INTERNATIONAL COTTON ADVISORY COMMITTEE
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Cost of Production in Latina American Countries

M. Rafiq Chaudhry
Technical Information Section

Cost of production and prices are the most critical factors that affect farmers and help them to decide how much area they will plant to cotton. Both are related to each other as if cost of production increases, farmers expect higher prices as they cannot sell at loss. Farmers may not be able to demand higher prices, though they would expect, if production costs are lower. It is the margin in prices over production costs that will determine profit for the farmer and thus area to be planted to cotton in the next year. The International Cotton Advisory Committee (ICAC) has undertaken surveys on the cost of production for over 25 years. In the beginning, data were collected at irregular intervals but for the last 15 years data has been updated in 1992, 1995, 1998, 2001 and 2004. The sources of data are coordinating agencies in ICAC member countries, or the related government agencies/departments and cooperating researchers/institutions in countries who are not yet members of the ICAC. For the sake of consistency, the questionnaire designed in 1992 has been used each year since. The questionnaire accommodates most variations in production practices and different norms of input applications. Thirty countries participated in the recent survey including Argentina, Bolivia, Brazil, Colombia, Mexico, Paraguay and Peru and provided data for the year 2003/04.

Cost of Production in the World

The cost of producing a hectare of cotton ranges from less than US$400 in a number of countries to almost $4,000 in Israel. The data from 30 countries showed that on average $1,139 are spent to grow, harvest and gin one hectare of cotton. The world average land rent for a hectare of cotton is $241 thus reducing the ownership cost to a grower to $898/ha. Additional income from seed sold after ginning reduces the net cost to $732/ha. Ownership costs for seedcotton/ha (excluding land rent, ginning, economic and fixed costs) comes to $617/ha.

With a world average yield at 642 kg/ha in 2003/04, the net cost per kilogram of lint (excluding land rent and seed value) in the world was $1.14/kg. The cost of production increases to $1.52/kg of lint if the farmer does not own land and has to pay rent for cotton production. The data from 30 countries showed that on average, a farmer spends $0.33/kg to produce a kilogram of seedcotton, indicating that ginning, economic and fixed costs are expensive.

Cost of Production by Region

The cost of producing a kilogram of seedcotton is highest in Europe and lowest in Australia. Farm gate production costs in Asia, Africa and South America are more than 150% of costs in Australia. In the USA, farmers can produce seedcotton at comparatively low cost, but the costs of ginning, plus economic and fixed costs make it relatively expensive to produce cotton in the USA. The cost of producing a kilogram of seedcotton is close in Asia, Africa and South America.

Cotton production costs per kilogram of lint are the highest in Europe and the lowest in Australia and South America. The European data is from Bulgaria and Spain; Greece did not participate in the survey. However, the cost of production in Greece is close to that in Spain. None of the Central Asian countries provided data for the survey. But, the average of eight Asian participating countries that planted 53% of world cotton area in 2003/04 indicates an average net cost of production of US$1.14/kg. The net cost of production in North America, including Mexico and the USA, is 130% of

the world average.

Ten countries from Africa, including Benin, Cameroon, Côte d'Ivoire and Togo from West Africa, participated in the survey. The average cost of producing a hectare of cotton in Africa is less that 50% of the cost in North America, but due to lower yields, the cost per kilogram of lint is more than all other regions except Europe. Argentina, Brazil, Bolivia, Colombia, Paraguay and Peru participated in the survey from South America where production costs are almost equal to Australia.

Table 1: Cost of Producing a Kg of Lint by Region

Region	Cost/ha ($)	Cost/kg ($)	% of World
North America	1,090	1.48	130
South America	995	1.09	95
Africa	513	1.40	123
Asia	700	1.14	100
Europe	3,362	3.72	326
Australia	1,937	1.08	95
World	732	1.14	

Table 2: Cost of Producing a Kg of Seedcotton by Region

Region	Cost/ha ($)	Cost/kg ($)	% of World
North America	682	0.34	103
South America	884	0.32	97
Africa	395	0.36	109
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Europe	1,890	0.70	212
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Inter-country Comparisons

Thirty countries participated in the ICAC survey; Argentina, Australia, Bangladesh, Benin, Bolivia, Brazil, Bulgaria, Cameroon, China (Mainland), Colombia, Côte d'Ivoire, Ethiopia, India, Iran, Israel, Mali, Mexico, Nigeria, Pakistan, Paraguay, Peru, Philippines, South Africa, Spain, Sudan, Tanzania, Togo, Turkey, USA and Vietnam. Benin, Brazil, Colombia, Côte D'Ivoire, India, Mexico, Philippines, South Africa, Togo, Turkey and USA provided the cost of production for more than one set of production practices or region. Thus, the total number of entries comes to 51. Data from seven countries from the Latin American region i.e. Argentina (Chaco), Bolivia (National Average), Brazil (Cerrado), Colombia (Sinu), Mexico (Sonora-Irrigated), Paraguay (National Average) and Peru (Tanguis-Irrigated) are presented below.

Land Rent and Value of Seed

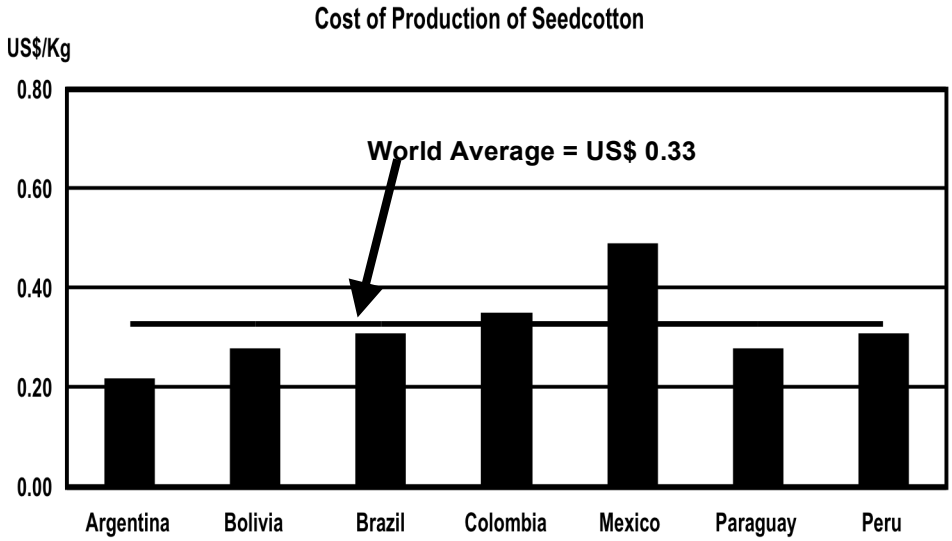
In many countries, some farmers own land and some rent. Farmers legally agree on a price for land for using it for one year. Cotton is around six months at the maximum, and other crops can be gown on the same land after cotton picking is over. A variety of crops are grown in most countries. Crop rotations can be long term or short term but land is rented for on yearly basis so efforts are made to use the land year around. In the ICAC survey, respondents were asked to provide the cost of rent for cotton only. Similar, farmers may or may not sell the seed after ginning, and they were asked to report the opportunity value of seed received after ginning. The survey assumes that farmers hypothetically

gin seedcotton in a custom ginning system and sell the lint and seed separately.

Land rent and seed value are the two most important factors that affect costs per kilogram of seedcotton and lint. Share-cropping is popular in Australia so no data are available on land rent while land rent is almost 30% of the total cost of producing a hectare of cotton in Peru. Data on the value of seed is available from all countries, and the differences are significant. The value of seed is based largely on the quantity of seed produced per hectare, but the price of seed per kilogram also seems to vary greatly among countries, as evident from Colombia and Mexico.

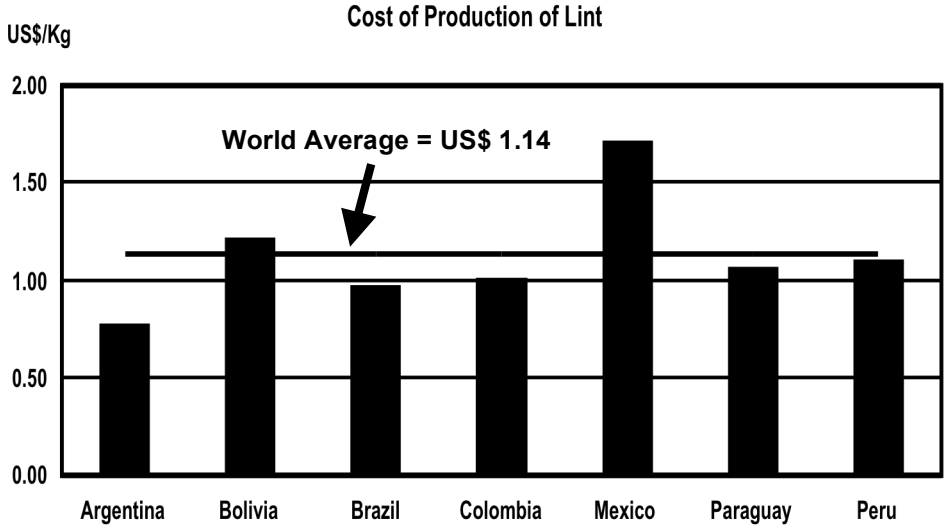
Cost of Seedcotton by Country

The cost of producing a kilogram of seedcotton is US$0.22 in Argentina, US$0.28 in Bolivia and Paraguay, US$0.31 in Brazil and Peru, US$0.35 in Colombia and US$0.49 in the Sonora region of Mexico. Cost of production is high in Colombia because of high cost of insecticides that comprise 21% of total costs per hectare. In Mexico, irrigation water alone constitutes 13% of totals costs. Production costs of seedcotton are lower in Argentina and Bolivia due to minimum use of insecticides and fertilizers in both countries.



Cost of Lint by Country

The data from the seven countries in the Latin American region showed that there is a substantial variation in the net costs of producing a kilogram of lint. The cost of production is the lowest in Argentina and highest in Mexico. In Argentina, the average net cost per kilogram of lint, excluding land rent and seed value, was only $0.78/kg as against the world average of US$1.14/kg. The net cost is low in Argentina because of almost no cost on fertilizers and least use of insecticides. Cost is low in Brazil due to high yields. It is most expensive to produce cotton in Mexico among seven countries compared in this paper.



Some Caveats

The cost of production data come from actual surveys of farming practices in some instances such as the USA and Australia. While some countries undertake sample surveys, cotton researchers complete survey forms in others. The source of data for individual input costs or operations can vary greatly from country to country. When and how the opportunity costs of inputs and operations are calculated is also a source of variation among countries. Therefore, it is possible that the ICAC cost of production data represent potential costs rather than actual costs.

Ideally, one could measure the cost of producing cotton using a uniform method of collecting data and measuring the cost of all inputs and operations through to the production of seedcotton and lint. In order to calculate the net cost of lint or ownership costs of seedcotton production, complete data on land rent are needed, as well as the value of seed after ginning. However, no uniform data are available other than for a very small number of countries.

No opportunity costs are available for some inputs/operations. Land is a basic requirement to grow cotton, but in some countries there is no land rent system. Cotton companies in most West African countries provide planting seed free to cotton growers. Production technology is free in most countries but not in a country like Australia where cotton consultants are hired by cotton growers. Family labor employed in field operations and government subsidies on inputs are other critical factors making comparisons difficult and sometimes invalid among countries.

Cotton is produced in many parts of the world under a variety of production conditions, different climates and different systems of economic organization. Cotton produced in two countries at the same cost may not fetch the same price. Cotton produced in Egypt is not the same quality as in other countries and will be sold at a higher price.

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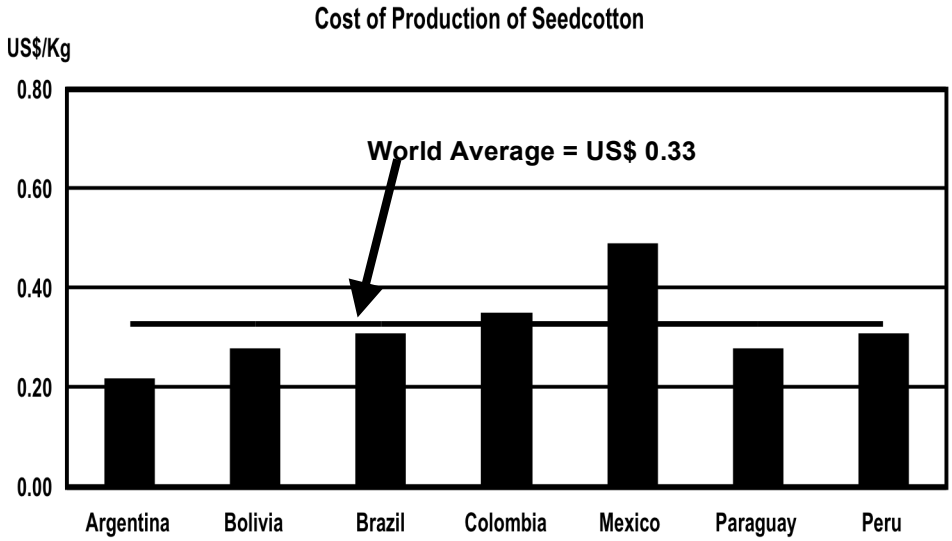

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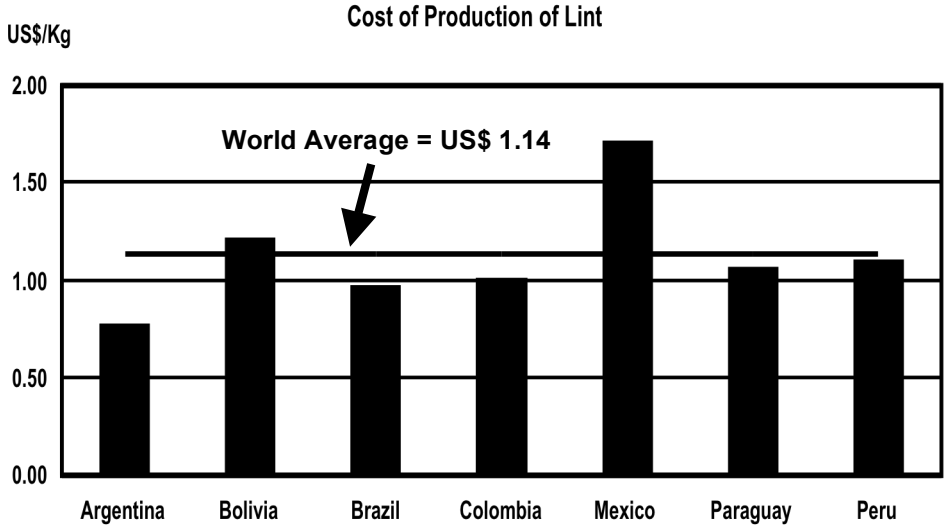

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Costo de producir algodón en Latinoamérica

M. Rafiq Chaudhry
Sección de Información Técnica

Comité Consultivo Internacional del Algodón

Encuesta de costos de producción del CCIA

- La encuesta se ha hecho desde hace 25 años
- Las últimas 5 encuestas cada 3 años
- La encuesta actual es para el año ag. 2003/04
- Participaron 30 países (+/- 90% del área algodonera mundial)

Encuesta de costos de producción del CCIA: Metodología

- Presiembra - Alquiler de tierra, irrigación, etc.
- Siembra - Semilla, herbicidas, fertilizantes, etc.
- Crecimiento - Raleo, limpieza de malezas, etc
- Recolección - Recolección, trituración/corte de tallos
- Desmotado - Transporte, desmotado, clasificación
- Costos de adm. etc - Gerencia, interéses, reparaciones, etc.
- Costos fijos - Tractores, energia, etc.

Encuesta de costos de producción del CCIA: Metodología

Operación/rubro	Unidad	Cantidad /ha	Costo /unidad	Costo en moneda local	Costo en EEUU$
1. Presiembra Alquiler de tierra ..... Subtotal					
2. Siembra Semilla ..... Subtotal					

Encuesta de costos de producción del CCIA: los datos

- Promedio mundial
- Promedio regional
- Promedio nacional
- Promedio por insumo

Encuesta de costos de producción del CCIA: los datos

1. Argentina (Chaco - secano)
2. Bolivia (promedio nacional - secano)
3. Brasil (Cerrado - secano)
4. Colombia (Sinú - secano)
5. México (Sonora - Irrigado)
6. Paraguay (promedio nacional - secano)
7. Perú (Tangüis - Irrigado)

Encuesta de costos de producción del CCIA: los datos

1. Australia (Irrigado)
2. China Rep. Popular de
3. India (promedio)
4. Mali
5. Paquistán (Pendjab)
6. Turquía
7. Estados Unidos

Fuentes de los datos

- Agencias coordinadoras del CCIA en países miembros
- Compañias algodoneras designadas por los gobiernos
- Instituciones de investigación
- Se utiliza la misma encuesta

Los datos son oficiales

Excepciones a la uniformidad de los datos

- El método de recolección no es uniforme
- El conjunto de datos no es completo en todos los países
- Los datos para ciertos rubros no están disponibles
- La calidad del algodón no es la misma
- El precio no es el mismo

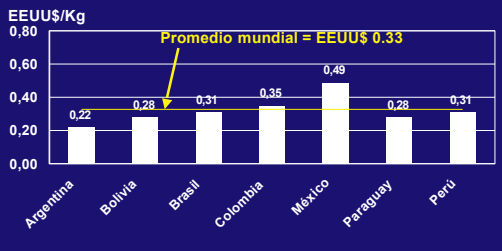
Costo de producir algodón en rama (sin tener en cuenta la renta de la tierra): promedio mundial

Costo por hectárea	= EEUU$ 617
Rendimiento promedio	= 1,850 kgs. por ha.
Costo por kilogramo	= EEUU$ 0.33

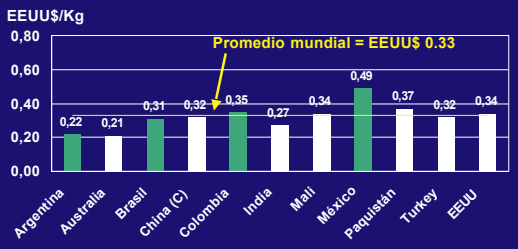
Costo de producir algodón en rama por región

Región	Costo/kg	% mundo
América del norte	0.34	103
América del sur	0.32	97
Africa	0.36	109
Asia	0.34	103
Europa	0.70	212
Australia	0.21	64
Mundo	0.33	100

Costo de producir algodón en rama



Costo de producir algodón en rama



Costo total de la fibra: Mundo

Costo por hectárea	= EEUU$ 1,139
Rend. Promedio/ ha	= 642 kg lint
Costo por kg	= EEUU$ 1.77

Nota: incluyendo la renta de la tierra y el valor de la semilla.

Costo neto de la fibra: Mundo

Rnta promedio de la tierra/ha.	= EEUU$ 241
Valor promedio de la semilla/ha.	= EEUU$ 166
Costo neto/ha.	= EEUU$ 732
Rendimiento promedio/ha.	= 642 kgs. de fibra
Costo por kilogramo	= EEUU$ 1.14 (52 centavos por libra)

Costo neto de la fibra por región

Región	Costo/kg	% Mundo
América del norte	1.48	130
América del sur	1.09	95
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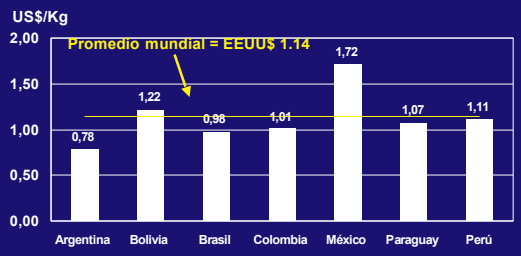

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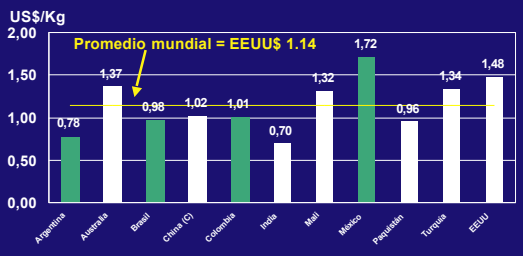
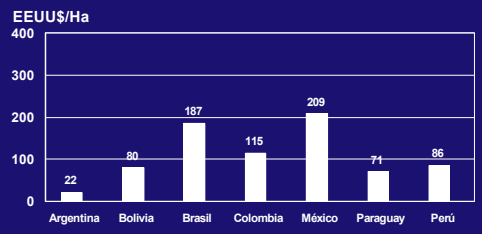
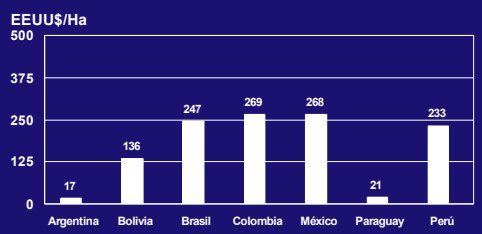


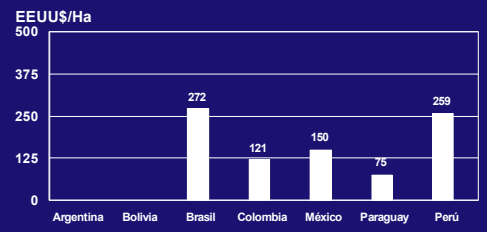
Costo de control de malezas



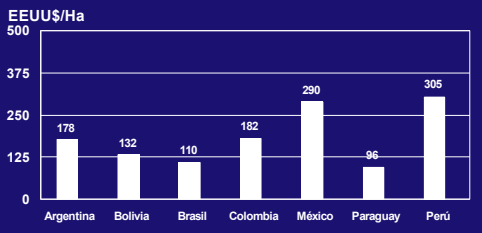
Costo de control de insectos



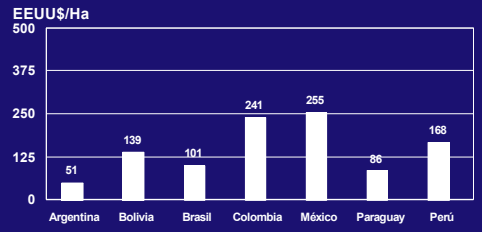
Costo de fertilizantes



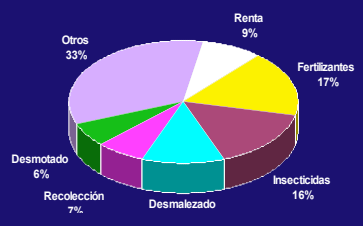
Costo de recolección



Costo de desmotado



Estructura de costos - Brasil (Cerrado)



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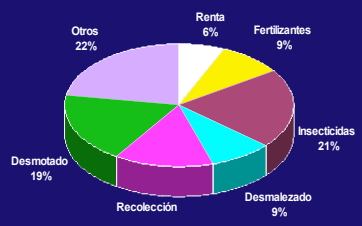
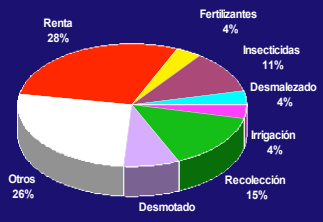


Estructura de costos - México (Sonora)

Estructura de costos - Perú (Tangüis)



Conclusiones

- El costo de producir algodón en rama no varía demasiado de país a país.
- El costo de la fibra por kilogramo es muy diferente de país a país.
- El desmotado y los costos gerenciales y fijos determinan la diferencia de costos de fibra por kilogramo de país a país.
- México tiene costos de producción de algodón en rama y de fibra más altos que en todos los países de América del sur.