agricultural distilleries, whose daily capacity is 2,000 liters of alcohol each, or a total annual capacity of about 15 million liters of 90 percent alcohol.

Yugoslavia's largest industrial refineries and distilleries are located in Ljubljana, Savski Marof, Sisak, Zagreb, Kreka, Belgrade, Crvenka, and Zrenjanin. Large agricultural distilleries are located in Sesvete, Zrenjanin, Novi Knezevac, and Brcko. Yugoslavia has 36 small agricultural distilleries, located mostly in Croatia and Serbia. Some of the agricultural distilleries are equipped to process other raw materials, such as potatoes and sugar beets, but these materials are not processed often because there are insufficient quantities of them. Several distilleries are equipped to produce pure alcohol.

In 1939, Yugoslavia produced 20,631,000 hectoliters of spirits; in 1946, 7,344,000; in 1947, 11,748,000; in 1948, 15,610,000; in 1949, 16,420,000; in 1950, 10,130,000; and in 1951, 13,094,000.

Prewar production has not been reached because large estates before the war concentrated on processing corn into spirits, thus obtaining corn mash for fodder instead of utilizing the corn for other purposes.(5)

9. Beer

Beer consumption in Yugoslavia is only 8 liters per person annually. Yugoslavia grows high-quality hops in Zalec Slovenia and Backi Petrovac. Zalec hops are considered to be among the most aromatic in the world. Barley grown in the fertile areas of Yugoslavia is perfectly suited for making light Pilsener beer, while winter varieties of barley grown in Macedonia can be used in making beer because of their low protein content.

Yugoslav breweries are modeled on Czech breweries and produce a light Pilsener beer. Yugoslavia has a total of 29 breweries; they are well equipped and are located favorably in beer consumption centers: Ljubljana, Lasko,

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Maribor, Zagreb, Karlovac, Sisak, Daruvar, Osijek, Belgrade (two), Pancevo, Apatin, Cib, Stari Becej, Zrenjanin, Vrsac, Sremska Mitrovica, Zajecar, Srbo-
bran, Nis, Svetozarevo, Cacak, Leskovac, Valjevo, Tuzla, Sarajevo, Banja Luka,
Skoplje, and Niksic. Some of these are quite large, while others are very
small. Yugoslavia also has several small enterprises producing malt.

In 1939, Yugoslavia produced 427,000 hectoliters of beer; in 1944,
574,000; in 1947, 682,000; in 1948, 1,187,000; in 1949, 1,219,000; in 1950,
1,144,000; and in 1951, 1,214,000. The main reason for the decrease in beer
production in 1950 was that breweries were unable to obtain sufficient quan-
tities of barley and hops.

Very few Yugoslav breweries utilize beer by-products. Malt residue
is sold as fodder, but is generally not dried. Other by-products are usually
thrown away, but some large breweries, such as the one in Zagreb, have re-
cently started to produce proteolytic enzymes utilized in the leather industry
and in dietetic preparations.

Almost all Yugoslav breweries are out of date and their capacity can-
not meet demand.

The quality of Yugoslav beer is improving, but is not yet up to pre-
war quality or strength. Poor-quality beer results from using feed barley and
corn instead of beer barley, and releasing beer for consumption after 20 days
instead of maturing it for 50 days.(5)

10. Vinegar

Except for some vinegar produced by dry distillation of wood, all Yu-
goslav vinegar is produced by fermentation of alcohol. Most of Yugoslavia's
16 vinegar plants are equipped with German semiautomatic or automatic instal-
lations, and all plants are located in consumption centers. The largest Yugo-
slav vinegar plant is located in Sesvete, near Zagreb. Small plants in Slo-
venia and the coastal areas produce vinegar from wine which is very highly
valued for its special taste and fine aroma.(5)

11. Cookies

Yugoslavia has only a few bakeries which produce extensive assortments
of cookies. Most Yugoslav bakeries are small shops producing only one or two
kinds. The largest producer of cookies is the "Josip Kras" [Chocolate, Bonbon,
and Cookie] Plant in Zagreb, which makes about 15 kinds of cookies, followed by
the "Sloboda" Bakery in Osijek, which produces six kinds, the "Koestlin" Bakery
in Bjelovar, and the "Danubius" Bakery in Novi Sad. The remaining shops mostly
produce locally popular cookies. At present the production of cookies meets
demand.(5)

12. Paste Products

Paste products are produced in Yugoslavia mainly in local plants of
small capacity; these plants are unable to meet demand. They are located in
the largest consumption centers: in Maribor, Rijeka, Zadar, Split, Sibenik,
Dubrovnik, Pancevo, Pancevacki Rit, Zemun, and Skoplje.

In 1946, Yugoslavia produced 17,944 tons of paste products; in 1947,
21,687; in 1948, 20,449; in 1949, 21,652; and in 1951, 10,282.

Although Yugoslav paste products are not up to par in quality, they
find a ready market because they are the only paste products available.(5)

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13. Pepper

Ground pepper is important to Yugoslavia as an export item. Pepper is grown mostly in Hogros, Martonos, and Knezevo srezes, and on the Belje State Farm. The pepper industry began to develop in Djevdjelija and Skoplje in Macedonia after the liberation. The quality of pepper obtained is very good, and its production has expanded rapidly.(5)

14. Fruit and Vegetable Processing

The fruit and vegetable processing industry has been expanded considerably since the liberation, although there were well-known enterprises in Kragujevac and Novi Sad which canned fruits and vegetables before the war.

The best-known plants for processing fruits and vegetables are located in Vipava, Ljubljana, Celje, Varazdin, Koprivnica, Zadar, Opuzen, Belje, Subotica, Novi Sad, Kragujevac, Cacak, Valjevo, Sabac, Kosovska Mitrovica, Uzicka Pozega, Kijevo, Skoplje, Bitolj, Gorazde, Dobo, Mostar, and Banja Luka. Yugoslavia also has many small enterprises with considerable output which supply chiefly the local market and utilize local raw materials. Yugoslavia has many fruit- and vegetable-pulp stations which are connected with processing plants or are enterprises of large export firms, such as the "Boonaplod" and "Voce" enterprises for the export of agricultural products. Farm work co-operatives in fruit-growing areas, such as Donja Stubica and Smederevo, have built stations which work directly for export enterprises. The production of high-quality fruit pulp is on a rather high level in Yugoslavia, so that it is in great demand abroad, especially when it is produced from improved varieties of fruit.

Large quantities of apple and pear cider produced from poorer grades and varieties of fruit are produced in the villages, as are fruit vinegar, prunes, and dried mushrooms.

Although Yugoslavia is rich in fruit, usually only apples, plums, and grapes are processed industrially.

a. Plums

The best known and most extensively processed of Yugoslav fruits is the plum. This fruit is unique in quality and aroma, but the best method of processing has not yet been discovered. The blue-plum area lies chiefly south of the Danube and Sava rivers in Bosanska Krajina, Bosanska Posavina, Macva, Pomoravlje, and the Ibar valley.

b. Apples

Although apples are grown throughout Yugoslavia, they are grown most extensively in the valleys of the Drava, Sava, Kupa, OrLjava, Sutla, Bosna, Spreca, Ibar, and Gornja Morava rivers, and around Tetovo.

c. Grapes

Only small quantities of grapes are processed industrially in Yugoslavia, although the annual yield totals 40,000-50,000 tons. Far greater yields are expected in the future, with the introduction of modern methods and better varieties of grapes. Yugoslav table and wine grapes are excellent, and can be compared with the best Italian and Greek varieties.

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d. Other Fruits

Yugoslavia abounds in wild fruits, such as strawberries, blackberries, raspberries, cranberries, pomegranates, and similar fruits, but only small amounts of them are processed.

The production of cherries, sour cherries, pears, quinces, peaches, apricots, cultivated strawberries, gooseberries, and figs totals 100,000-140,000 tons annually. Most of these fruits are consumed domestically; only small amounts of early fruits are exported.

Although production of vegetables in Yugoslavia is extensively developed, only tomatoes are in high demand on the foreign market.

The quality of fruit products is rather good, with no great variations among individual producers. All enterprises process fruit products according to Yugoslav standards.(5)

Inspection and Control of Food Products

The 1937 law on food for general consumption is still in effect in Yugoslavia. Already obsolete in some respects, the law has been supplemented, with health establishments taking part in the drafting of supplements.

Health establishments supervise a network of state laboratories, which test the quality of food products. Such laboratories are located in Zagreb, Belgrade, Rijeka, Split, Dubrovnik, Zadar, Sarajevo, Osijek, Novi Sad, Krusevac, Nis, Horgos, and Skoplje. Food products are also tested in factory laboratories and central laboratories usually connected with republic management offices of the food industry. In universities, food products and their processing are studied by bromatology departments of the faculties of pharmacy in Belgrade and Zagreb, and by chemistry departments connected with technical faculties in Ljubljana, Zagreb, and Belgrade.(5)

Organization of the Food Industry

In 1945 - 1946, food enterprises were classified as being of local, republic, or federal significance. Sugar refineries, large edible oil factories, export wineries, and tobacco plants became federal enterprises directed by federal administrations. Other food enterprises were put under the management of the republic or people's councils, and were classified republic or local industries, depending on the degree of their development. The following federal administrations were established: the Federal Main Administration for the Vegetable Oil Industry, the Federal Main Administration for Wine, and the Federal Main Administration for Tobacco. A number of main republic administrations were established in the republics, depending on the type and number of republic enterprises.

At the end of 1947, federal and republic main administrations were reorganized, and the management of many enterprises turned over to lower-ranking state administrative agencies. The Federal General Directorate of the Food Industry and the Federal General Directorate of the Tobacco Industry were established and put under the direction of the Federal Ministry of Light Industry. Similar reorganizations took place in the republics. Main administrations were merged into main republic directorates, which embraced the most important enterprises of the food industry except for flour mills and for a time meat, fruit, and vegetable processing, which were placed under the Ministry of Trade and Supply.

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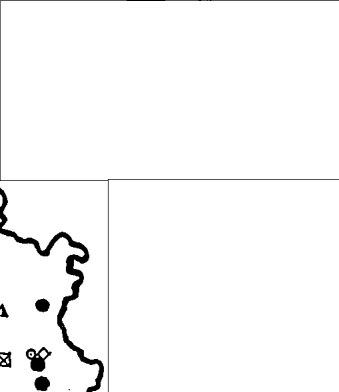
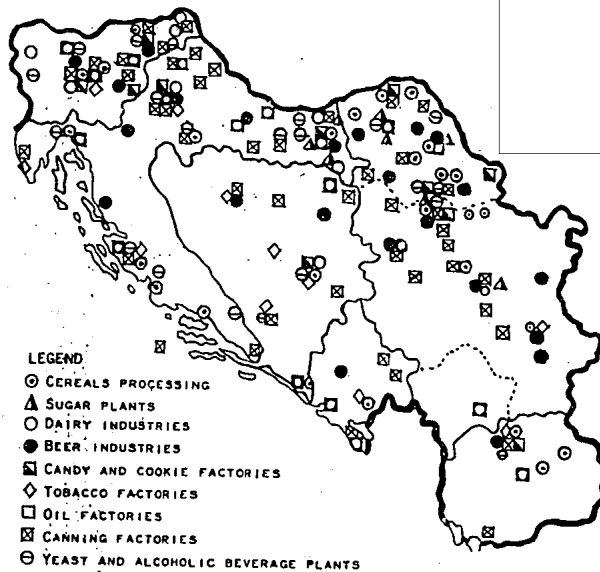
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When the Federal Ministry of Light Industry was abolished and the Council for Industry established, federal general directorates were abolished and the republics took over the management of the food industry, including flour mills and fruit, meat, and vegetable processing plants.

The republics now manage the food industry through the Main Directorate of the Food Industry in Ljubljana, Main Directorate of the Food Industry in Zagreb, Main Directorate of the Fish Industry in Zagreb, Main Directorate of the Food Industry of Serbia in Belgrade, Main Directorate of the Food Industry of the Vojvodina in Novi Sad, Main Directorate of the Food Industry of Bosnia-Herzegovina in Sarajevo, and Main Directorate of the Food Industry of Macedonia in Skoplje. In Montenegro, the Council for Industry manages the food industry directly. (5)



DISTRIBUTION OF THE FOOD INDUSTRY



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- LEGEND
- CEREALS PROCESSING
 - △ SUGAR PLANTS
 - DAIRY INDUSTRIES
 - BEER INDUSTRIES
 - ⊠ CANDY AND COOKIE FACTORIES
 - ◇ TOBACCO FACTORIES
 - OIL FACTORIES
 - ⊞ CANNING FACTORIES
 - ⊖ YEAST AND ALCOHOLIC BEVERAGE PLANTS

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