



Soybeans and Health

-unfamiliar factors contributing to human health-



Jan 15, 2013 S Yamamoto



- **The soybean is a species of legume native to East Asia.**
- **It is classed as an oilseed rather than a pulse.**
- **Fat-free soybean meal is a significant and cheap source of protein.**
- **Tofu and soybean milk are the most common and popular soybean products for humans in East Asian countries.**
- **Soybean is rich in protein and an important protein source, especially for East Asian people.**

Taste of soybean products has been improved a lot. Much more variety.



Renewal



Renewal

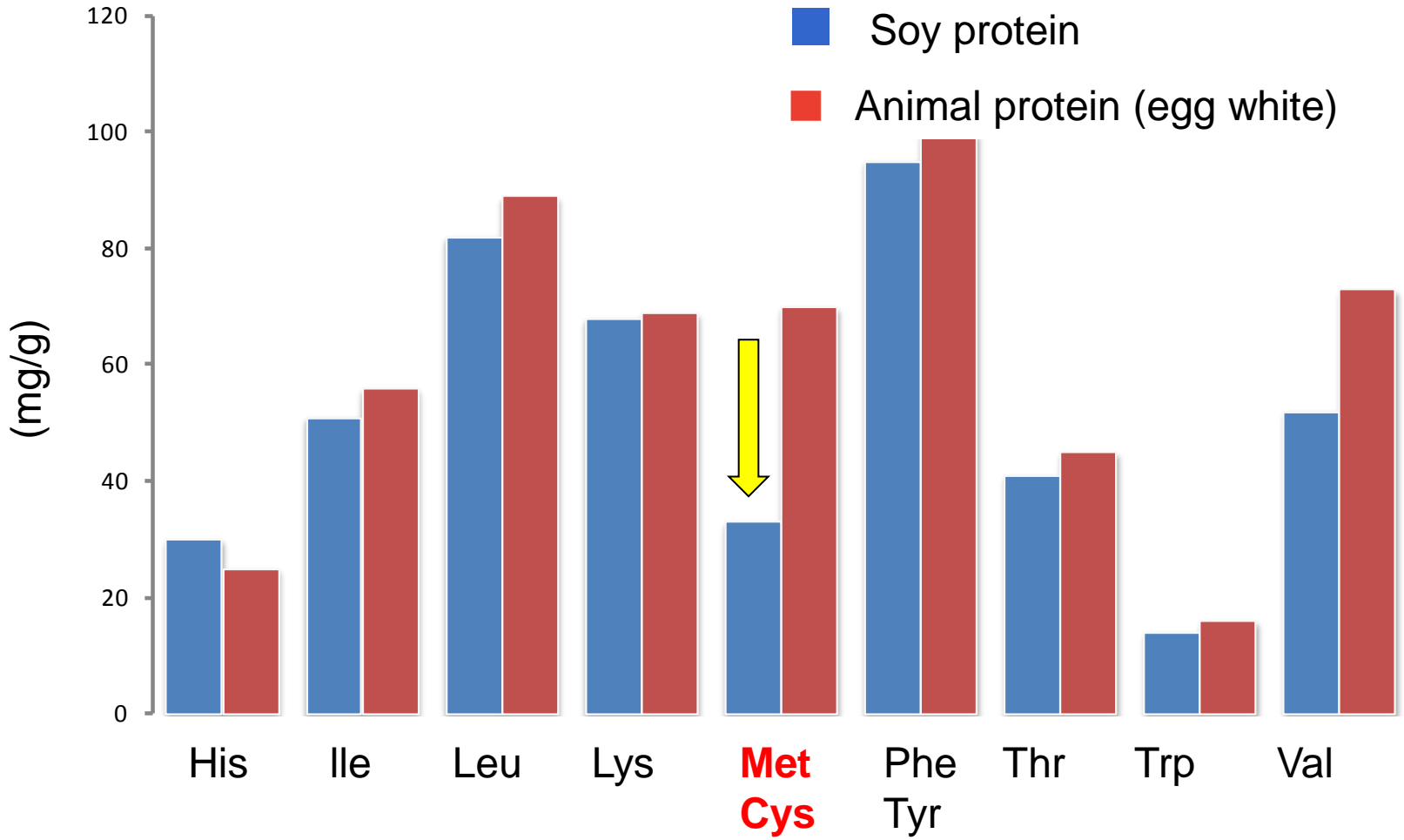


Renewal





Sulfur amino acids (Met + Cys) in soybean protein are lower than those in animal food proteins





(1973) Quality of soybean protein reported by FAO/WHO

Met + Cys were lower than the requirements for all age groups.

Concentration in Soybean

Requirements
Infants
10-12 yrs old
Adults

Low

His Ile Leu Lys Met+Cys Phe+Tyr Thr Trp Val



(1985) FAO/WHO/UNU established new AA requirements. All the EAAs of soybean protein meet requirements in all age groups.

Concentration in Soybean

Requirement
Infants
| 10-12 yrs old
/ Adults

Enough

Met+Cys

His

Ile

Leu

Lys

Phe+Tyr

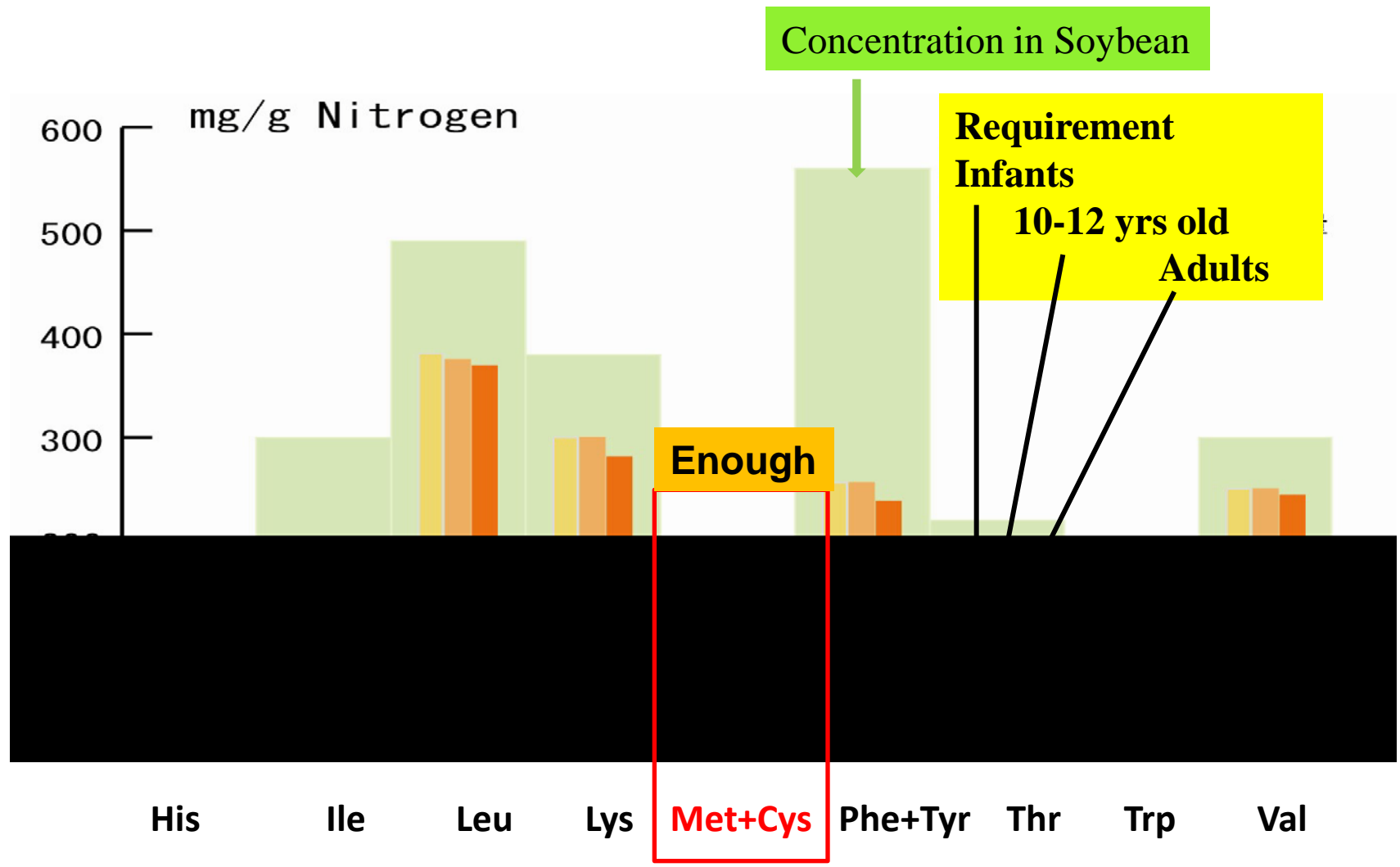
Thr

Trp

Val



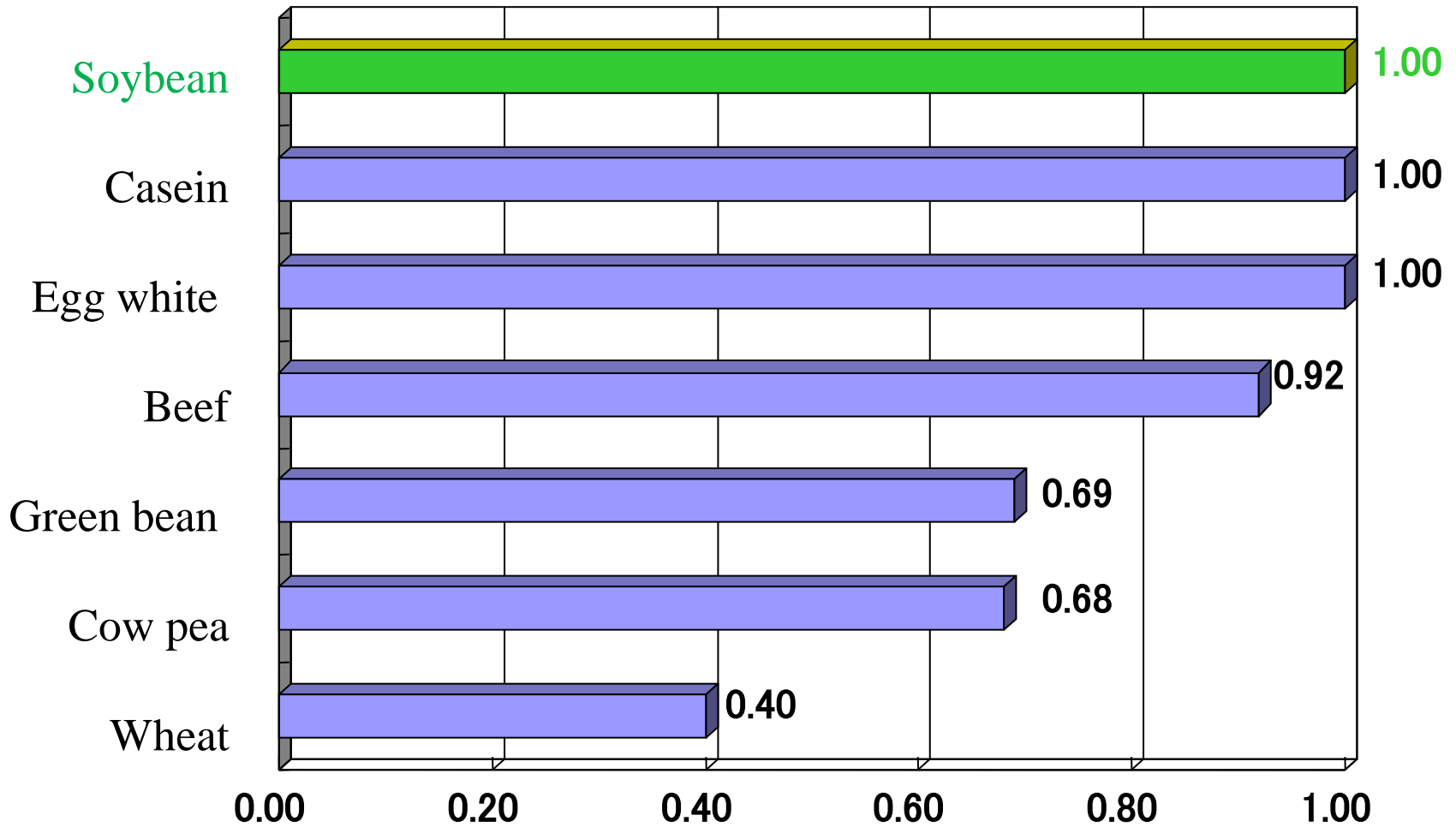
(2007) FAO/WHO/UNU report also showed
the high quality of soybean protein





Amino acid score of various proteins

soybean protein has a score as high as animal proteins



FAO/WHO, 1989