

Vegetables

The Families

The plant families from which vegetables have been developed are listed below, with notes on what parts of the plant are naturally or have been developed to be edible. As will be seen, the Chinese have been particularly innovative and clever in developing, by selection, different vegetables from the same plant. Europeans have been much less creative /or just had less time 😊/, only beet and the common cabbage having been developed into several distinct vegetables.

Amaryllidaceae /Old: *Alliaceae*, *Liliaceae* /

Onions, garlic, leeks and chives belong to this family. In most cases it is their bulbs which are eaten, but in leeks and spring onions the elongated leaf bases are also edible, and the Chinese eat the blanched flowering stems of both garlic and Chinese chives. The characteristic onion and garlic smells are caused by alkyl-sulphides which are found throughout the genus *Allium* and in other genera of the *Alliaceae* such as *Tulbaghia*.

Amaranthaceae /Old: *Chenopodiaceae*/

Spinach and **leaf beet** are the most common green vegetables in this family. Beet has also been developed as **sugar beet** and **beetroot**, in which the edible part is the swollen base of the stem. Many of these leaf vegetables, particularly **spinach**, are very high in vitamins and minerals such as iron, and should be cooked so that the water is absorbed, not thrown away.

Asteraceae /Old: *Compositae* /

The daisy family contains such widely different vegetables as the Jerusalem artichoke, with its potatolike tubers, the **Globe artichoke** with its edible thistle-like flower heads, the **chicory** with its blanched leaves and the **lettuce**. The Chinese, ever ingenious, have developed celtuce or asparagus lettuce, with a thickened edible stem, and in France dandelions are grown for salad, looking not unlike the weed though leafier and tasting less bitter. **Sunflowers** are grown for their large, edible seeds. The tubers of **Jerusalem artichoke** (and those of the rare Andean vegetable yacon), contain inulin, rather than the commoner starch or sugar, and are suitable for diabetics, or as a substitute for potatoes.

Brassicaceae /Old: *Cruciferae*/

The cabbage family contains a great range of vegetables, developed in both Europe and China. In most it is the leaves (**cabbage**), flowering stems (**cauliflower**) or swollen roots (**radish**) which are eaten, but there is a radish with edible fruits in central Asia. In Europe, **rape** is grown for the oil in its seeds, and the same species has been developed into the turnip, but in China it has also been developed into different leafy vegetables.

Cucurbitaceae

Marrows, courgettes and **cucumbers** belong to this family. Most of the species are tropical American and it is the fruits that are eaten, often when immature and including the seeds. The large flowers of the marrows are edible though insubstantial. In other tropical species such as the Oyster nut, *Telfairia pedata*, the seeds are the main edible portion of the plant, and some varieties of **water melon** are grown primarily for their huskless seeds.

Poaceae /Old: *Graminae* /

The grass family contains the staple crops of all the advanced civilizations: **wheat, maize** and **rice**. Few, however, are eaten fresh as vegetables, except for the different varieties of **sweetcorn**. The swollen leaf bases of two other grasses are eaten in eastern Asia. **Lemon grass**, *Cymbopogon citratus*, is chopped finely and used as a flavouring, and *Zizania aquatica*, the **wild rice**, is eaten when its leaf bases are swollen due to infection by a fungus. **Bamboo** shoots are also commonly eaten in China, not only the young shoots of the giant tropical *Dendrocalamus latiflorus*, but also the thinner shoots of the temperate *Phyllostachys*.

Lamiaceae /Old: *Labiatae* /

Rich though it is in species of herbs used for flavouring, such as **thyme**, **mint**, **sage** and **oregano**, the family *Labiatae* has produced few vegetables. Edible tuberous roots are found in species of Woundwort i.e. *Stachys affinis*, the Chinese artichoke, and in the African genus *Plectranthus*.

Fabaceae / Old: *Leguminosae* /

Most of the edible legumes produce pods of large seeds, which may be poisonous until cooked. In several species, such as **snowpeas** and **French beans**, the young pods are edible, and in China, **peas** and **alfalfa** are also grown for their young leafy shoots. A few species also produce edible root tubers -most common being the North American *Apios tuberosa* and the Mexican jicama, *Pachyrrhizus erosus*, which has a root like a turnip. The use of sprouting beans and peas is traditional in China, and the sprouts contain large quantities of vitamins not present in the dried seeds. Sprouts are edible both raw or quickly cooked, whereas many beans must be boiled until well cooked to break down poisonous alkaloids in the dry bean.

Solanaceae

The nightshade family produces a very valuable range of vegetables, almost all developed in Central and South America. **Potatoes, tomatoes** and **peppers** were all unknown in Europe and Asia until the Spaniards brought seeds back from Mexico and Columbia in the late fifteenth century (1493, Chanca). Even then many were at first viewed with considerable suspicion, as the European members of the family were mostly extremely poisonous. The only edible *Solanum* which originated outside America was the **aubergine (eggplant)**, thought to be a native of India. Potatoes, even when boiled, are very rich in vitamins, especially vitamin C and niacin.

Apiaceae / Old: *Umbelliferae*/

The carrot family has been developed to produce edible roots, fleshy leafstalks as in **celery** and **Florence fennel** and a swollen stem base in **celeriac**. Both **parsley** and a *leaf variety* of **celery** provide edible and aromatic leaves for salads. **Carrots** are a traditional and very rich source of vitamin A (carotene).

Lesser families The following families have provided only one or two vegetables each, and most are grown in small quantities only. The most important are the *Araceae*, *Convolvulaceae* and *Dioscoriaceae* which produce Taro, Sweet potatoes and Yams, tubers which are widely grown in the tropics.

Aizoaceae - New Zealand spinach

Amaranthaceae - Chinese spinach, Pigweed

Araceae - Taro,

Convolvulaceae - Sweet potato, Water spinach

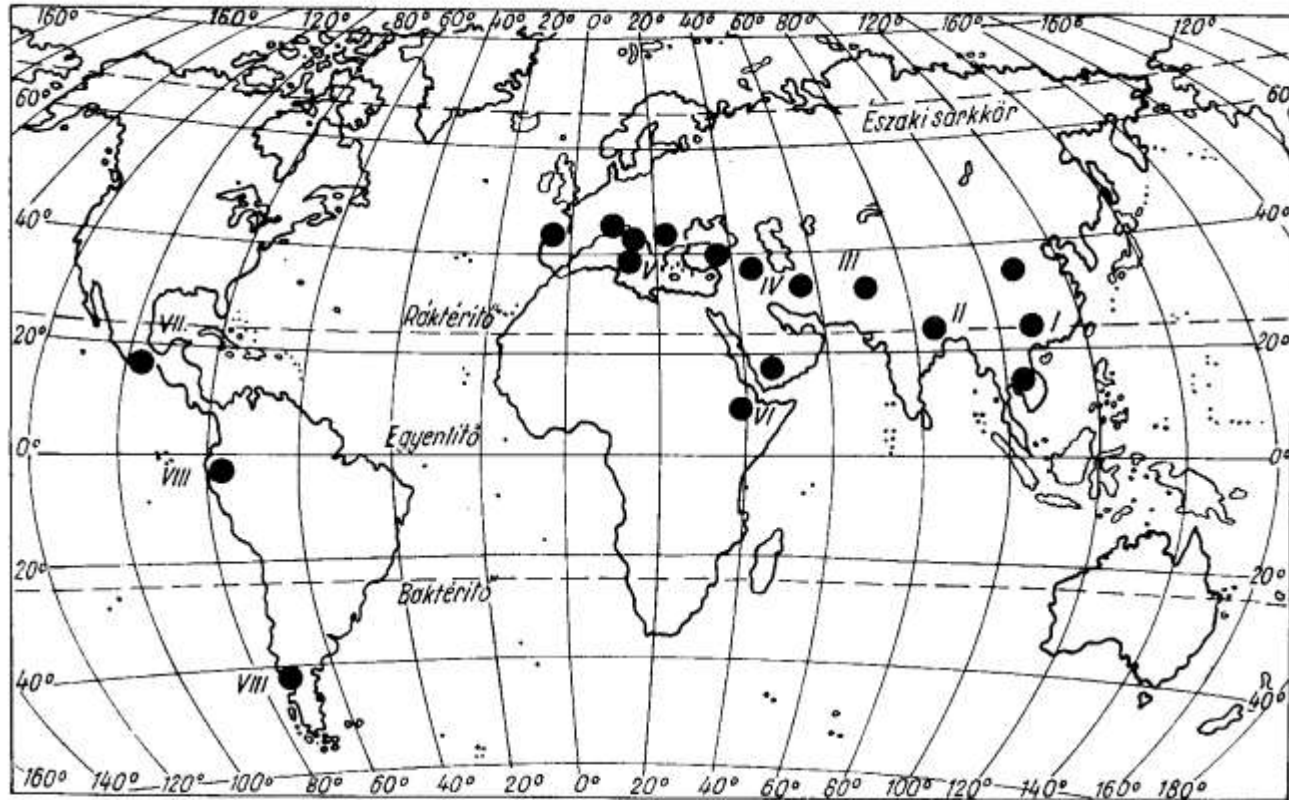
Dioscoriaceae - Yams

Malvaceae - Okra, Mallow

Nymphaeaceae - Lotus root

Valerianaceae - Lamb's lettuce

Zingiberaceae - Ginger, Turmeric



I. ábra. A zöldségvények származási övezetei VAVILOV nyomán

I. Kínai övezet (tojásgyümölcs, uborka, retek). II. Indiai övezet (tojásgyümölcs, uborka, sütőtök). III. Közép-ázsiai övezet (lóbab, hagyma, sárgarépa, sárgadinnye, spenót). IV. Nyugat-ázsiai övezet (lóbab, sütőtök, sárgarépa, saláta, petrezselyem). V. Földközi-tengeri övezet (cékla, káposztafélék, petrezselyem, sárgarépa, pasztinák, zeller, saláta, cikória, spárga, feketegyökér, sóska, fokhagyma, póréhagyma, vöröshagyma, borsó). VI. Abessziniai övezet (borsó, görögdinnye). VII. Dél-mexikói övezet (bokor- és karósbab, kukorica, paprika, paradicsom). VIII. Dél-amerikai övezet (paradicsom, burgonya, kukorica) (CHROBOCEK 1957)

The origin of vegetables

Vegetable production in the World in 2009.

<http://faostat.fao.org/site/339/default.aspx>

	Area Harvested (Ha)	Production (tonnes)
Africa	6,100,174 (2)	64,137,609
Americas	3,953,351	81,616,504 (3)
Asia	40,230,828 (1)	695,200,994 (1)
Europe	4,294,713 (3)	96,745,596 (2)
Oceania (AU, NZ...)	159,664	3,448,201
World: Vegetables&Melons, Total + (Total)	54,738,730	941,148,905

Item	Area Harvested (Ha)		Production (tonnes)		Yield (t/Ha)
Cabbages and other brassicas	3,229,146	(6)	71,342,347	(5)	22.0932
Carrots and turnips	1,211,573		28,028,042	(10)	23.1335
Chillies and peppers, dry	1,832,471	(10)	2,959,283		1.6149
Chillies and peppers, green	1,879,078	(9)	28,483,822	(9)	15.1583
Cucumbers and gherkins	2,699,920	(7)	39,320,705	(7)	14.5636
Eggplants (aubergines)	1,974,920	(8)	35,326,379	(8)	17.8874
Onions, dry	3,691,855	(5)	72,313,493	(4)	19.5873
Sweet potatoes	8,510,621	(1)	107,642,391	(2)	12.6480
Tomatoes	4,980,424	(3)	141,400,629	(1)	28.3912
Watermelons	3,810,535	(4)	100,687,056	(3)	26.4233
Yams	5,035,358	(2)	54,098,112	(6)	10.7436

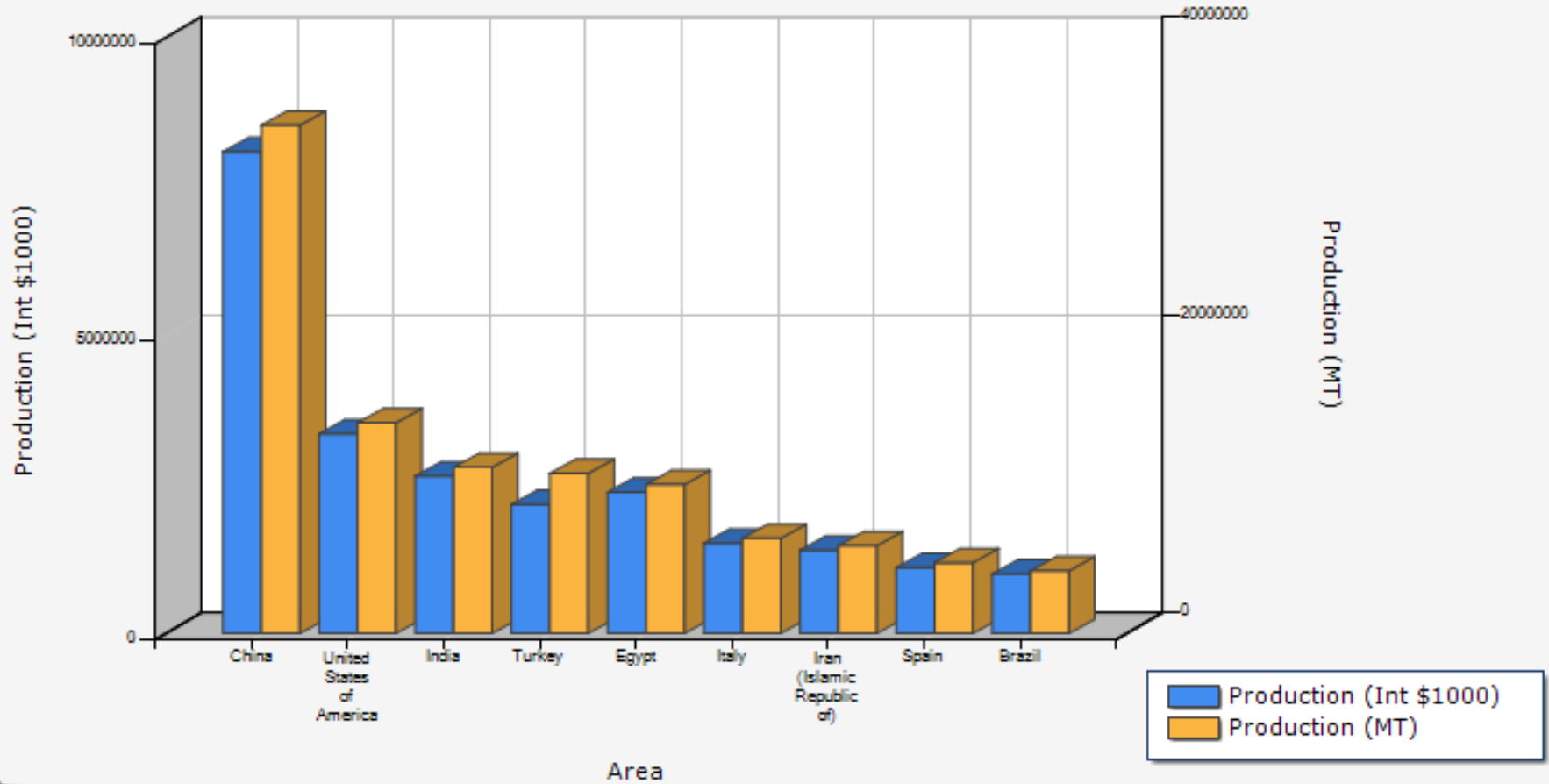
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Tomato
(*Solanum lycopersicum*)

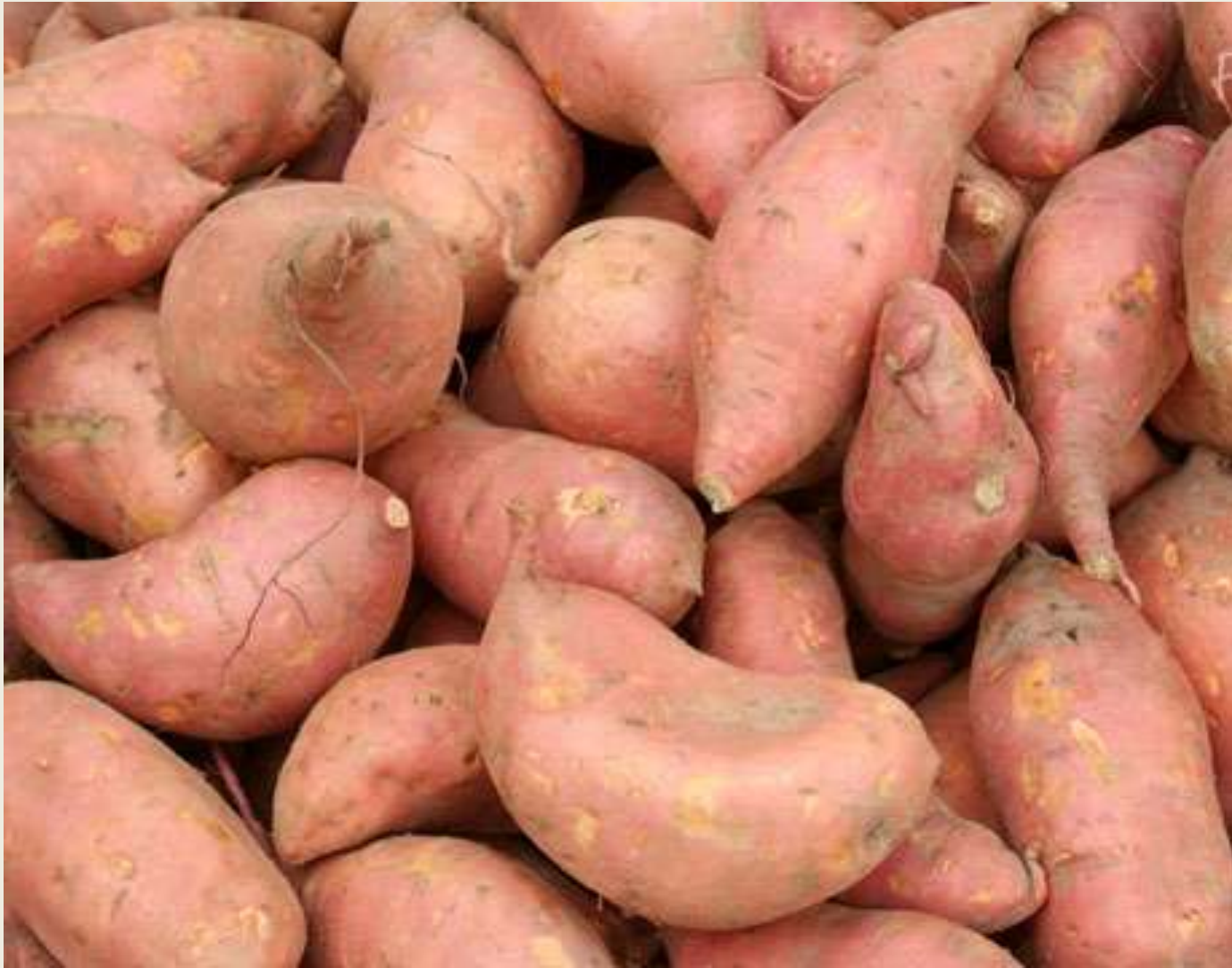
/Paradicsom /

Top production - Tomatoes - 2009



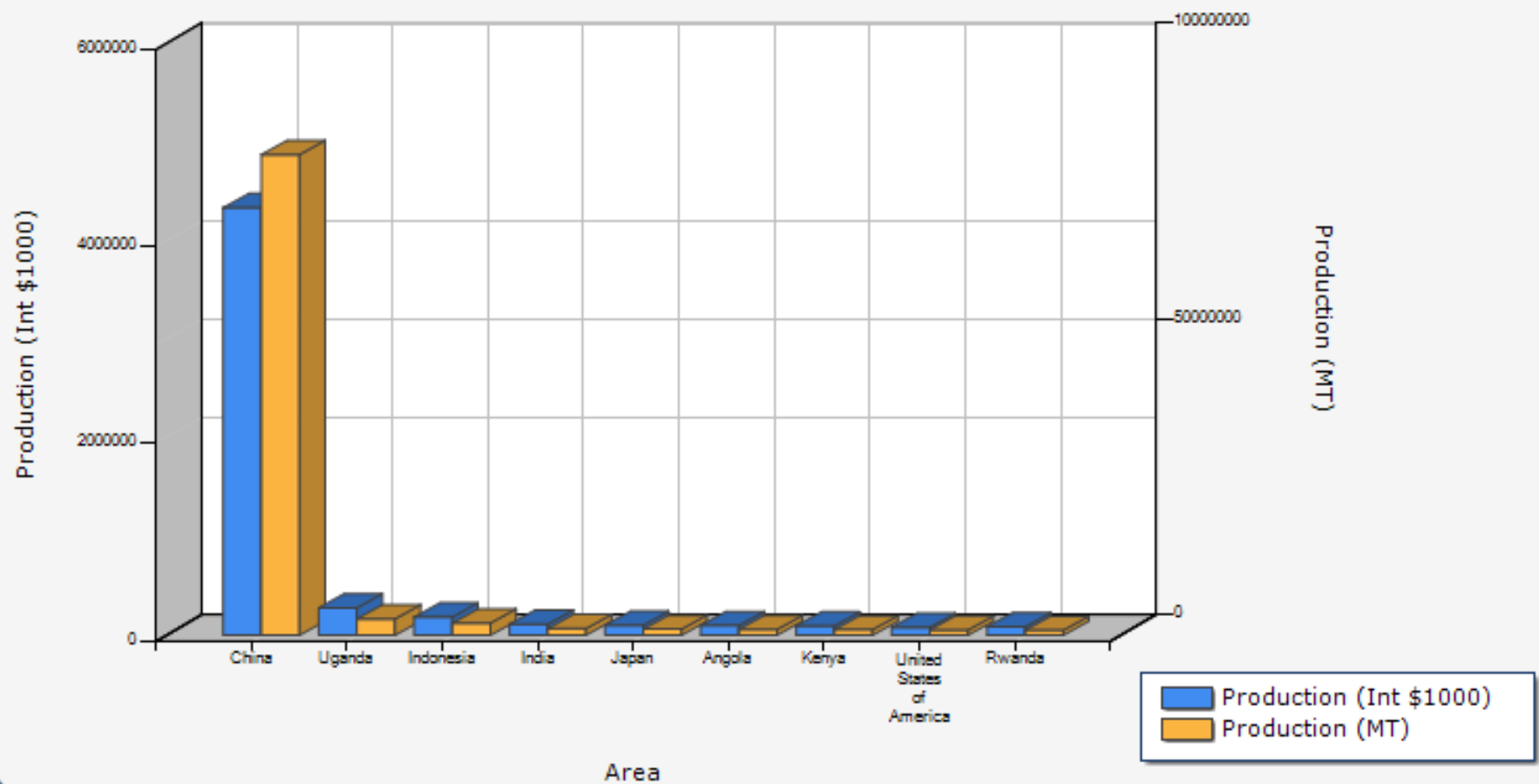
Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	8084061	*	34120040
2	United States of America	3350628	*	14141850
3	India	2641532	*	11149000
4	Turkey	2164053	*	10745572
5	Egypt	2369300	*	10000000
6	Italy	1512253	*	6382700
7	Iran (Islamic Republic of)	1394976	*	5887714
8	Spain	1101534	*	4749200
9	Brazil	996204	*	4204638
10	Russian Federation	514230	*	2170390
11	Uzbekistan	499922	*	2110000
12	Ukraine	483526	*	2040800
13	Greece	319855	*	1350000
14	Portugal	319074	*	1346702
15	Morocco	308009	*	1300000
16	Tunisia	284316	*	1200000
17	Syrian Arab Republic	276168	*	1165611
18	Iraq	216433	*	913493
19	Indonesia	196634	*	829927
20	Romania	179023	*	755596

Tomatoes



Sweet potato (*Ipomoea batatas*)
/Édes burgonya/

Top production - Sweet potatoes - 2009



Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	4333856	*	81212926
2	Uganda	277955	*	2766000
3	Indonesia	183664	*	2057913
4	India	112548	*	1120000
5	Japan	100810	*	1026000
6	Angola	98740	*	982588
7	Kenya	93534	*	930784
8	United States of America	79598	*	883099
9	Rwanda	85416	*	850000
10	Philippines	57279	*	600000
11	Cuba	39531	*	437100
12	Egypt	26629	*	265000
13	Ethiopia	26414	*	262854
14	Peru	23030	*	260761
15	Cameroon	19696	*	200000
16	Paraguay	16341	*	173000
17	Zambia	10049	*	100000
18	South Africa	5998	*	62688
19	Sri Lanka	3562	*	47270
20	Australia	4052	*	42460

Sweet potatoe

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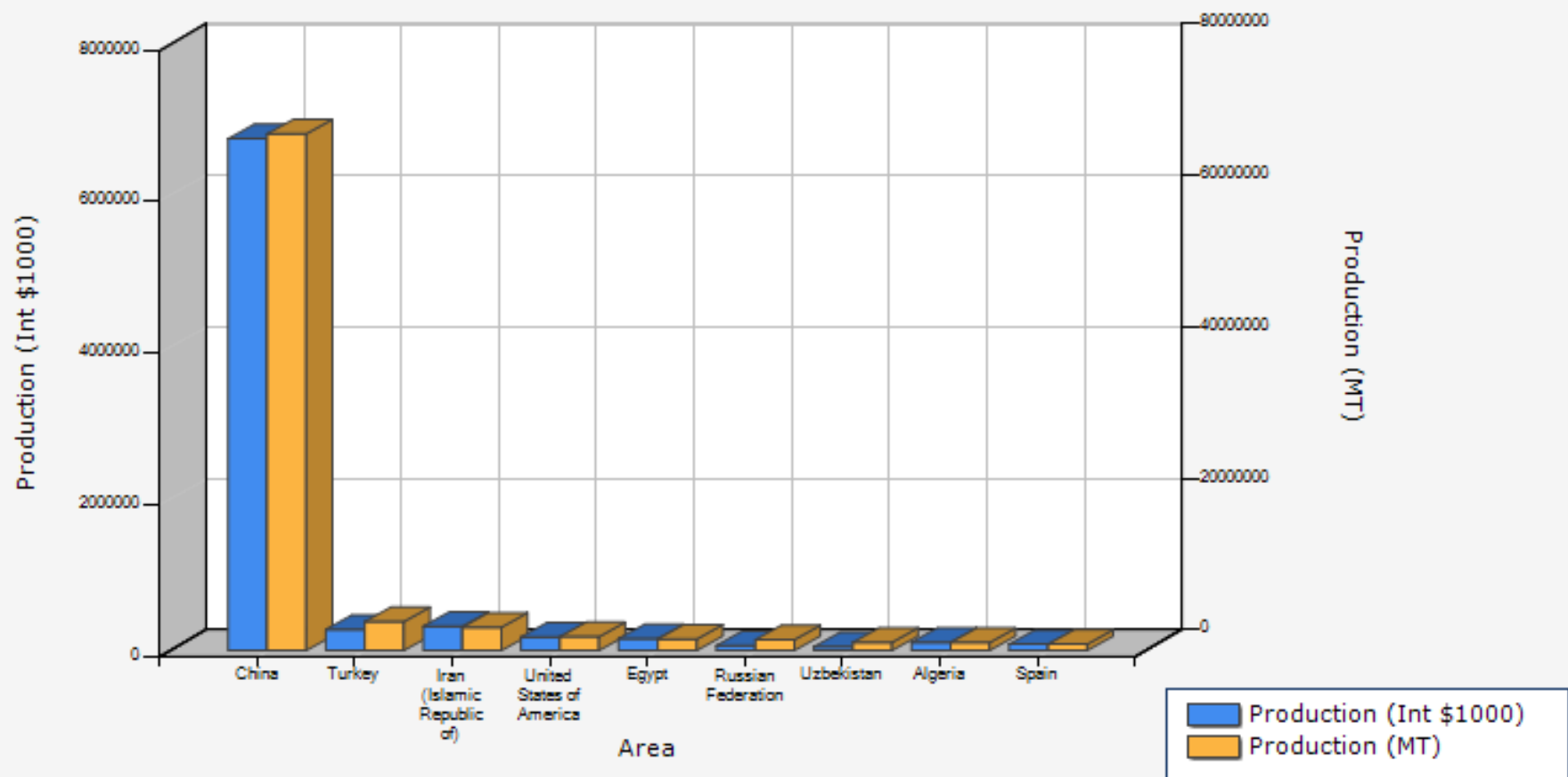


Citrullus lanatus (Thunb.) Momf. var. *colifer* (Schrad.) Momf. — Görögdinnye

Watermelon (*Citrullus lanatus*)

Görögdinnye

Top production - Watermelons - 2009



Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	6756166	*	68203275
2	Turkey	277905	*	3810205
3	Iran (Islamic Republic of)	320586	*	3074581
4	United States of America	177772	*	1819890
5	Egypt	156405	*	1500000
6	Russian Federation	65067	*	1419030
7	Uzbekistan	48448	*	1071000
8	Algeria	107890	*	1034722
9	Spain	81786	*	826700
10	Syrian Arab Republic	74246	*	749695
11	Greece	66211	*	660000
12	Morocco	67775	*	650000
13	Kazakhstan	59547	*	641000
14	Romania	39356	*	602813
15	Ukraine	24473	*	531000
16	Indonesia	47079	*	451519
17	Italy	31413	*	450000
18	Azerbaijan	41350	*	410803
19	Japan	40143	*	385000
20	Iraq	34069	*	326742

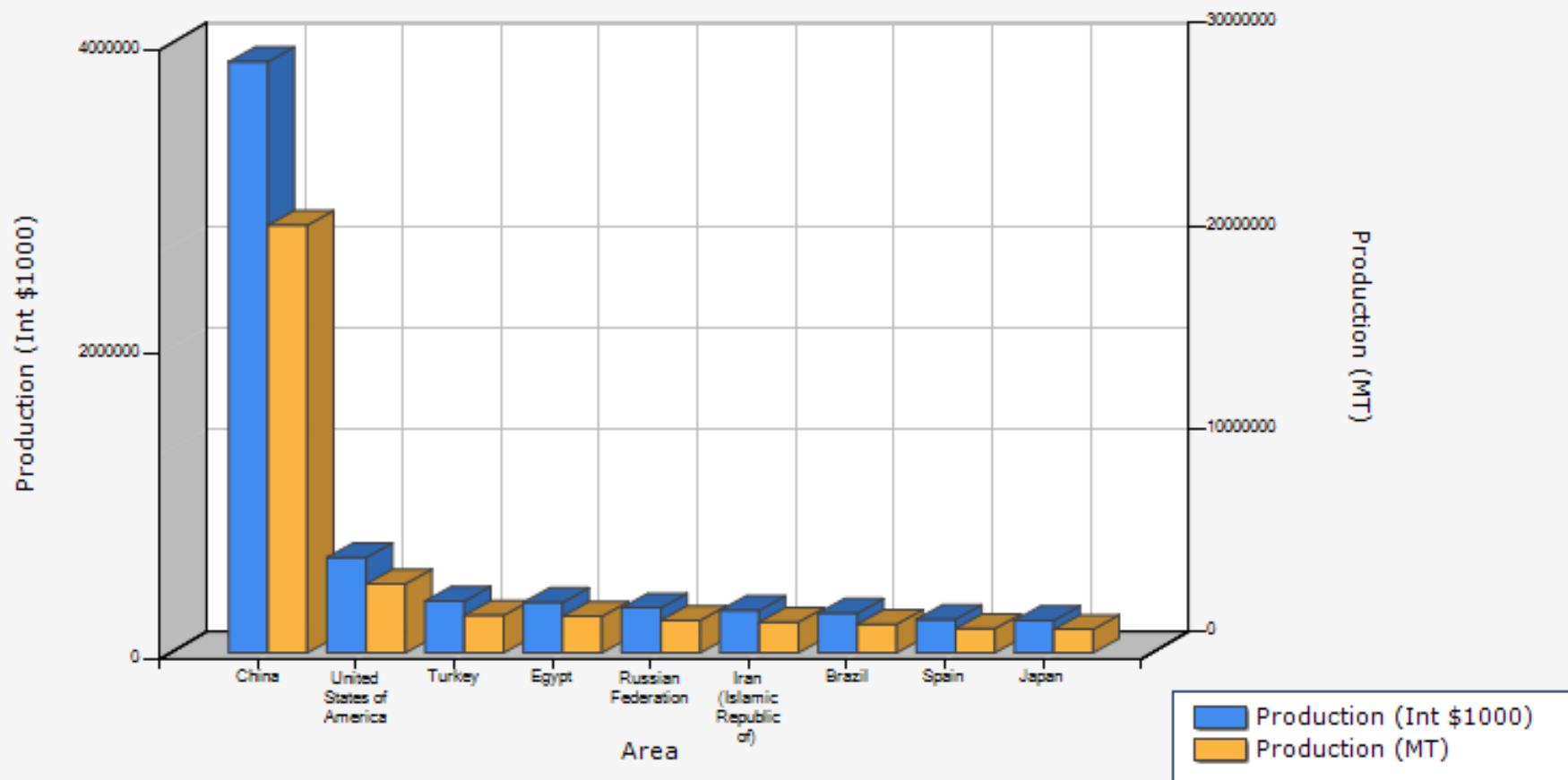
Watermelons



Onion
(*Allium cepa*)

Vöröshagyma

Top production - Onions, dry - 2009



Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	3882491	*	21067295
2	United States of America	626689	*	3400560
3	Turkey	340859	*	1849582
4	Egypt	331722	*	1800000
5	Russian Federation	295149	*	1601550
6	Iran (Islamic Republic of)	278673	*	1512147
7	Brazil	260390	*	1412938
8	Spain	220208	*	1194900
9	Japan	212670	*	1154000
10	Algeria	180633	*	980160
11	Indonesia	175561	*	952638
12	Ukraine	161364	*	875600
13	Uzbekistan	146510	*	795000
14	Poland	130438	*	707792
15	Argentina	129003	*	700000
16	Morocco	119788	*	650000
17	Peru	110934	*	601956
18	South Africa	85128	*	461926
19	Germany	76406	*	414600
20	Kazakhstan	52706	*	406000

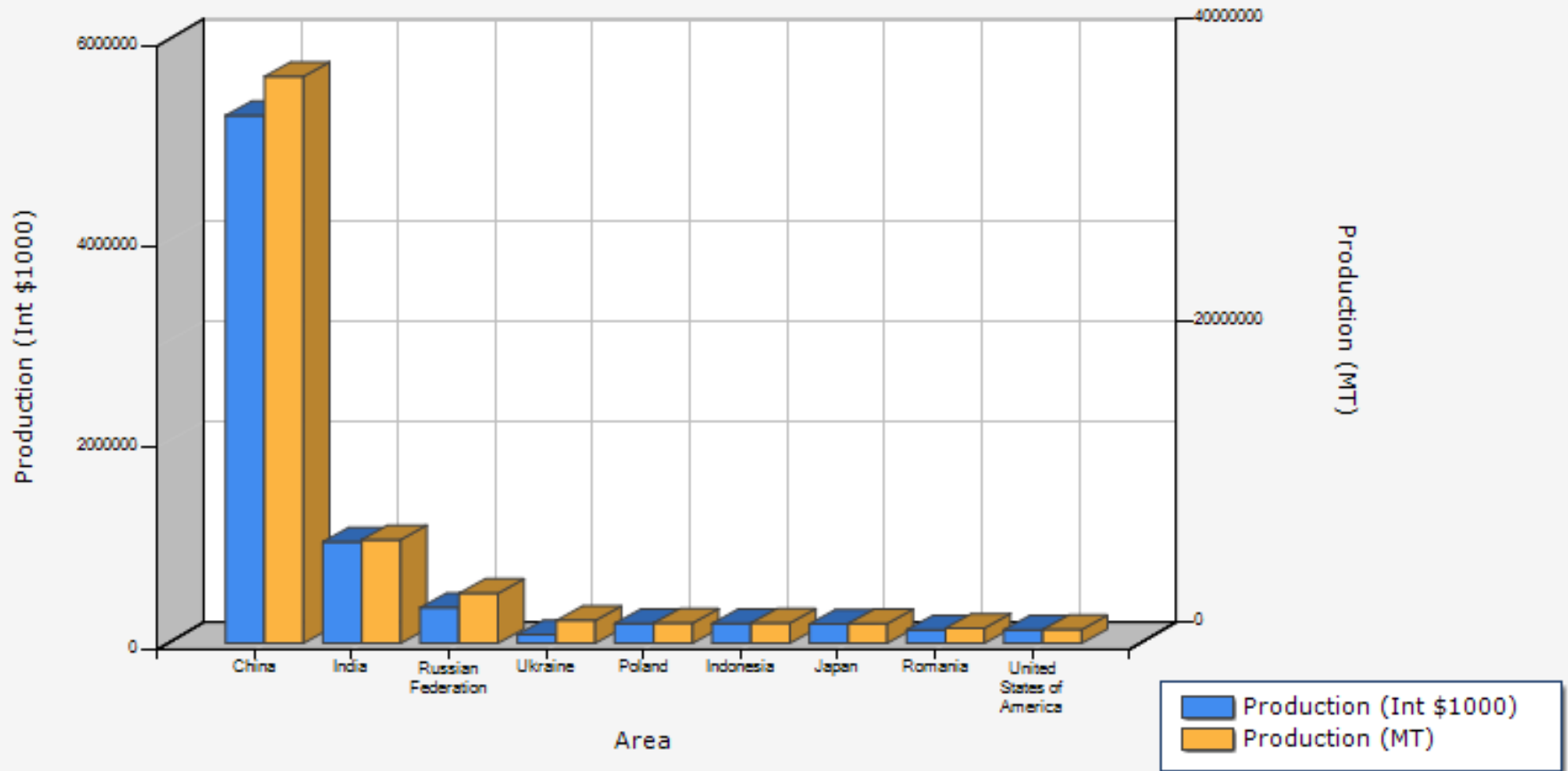
Onions (dry)



Cabbage

(Brassica oleracea)

Top production - Cabbages and other brassicas - 2009



Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	5247671	*	37572750
2	India	1009203	*	6870000
3	Russian Federation	353199	*	3312090
4	Ukraine	86568	*	1509300
5	Poland	196456	*	1337348
6	Indonesia	196133	*	1335149
7	Japan	190970	*	1300000
8	Romania	132825	*	1004191
9	United States of America	133598	*	909450
10	Germany	120296	*	818900
11	Turkey	72684	*	706855
12	Egypt	95485	*	650000
13	Belarus	33595	*	593053
14	Thailand	75101	*	511244
15	Uzbekistan	65700	*	486000
16	Kazakhstan	48330	*	389000
17	Italy	48888	*	332800
18	Serbia	47913	*	326162
19	Ethiopia	44907	*	305701
20	France	34521	*	235000

Cabbages



Yams

Dioscorea rotundata

D. cayenensis

D. alata

D. opposita

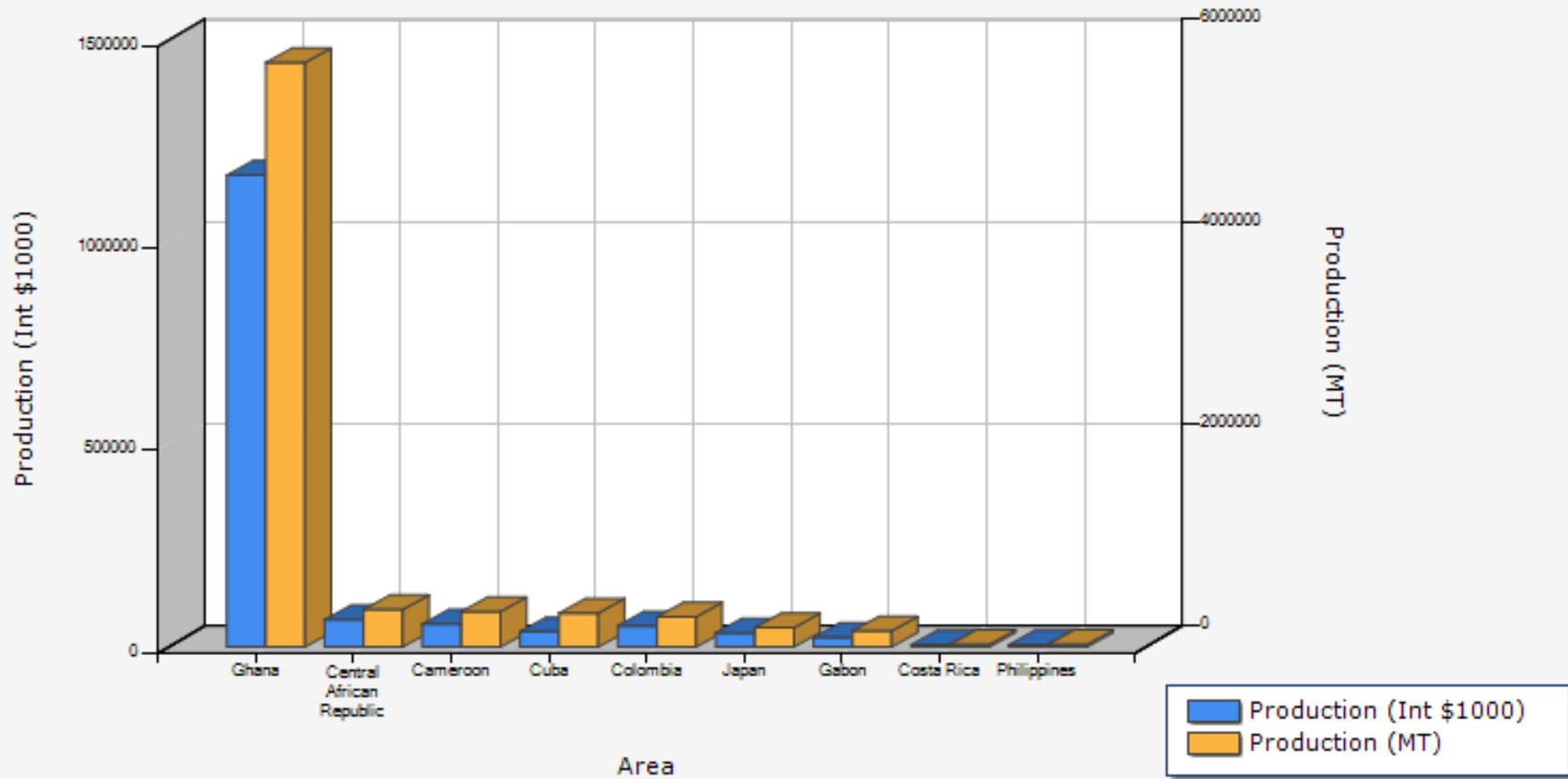
D. bulbifera

D. esculenta

D. trifida

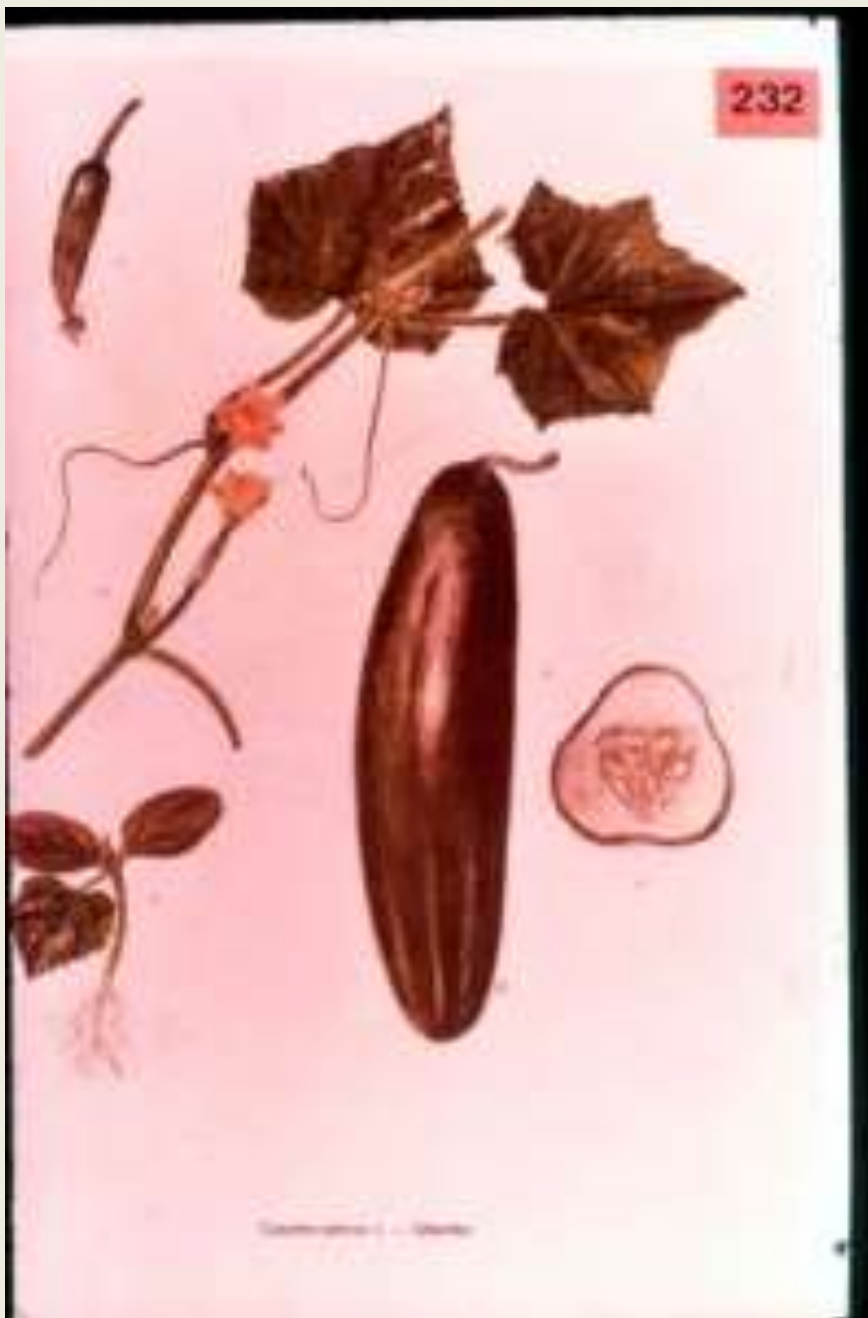
D. dumetorum

Top production - Yams - 2009



Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	Ghana	1165922	*	5777900
2	Central African Republic	67196	*	370000
3	Cameroon	56501	*	350000
4	Cuba	37879	*	334716
5	Colombia	52201	*	297350
6	Japan	34808	*	190000
7	Gabon	23407	*	158000
8	Costa Rica	5154	*	25542
9	Philippines	3682	*	25000
10	Comoros	847	*	4200
11	Kenya	803	*	3984
12	Samoa	536	*	2953
13	Portugal	532	*	2700
14	Fiji	246	*	1222
15	Barbados	175	*	870
16	Belize	13	*	65
17	Cayman Islands	3	*	18
18	Armenia	0		0
18	Afghanistan	0		0
18	Albania	0		0

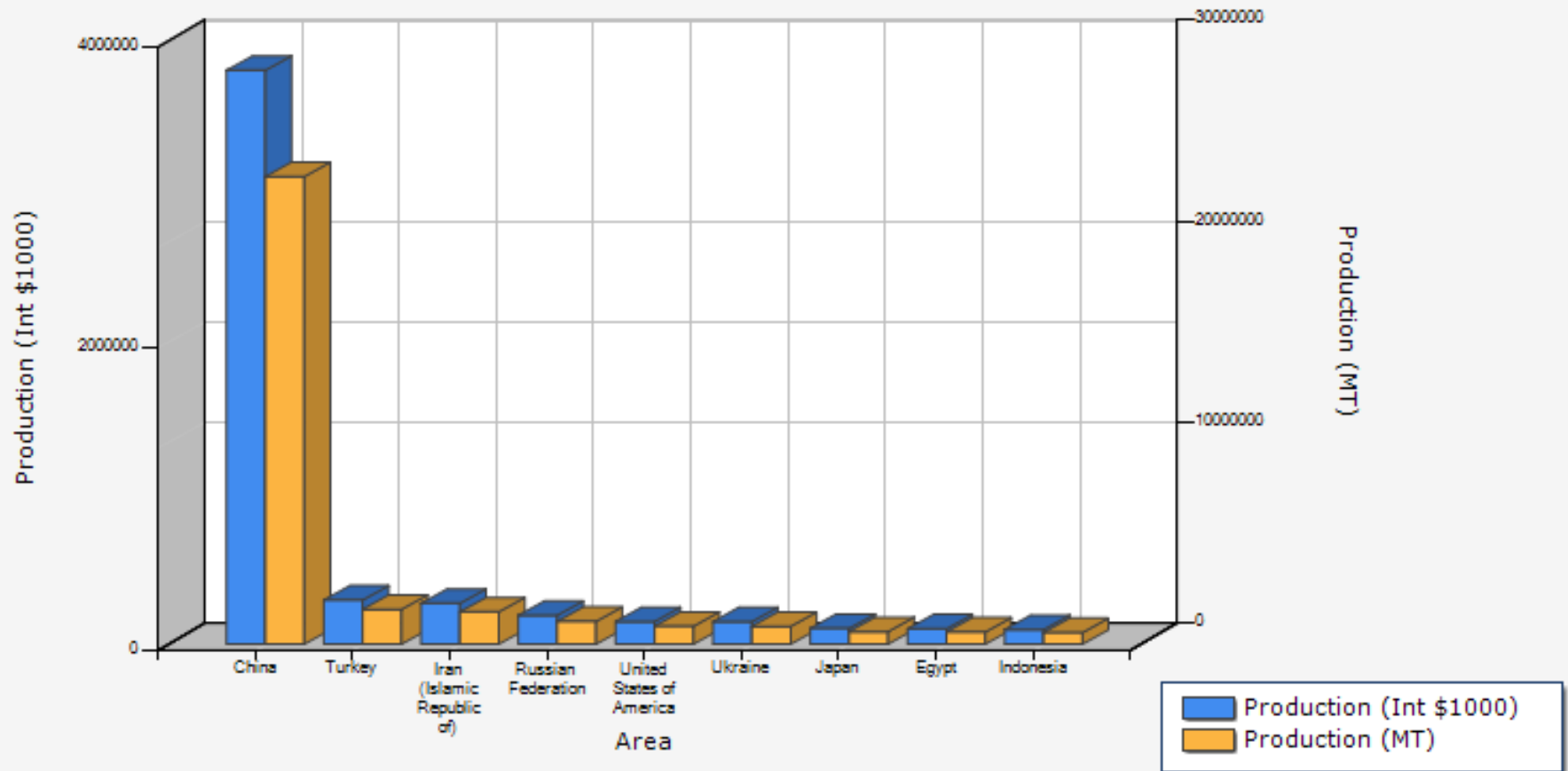
Yams



Cucumber
(*Cucumis sativus*)

Uorka

Top production - Cucumbers and gherkins - 2009



Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	3804191	*	23247373
2	Turkey	292678	*	1735010
3	Iran (Islamic Republic of)	270534	*	1603737
4	Russian Federation	191080	*	1132730
5	United States of America	149827	*	888180
6	Ukraine	148953	*	883000
7	Japan	104621	*	620200
8	Egypt	101214	*	600000
9	Indonesia	97164	*	575995
10	Spain	89405	*	530000
11	Poland	81064	*	480553
12	Iraq	71009	*	420945
13	Uzbekistan	59041	*	350000
14	Belarus	34047	*	318179
15	Kazakhstan	48751	*	289000
16	Azerbaijan	32305	*	191507
17	Germany	31038	*	184000
18	Romania	29770	*	176482
19	Cameroon	23616	*	140000
20	Jordan	23225	*	137681

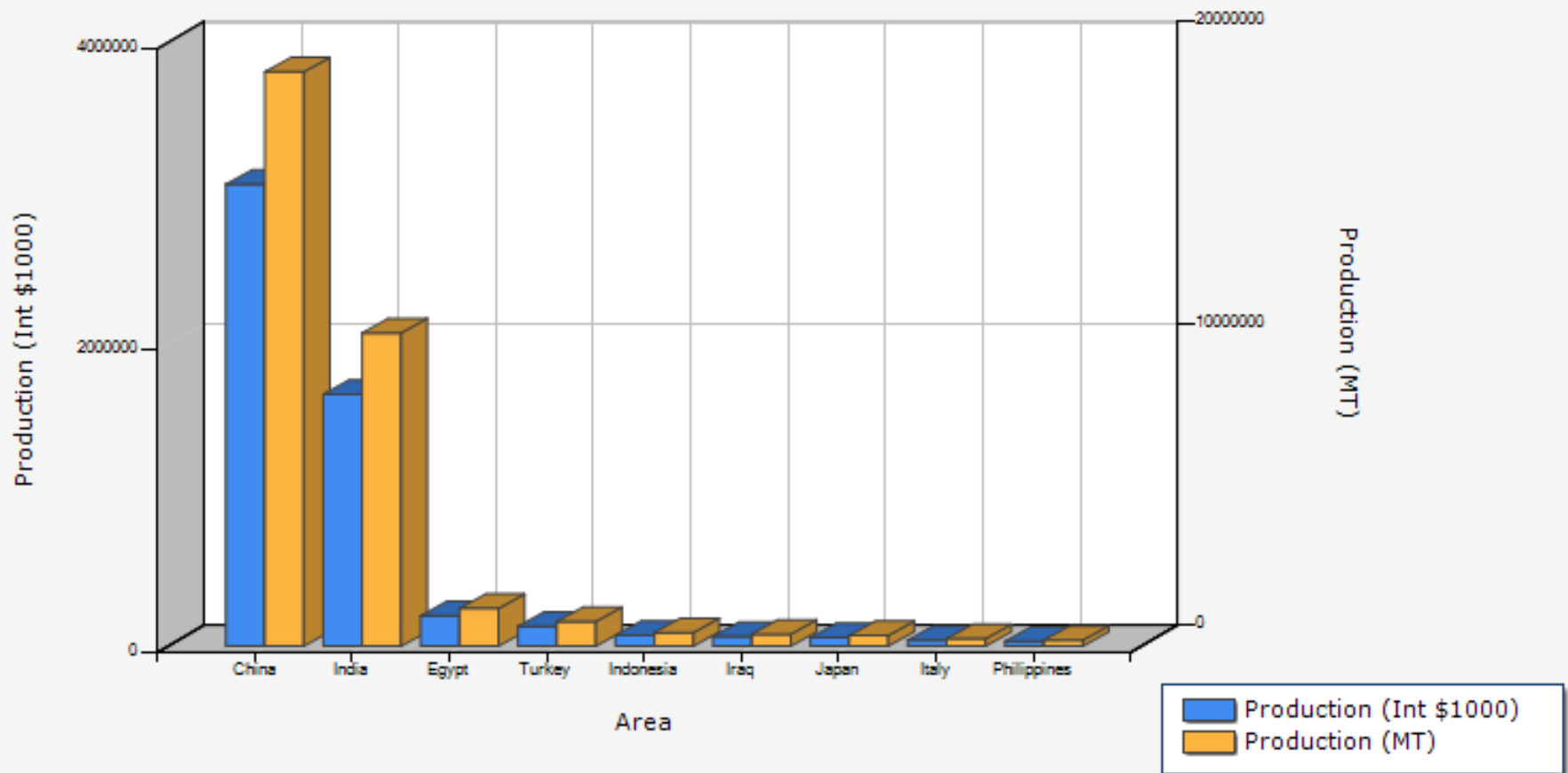
Cucumbers



Eggplant
(aubergine)
(Solanum
melongena)

Tojásgyümölcs /
Padlizzán

Top production - Eggplants (aubergines) - 2009



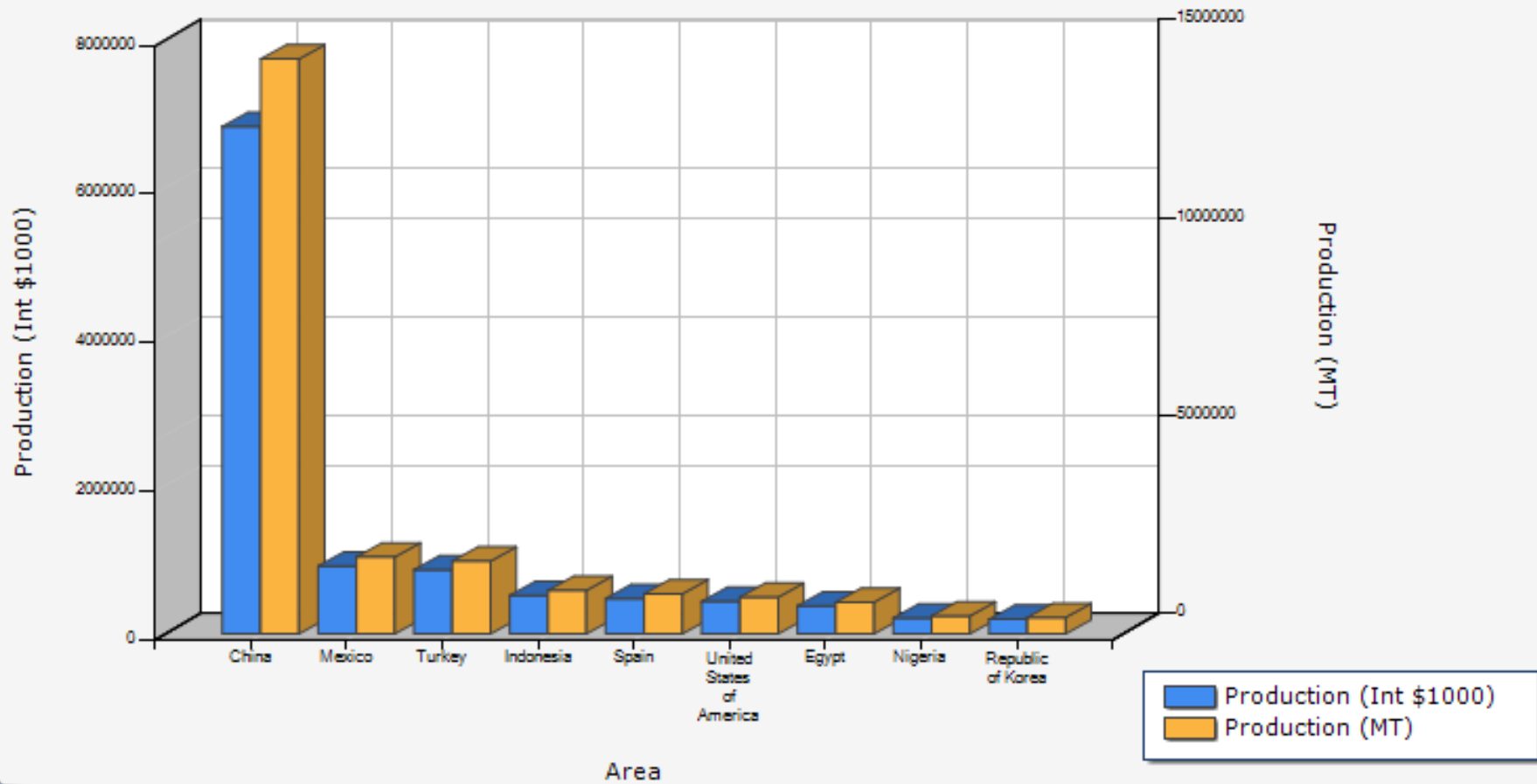
Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	3060166	*	19026154
2	India	1669197	*	10378000
3	Egypt	201050	*	1250000
4	Turkey	131266	*	816134
5	Indonesia	72377	*	449997
6	Iraq	63717	*	396155
7	Japan	56165	*	349200
8	Italy	39454	*	245300
9	Philippines	32319	*	200942
10	Spain	28147	*	175000
11	Romania	27115	*	168588
12	Syrian Arab Republic	23650	*	147041
13	Jordan	17176	*	106793
14	Sri Lanka	17110	*	106380
15	Azerbaijan	16475	*	102433
16	Greece	13671	*	85000
17	Algeria	12274	*	76317
18	Sudan	12159	*	75600
19	Ukraine	11741	*	73000
20	Kazakhstan	7720	*	48000

Eggplants



Paprika (*Capsicum annuum*)

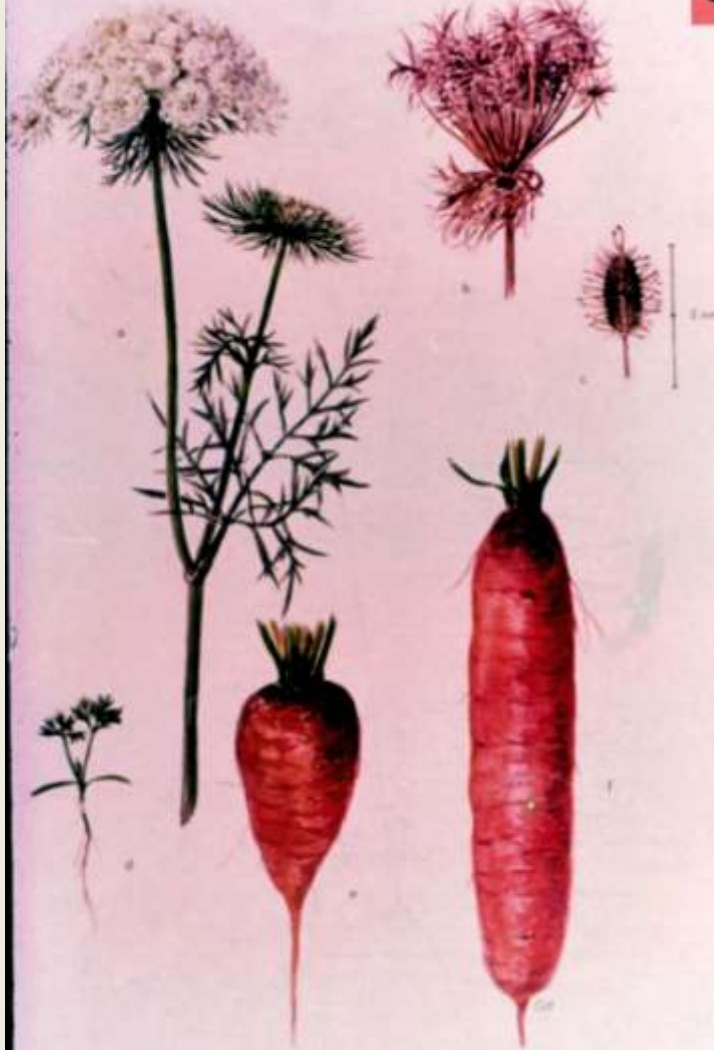
Top production - Chillies and peppers, green - 2009



Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	5012148	*	14524178
2	Turkey	633931	*	1837003
3	Spain	349127	*	1011700
4	United States of America	319788	*	926680
5	Egypt	276072	*	800000
6	Algeria	110066	*	318949
7	Tunisia	100076	*	290000
8	Ethiopia	86022	*	249276
9	Romania	84775	*	245661
10	Italy	79577	*	230600
11	Serbia	59136	*	171366
12	Hungary	58300	*	168944
13	Ukraine	53592	*	155300
14	The former Yugoslav Republic of Macedonia	53409	*	154771
15	Japan	49244	*	142700
16	Argentina	43826	*	127000
17	Greece	41410	*	120000
18	Kazakhstan	30367	*	88000
19	Bulgaria	24663	*	71469
20	Cuba	19556	*	56672

Peppers, green

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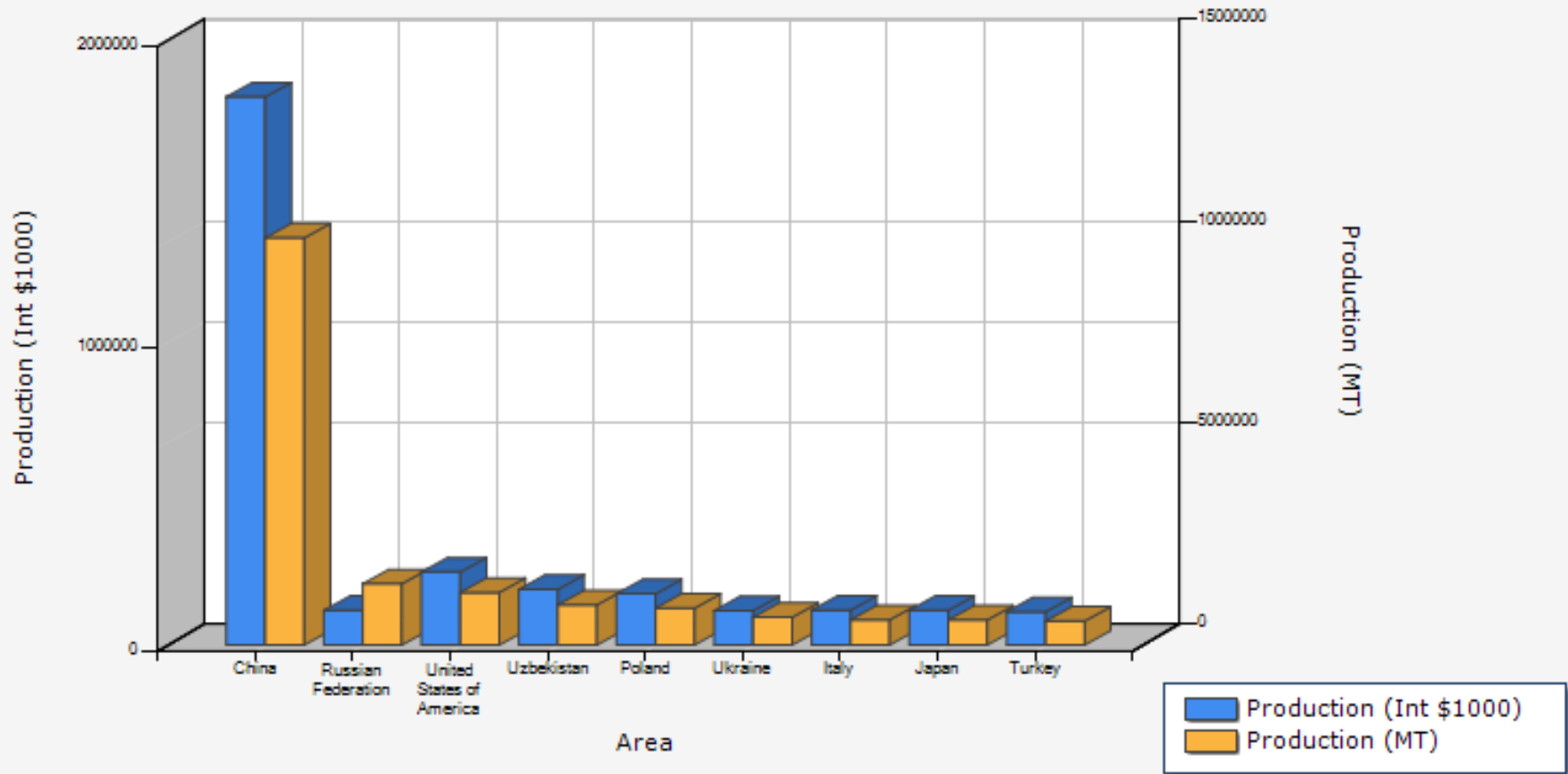
Daucus carota L. sp. *sativus* (Hoffm.) Arcang. — Sárgarépa

Carrot

(*Daucus carota* subsp. *sativus*)

Sárgarépa

Top production - Carrots and turnips - 2009



Rank	Area	Production (Int \$1000)	Flag	Production (MT)
1	China	1811969	*	10092319
2	Russian Federation	114475	*	1518650
3	United States of America	241319	*	1304150
4	Uzbekistan	184114	*	995000
5	Poland	168997	*	913304
6	Ukraine	113318	*	686400
7	Italy	115372	*	623500
8	Japan	114724	*	620000
9	Turkey	109844	*	593628
10	Germany	90577	*	569500
11	Spain	99664	*	550000
12	Belarus	10208	*	360984
13	Canada	63335	*	358991
14	Indonesia	65312	*	352963
15	France	55512	*	300000
16	Colombia	47052	*	299170
17	Kazakhstan	54031	*	292000
18	Morocco	51811	*	280000
19	Algeria	50186	*	271219
20	Australia	48763	*	263527

Carrots

Rank of Hungary by the vegetable production in the World

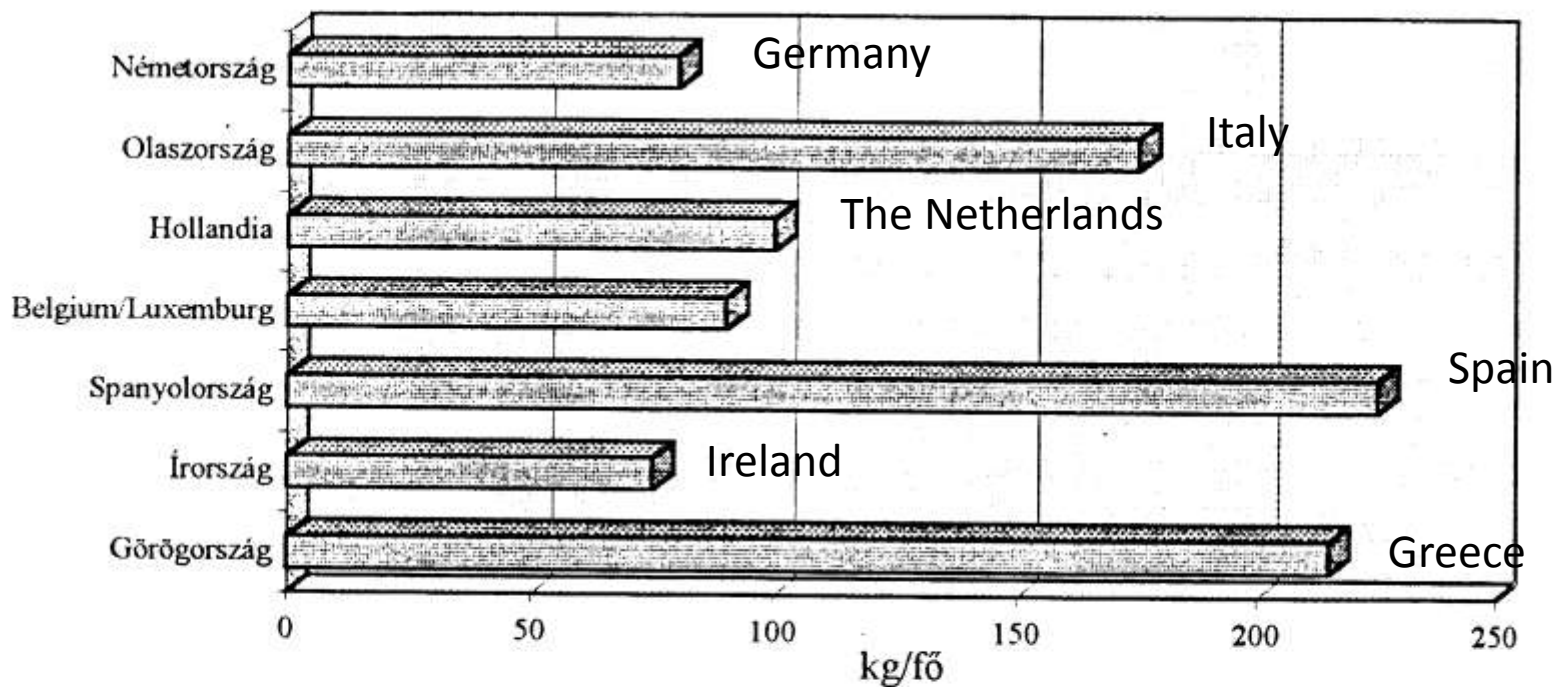
<u>Rank</u>	<u>Commodity by quantity</u>
4	Maize, green
10	Peas, green
19	Chillies and peppers, dry
19	Mushrooms and truffles
20	Asparagus
20	Chillies and peppers, green
28	Beans, green
29	Leeks, other alliaceous veg

Vegetable Consumption /1974, FAO/

/Level of development/	Mass of consumption		Rate (%)
	kg/year/ person	g/day/pe rson	
World Average	58	158	100
Developing countries' average consumption	46	126	79
Developed countries' average consumption	92	252	158

**ZÖLDSÉGFÉLÉK - egy főre jutó fogyasztása néhány országban
(1990/1991)**

Hungary 75 kg/person



Forrás: Tendenciák a friss zöldségek piacain

3. ábra

Vegetable consumption in European countries