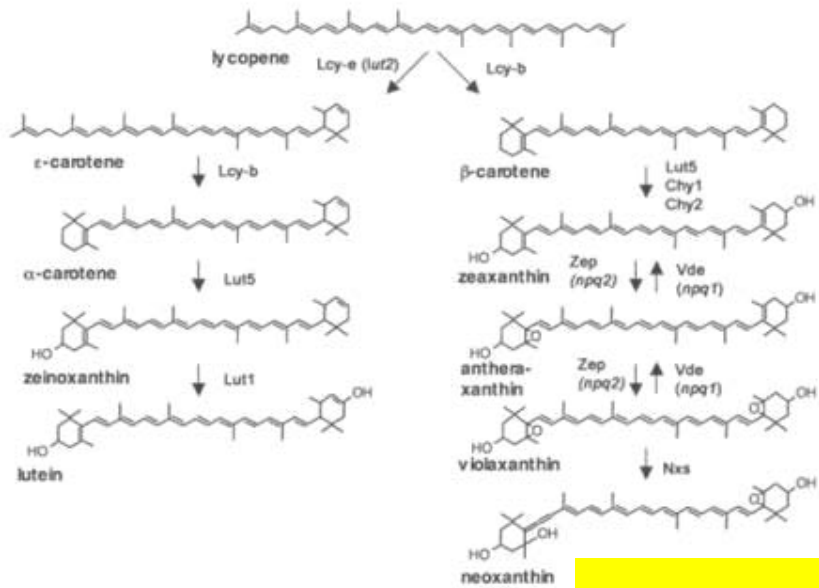
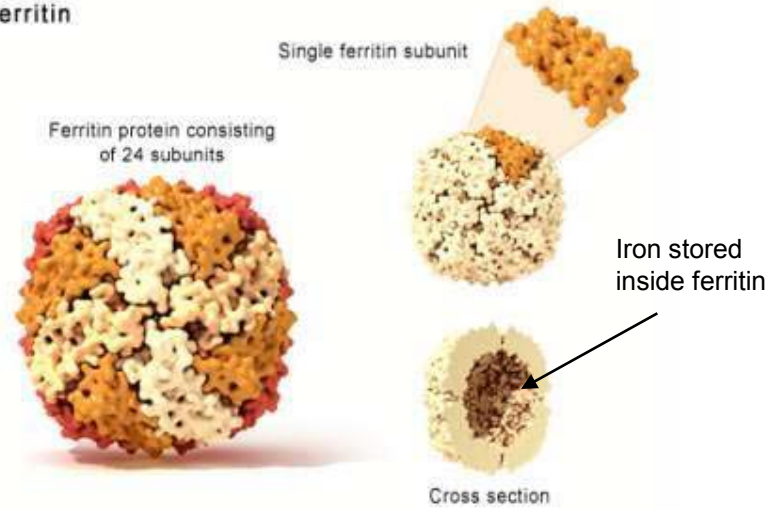


# Carotenoid Biosynthesis

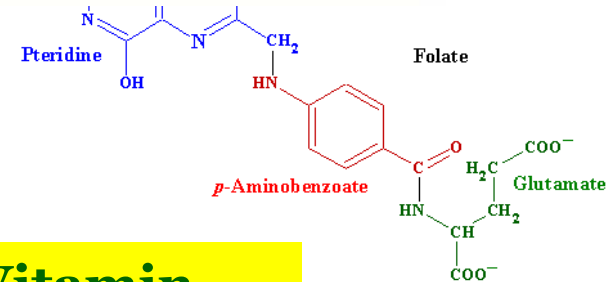


# Ferritin



U.S. National Library of Medicine.

# Vegetables:



**A Natural Multiple Nutrient and Vitamin Mixture for Nutrition and Health**



## Recommended nutrient intakes (RNI) and % RNI contributed from 100 gm of plant food

|  | Protein       | Vitamin A    | Iron      | Folate    | Zinc      | Calcium    | Vitamin E      |
|--|---------------|--------------|-----------|-----------|-----------|------------|----------------|
| <b>RNI for pregnant women (1<sup>st</sup> trimester)</b> | g<br>60       | µg RE<br>800 | mg<br>30  | µg<br>600 | mg<br>11  | mg<br>1000 | mg α-TE<br>7.5 |
| <b>Percentage of RNI</b>                                 | ----- % ----- |              |           |           |           |            |                |
| <b>Rice</b>  | 0             | 0            | 1         | 2         | 4         | 0          | 0              |
| <b>Cassava (root)</b>                                    | 2             | 0            | 1         | 5         | 3         | 2          | 0              |
| <b>Millet</b>  | 6             | 0            | 2         | 14        | 8         | 0          | 0              |
| <b>Meat (chicken)</b>                                    | <b>37</b>     | 0            | 3         | 1         | <b>14</b> | 1          | 3              |
| <b>Chickpea</b>  | <b>15</b>     | 1            | <b>10</b> | <b>93</b> | <b>14</b> | 5          | 5              |
| <b>Vegetable soybean</b>                                 | <b>18</b>     | 2            | <b>13</b> | <b>28</b> | <b>13</b> | 4          | <b>78</b>      |
| <b>Cabbage</b>   | 3             | 1            | 1         | 10        | 2         | 4          | 2              |
| <b>Tomato</b>  | 2             | 18           | 1         | 3         | 2         | 1          | 7              |
| <b>Cassava leaves</b>                                    | <b>14</b>     | <b>363</b>   | <b>12</b> | 10        | <b>16</b> | <b>40</b>  | <b>203</b>     |
| <b>Moringa leaves</b>                                    | 7             | <b>146</b>   | <b>11</b> | <b>49</b> | 5         | 10         | <b>65</b>      |
| <b>Amaranth (Joseph's coat)</b>                          | 9             | <b>160</b>   | 6         | <b>31</b> | 6         | <b>32</b>  | 17             |
| <b>Jute mallow</b>                                       | 10            | <b>198</b>   | <b>12</b> | 21        | 0         | <b>36</b>  | 36             |
| <b>Spider-flower leaves</b>                              | 8             | <b>112</b>   | 8         | <b>38</b> | 7         | 21         | 14             |
| <b>Vegetable cowpea leaves`</b>                          | 8             | <b>193</b>   | 6         | <b>27</b> | 3         | <b>54</b>  | <b>101</b>     |

RNI source: FAO/WHO 2004; RNI for iron with low bioavailability; RNI for zinc with medium bioavailability  
Nutrient data source: USDA nutrient database and AVRDC IV nutrient data

# Home garden nutrition pack in India



# How Vegetables are vital to healthy human diets

## Nutritional yield per 6x6 m home garden in 2 Indian States

|           |                          | Protein (g) | Beta Carotene (mg) | Vit C (mg) | Iron (mg) |
|-----------|--------------------------|-------------|--------------------|------------|-----------|
|           | RDA for a family of 4    | 7288        | 3212               | 58400      | 38143     |
| Jharkhand | Nutritional yield / year | 5349        | 3898               | 96820      | 9012      |
|           | % RDA met                | 73          | 121                | 166        | 24        |
| Punjab    | Nutritional yield / year | 5205        | 5119               | 96         | 6143      |
|           | % RDA met                | 71          | 159                | 164        | 16        |

- Models met >100% of beta carotene and Vit. C requirements
- Met nearly 3/4<sup>th</sup> of protein and 1/4<sup>th</sup> - 1/5<sup>th</sup> of iron requirements
- Leafy and legume vegetables campaign undertaken
- Nutritional rich recipes and food processing methods for improving iron and protein bioavailability being suggested



**The world's largest public sector  
collection of vegetable germplasm**

|                                   |               |
|-----------------------------------|---------------|
| <b>No. of accessions</b>          | <b>57,282</b> |
| <b>No. of species</b>             | <b>420</b>    |
| <b>No. of countries of origin</b> | <b>154</b>    |

**Not a Green Revolution but a Revolution with Greens!**