



what's the harvest yield of groundnut

The average **groundnut (peanut) harvest yield** varies by region, seed variety, and management practices but generally ranges between 1 to 3 tons per hectare globally for well-managed fields, with typical yields in Africa often being lower than global averages.^{[1] [2] [3]}

Global Yield Ranges

- In the United States, the 2024 forecast yield is about 3,740 pounds per acre (approximately 4.19 tons per hectare), slightly below the country's 10-year average.^{[4] [5]}
- Average yields in Africa vary. For example, South African commercial groundnut yields increased from about 0.9 tons/ha in the early 1990s to around 1.19 tons/ha more recently.^{[6] [7]}
- Improved groundnut varieties in Southern Africa (e.g., Zambia) can yield between 1.5–1.8 tons/ha (early-maturing) and up to 3 tons/ha (late-maturing).^[1]

Actual vs. Potential Yields

- Traditional varieties in many African countries often yield less than 700 kg/ha due to limited inputs, rain dependency, and pests.^{[8] [1]}
- With proper inputs—such as improved seed, irrigation, pest and disease control—commercial yields can exceed 2–3 tons/ha.^{[2] [1]}
- Some regions, such as India’s Andhra Pradesh, report productivity around 1.1 tons/ha for the 2023-24 season.^[9]

Factors Affecting Yield

- Yield is strongly influenced by seed variety, number of weedings, pest and disease pressure, soil fertility, rainfall patterns, and farmer management skills.^{[10] [11] [12] [8]}
- Improved access to certified seed and good farming practices can significantly boost productivity.^[8]

Recent Regional Examples

Region/Country	Average Yield (tons/ha)	Year	Notes
U.S. (2024)	4.19 ^{[4] [5]}	2024	Forecast
South Africa	1.19 ^{[6] [7]}	2024	Avg. commercial
Zambia (Traditional)	<0.7 ^{[1] [8]}	2020s	Smallholder

Region/Country	Average Yield (tons/ha)	Year	Notes
Zambia (Improved)	1.5–3 ^[1]	2020s	Research fields
India	1.1 ^[9]	2023-24	Andhra Pradesh

Most farms in lower-yielding regions can boost yields by adopting better agronomic practices and improved seeds. ^[12] ^[1] ^[8]



Give me the harvest index

The **harvest index** of groundnut (the ratio of economic yield—pods and kernels—to total above-ground biomass, expressed as a percentage) typically ranges between **33% and 38%** under standard cultivation practices. ^[21] ^[22] ^[23]

Reported Harvest Index Values

- Recent agronomic studies in 2023–2024 show variety-dependent harvest index values from 33.4% to 34.4%, with little effect from differences in irrigation schedules or seed treatments. ^[22] ^[23]
- A field experiment reported values of 36.9% to 38.0%, with higher values seen at optimal irrigation levels. ^[21]
- Historically, harvest index values for groundnut rarely exceed 38% under typical management conditions. ^[23] ^[21]

Additional Notes

- Environmental stresses and poor management can reduce the harvest index, while improved genetics and precise irrigation can slightly increase it. ^[23] ^[21]
- The harvest index is a useful indicator of crop partitioning efficiency and is widely used to compare varieties and assess agronomic interventions. ^[22] ^[21] ^[23]



harvest index cowpea

The **harvest index of cowpea** typically ranges from about **27% to 43%**, depending on the variety and growing conditions. Studies show: ^[38] ^[39]

- In evaluations of different cowpea genotypes, harvest index values centered around 26.7% to 42.7% have been recorded, reflecting differences in seed yield relative to total biomass. ^[39] ^[38]
- In breeding programs in the Nigerian Sudan savannas, cowpea varieties showed harvest indices ranging from about 24% to 45%, with newer varieties tending to have higher harvest indices reflecting improved grain yield efficiency. ^[40]

- The harvest index correlates positively with grain yield but may be influenced by the dual-purpose use of cowpea for both grain and fodder, which can moderate increases in harvest index. ^[40]

Thus, the harvest index of cowpea is generally between 0.27 and 0.43 (27% to 43%), varying by genotype and cultivation factors.

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Can you find root to shoot ratio of:

Maize, rice, yam, sorghum, millet, groundnut, cowpea, soybean

Here are the approximate root-to-shoot ratios for the requested crops, based on recent studies and agronomic literature:

- **Maize:** Ranges from about 0.04 to 0.13 (often around 0.1) depending on growth stage and nitrogen availability. ^{[46] [47]}
- **Rice:** Root-to-shoot ratio varies by cultivar and growth stage, roughly around 0.2 to 0.3 in typical conditions. ^{[48] [49]}
- **Yam:** Specific root-to-shoot ratio data is limited, but yam has a relatively high root biomass; in vitro rooting studies show strong root growth indicators without a fixed ratio publicly available. ^[50]
- **Sorghum:** Reported root-to-shoot ratio close to 0.01 in some cases, varying with planting time and environmental conditions. ^[51]
- **Millet:** Root-to-shoot ratios vary; pearl millet can have values around 0.2 to 0.3, influenced by stress and genotype. ^{[52] [53]}
- **Groundnut:** Ratios reported around 0.1 to 0.34, generally higher under phosphorus deficiency stress and varying by genotype. ^[54]
- **Cowpea:** Roughly between 0.1 to 0.3, with intercropping and fertility levels influencing the ratio. ^{[55] [56]}
- **Soybean:** Root-to-shoot ratio typically ranges from about 0.09 to 0.26 depending on variety and growing conditions. ^{[57] [46]}

In general, root-to-shoot ratios reflect the allocation of biomass between roots and above-ground parts, and are influenced by environmental factors, nutrient availability, and crop type.

If a more precise or numeric table is desired, that can be compiled with these data.

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