Plant Diversity in the Human Diet: Weak Phylogenetic Signal Indicates Breadth

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Worldwide, humans have access to a greater range of food plants than does any other species. Examination of phylogenetic patterns in plants consumed by animals has recently uncovered important ecological processes. The same techniques, however, have not been applied to our own species. Here we show that although humans tend to eat more species in certain families (e.g., Rosaceae) and fewer in others (e.g., Orchidaceae), the proportion of edible species in most families is similar to random expectations. Phylogenetic patterning in angiosperm edibility is also weak. We argue that the remarkable breadth of the human diet is the result of humans' huge geographic range, diverse food-collection methods, and ability to process normally inedible items. Humans are thus generalist feeders in the broadest sense. Cross-cultural analyses of diversity in the plant diet of humans could represent a fascinating new field of research linking ecology, anthropology, history, and sociology.

Keywords: edibility, food plants, herbivory, human diet, phylogenetic pattern

As with most hackneyed phrases, there is an element of truth in the saying "Variety is the spice of life." Although globalization may be contributing to the loss of local cultural culinary traditions (Walsh 2007), the average person in a developed country now has access to many more species of food plants than at any other point in history. The concepts of "healthy eating" (Margetts et al. 1997) and "smart foods," the benefits of agricultural diversification and "local foods" (Hinrichs 2003), and the globetrotter's fascination with trying new dishes all refer, explicitly or implicitly, to the number of plant species people eat. But plant diversity, for those who study it in an ecological, evolutionary, or conservation context, is no longer measured solely by lists of species. The understanding of relatedness between species, and the increasing recognition of the importance of intraspecific variation, place all plants on a phylogenetic continuum that reflects ancestral relationships. We now have the opportunity to assess the diversity of plants in the human diet from a phylogenetic perspective. Knowing exactly how much of the tree of life we are eating could have important implications for agriculture, dietary science, and plant conservation.

Food-plant lists

Flowering plants (angiosperms) comprise between 50% and 90% of the total food volume of most human societies, and provide a similar percentage of total energy intake (Ulijaszek 1991, Smit et al. 1999, Aranceta 2001, Burlingame 2003, Lee and Sobal 2003). The rest of humans' diets consists almost entirely of vertebrates, with fungi, algae, and other groups of plants and animals making a very minor contribution (Southgate 1991). But humans do not just eat a huge quantity of plant material; they also consume a significant number of plant species.

Worldwide, it has been estimated that up to 75,000 angiosperm species could be edible out of a total of 200,000 to 400,000, and about 7000 are commonly eaten (Myers 1983). Several global lists of food plants have been published in print form (Vaughan and Geissler 1997, Wiersema and Léon 1999, van Wyk 2005) or online (ANCP 2006, Freedman 2006, GRIN 2006, Katzer 2006), but all have been affected (to varying degrees) by recent changes in plant nomenclature and

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taxonomy. After combining these lists and checking them extensively using online synonym databases (PFAF 2006, Porcher 2006, RBG 2006), we produced a list of 4079 food-plant species.

What qualifies a plant species as food is debatable. Under a narrow definition, food plants may refer to species that are intentionally ingested to provide nutritional or caloric value. Many herbs and spices would not qualify under this definition, although some herbs, when used generously, do provide a significant amount of minerals and vitamins (van Wyk 2005). However, only a very loose definition would include species of strictly medicinal or recreational use. We chose to include plants used as herbs or spices, but exclude plants taken solely as drugs. It should be noted, however, that the lists overlap to a great extent; for example, poppies (*Papaver somniferum*) are in all the categories discussed above: poppy seeds are occasionally ingested in nutritionally significant amounts, but are mostly used in small quantities as a seasoning, and the latex of the seed pods is widely used to produce medicinal drugs and narcotics. If species used solely as herbs and spices had been excluded, the results presented in this article would not have been qualitatively different.

Given the breadth of our full species list, we also analyzed three lists limited to plants of great importance to humans. The most recent and taxonomically accurate treatment of food plants lists 829 species (van Wyk 2005), including all plants critical for human nutrition in some part of the world. The second list is provided by the Germplasm Resources Information Network (GRIN 2006), and includes only the 150 most valuable commercial crops. The shortest list is of the top 30 crop plants worldwide (Janick 1999), the species that together account for more than half of all plant material eaten by humans. All these levels of importance are relevant to analyses of taxonomic and phylogenetic relationships.

Measures for our diet

In recent years, interest in interdisciplinary approaches to the study of human diet has grown. Often, evolutionary and ecological perspectives are used to compare the feeding patterns of humans with those of other species (Milton 1999a, 1999b, Ragir 2000). Animal herbivore generalists, including humans, benefit from a varied diet (Stahl et al. 1984, Bernays et al. 1994, Provenza et al. 2003), one that provides a diverse range of nutrients and reduces the intake of toxins specific to any single food-plant species. Nonetheless, humans completely avoid certain plants that are culturally designated as poisonous, generally on the basis of the presence of secondary compounds (see, e.g., Burrows and Tyrl 2001). Because toxic secondary compounds (such as alkaloids and glycosides) are often specific to certain plant groups (Harborne 1977), one would expect plant lineages with such compounds to be underrepresented in lists of food plants. Similarly, lineages that derive an increase in fitness by producing edible plant parts (e.g., mammalian fruit dispersal), and plants that have high nutritional values for any other reasons, may be expected to be widely consumed, and particularly common as food species (Stahl et al. 1984). Both of these situations, if occurring repeatedly, should result in large deviations from a random distribution of food plants across the angiosperm phylogeny. If such deviations are not observed, the implication would be that humans eat a phylogenetically random selection of plants, which would demonstrate the versatility of hominids in overcoming plant defenses to herbivory.

Dietary breadth measures are key to understanding diet composition (Symons and Beccaloni 1999). So far, these measures have been applied mostly to herbivores that consume a limited range of food species. In particular, for insect herbivores and parasites, dietary breadth measures are referred to as host-range measures. Ideally, such measures take advantage of the growing availability of phylogenetic trees. Where phylogenetic trees are not available, measures of taxonomic breadth can be employed. Taxonomic breadth is limited to the assessment of how many taxa (and at what level—species, genera, families) are part of a consumer's diet. Phylogenetic measures convert these levels into a continuous variable by adding the branch length of a phylogenetic tree trimmed to include only the species in a consumer's diet. Technically, a taxonomic approach can be summarized as a phylogenetic approach in which all genera represent polytomies nested at equal depth in the tree, all families are deeper polytomies containing multiple genera, and so on (Faith 1994).

For the purpose of testing whether a collection of food species is nonrandom, there are at least three methods, answering three different questions (figure 1). Two of them include phylogenetic information. First, on a strictly taxonomic level, the proportion of species used as food in each taxon can be compared with the proportion of all species used as food. If food species are randomly distributed across taxa, roughly the same proportion of species from each family can be expected to be consumed, and the proportion of species in any taxon would not be significantly different from the overall proportion. If toxicity and edibility are phylogenetically conserved traits (i.e., traits that remain consistently present or absent among related members of the phylogenetic tree), multispecific taxa (families, genera) should appear as either edible (most species would be eaten) or inedible (a very small percentage, if any, of the species would be eaten). In this case, the proportions eaten per family would differ widely from the overall proportion. To assess which of these situations is better supported, the total number of families or genera with edible species should be compared with the number expected from random sampling. Here, we randomly selected species from the full list and calculated the number of families or genera represented in the random list of species. Each randomization was done 100,000 times to produce an expected distribution of the number of families or genera containing edible species. From this distribution, we obtained expected medians, 95% ranges, and the position of the observed number of families or genera with edible species within the expected cumulative probability distribution to test whether there was a significant taxonomic pattern.

Another method is to examine whether the species in food-plant lists represent more or less phylogenetic diversity than would be seen in a random list of plants. This is essentially a repetition of the taxonomic method, but instead of considering each taxon as equivalent, the taxon is weighted by how closely it is related to other taxa. If the taxa containing food species are more closely related than would be expected by chance, the total phylogenetic diversity will be low; if they are distantly related, it will be high.

The third method combines the other two, retaining both phylogenetic relatedness and species numbers. In this case, the comparison of the proportion of species from various branches represented in species lists allows some branches to be described as being more edible than others. In this way, one can examine the frequency, extent, and location of shifts in edibility on the angiosperm phylogeny, and how these shifts might relate to particular traits (e.g., fruit morphology).

Ideally, these analyses would be performed at various levels of taxonomic resolution, if phylogenetic trees and data on the number of species in each clade are available. In the case of angiosperms, reliable analyses can be performed both between families and between genera within selected families. The family-level analysis uses a fully dated tree that includes all angiosperm families (Davies et al. 2004) and estimates of species numbers within each family (Stevens 2006); the within-family analysis uses complete trees and numbers of species for each genus of two important food plant families, Fabaceae (pea or bean family) and Rosaceae (rose family), and numbers of species per genus only for a third large family—the Orchidaceae (orchid family) (Lavin et al. 2005, Lewis et al. 2005, Soltis et al. 2005, ILDIS 2006, RBG 2006, Vamosi and Dickinson 2006).

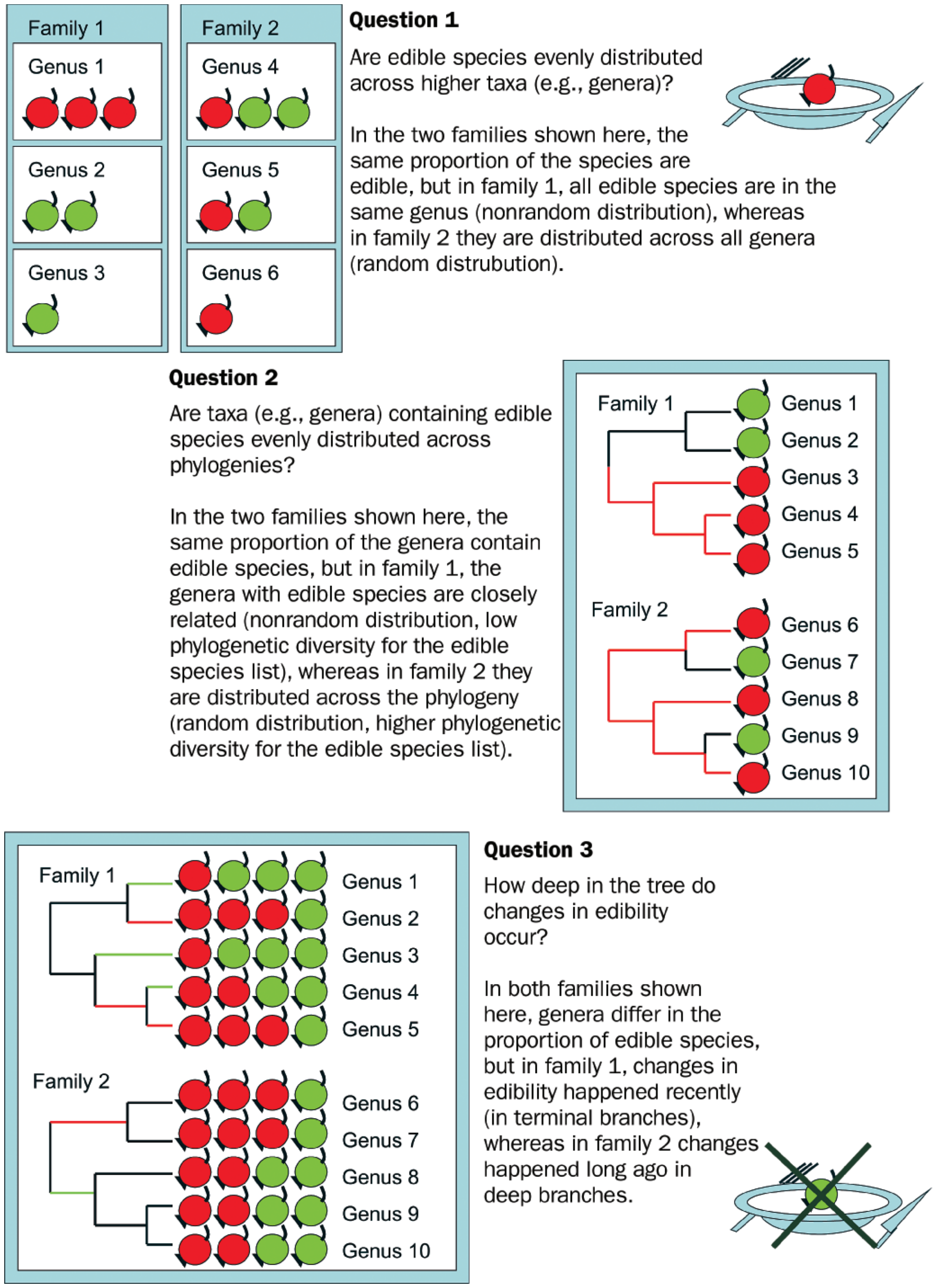

Figure 1. Key questions when searching for patterns in the relatedness of edible species. Red apples represent edible species; green apples, inedible species. In the case of question 2, red branches in the tree are those leading to edible species, and thus are included in the calculation of phylogenetic diversity for edible species lists. In the case of question 3, red and green tree branches represent those branches leading to genera that differ in the proportion of edible species. The numbers of edible and inedible species in the illustrations do not necessarily imply significant differences.

Pattern and randomness in food plants

The proportion of species eaten by humans is similar to that expected from a random distribution for the vast majority of plant families (families represented by data points between the two brown lines in figure 2a); however, several families have many more food species than expected (above the top brown line in figure 2a; e.g., Rosaceae), and in others, food species are greatly underrepresented (below the bottom brown line in figure 2a; e.g., Orchidaceae). Within Rosaceae, several important fruit-producing genera (*Fragaria:* strawberries; *Malus:* apples; *Prunus:* plums, peaches, apricots; *Pyrus:* pears; *Rubus:* brambles) contain significantly more food species than expected, whereas in Fabaceae—the family with the largest number of eaten species—virtually no genera depart significantly from the random expectation (figure 2b, 2c, 2d).

The number of families that contain food-plant species is as expected; similarly, the number of families (18) containing at least one of the top 30 world crops falls within the expected range (18 to 27). However, at intermediate levels (for the 829 and 150 top food-plant lists), the numbers of families containing edible species are slightly lower than expected (70% to 75% of the median), indicating that food plants are moderately clustered within "high-edibility families." Within families, some clustering is noted in Rosaceae and Orchidaceae, but not in Fabaceae (table 1). Indeed, edibility and domestication can appear repeatedly within families, and even within genera (Sanjur et al. 2002, Bohs 2004), often without clear taxonomic patterns. Patterns in phylogenetic diversity yield no significant results, although the observed values are always closer to the lower end of the expected range, which suggests that families and genera with edible representatives are somewhat more closely related than expected (table 1).

A large number of significant shifts in edibility are detected between plant families, but very few within families. For example, the odds that a bramble (*Rubus*) or rosehip (*Rosa*) will be eaten by humans are significantly higher than for any other species in the sister clade for these two genera. Such significant differences are not found anywhere in the legume tree, but do appear repeatedly at higher levels in the angiosperm phylogeny (figure 3). From these results, it can be concluded that the most important phylogenetic pattern in edibility appears between families, and often even deeper within the tree, between branches containing several families each. This may be a reflection of very broad functional differences among species suitable for eating.

Overcoming barriers to edibility

The very weak phylogenetic signal observed in our analyses reflects the remarkable breadth of the human plant diet. How does this fit with the fact that some plant lineages are poisonous? There are at least three explanations: (1) toxic secondary compounds are often limited to certain plant parts (while other parts of the same plant are edible); (2) poisonous or otherwise inedible plant parts can be eaten after processing (Wrangham et al. 1999, Wrangham and Conklin-Brittain 2003); and (3) secondary compounds produced by plants to deter herbivory can actually encourage limited use as food in humans when consumed as herbs or spices (e.g., in Piperaceae [pepper family], species are eaten for reasons other than calorific value).

The phylogenetic patterns we detected are usually easily explained. For example, most Rosaceae genera are either over- or underrepresented in terms of the proportion of species that are edible, and this relates to fruit morphology. Species within genera that produce fleshy fruits for vertebrate dispersal have significantly higher odds of being included in the human diet than do species belonging to Rosaceae genera that are dispersed by other means ($F_{1,80}$ = 15.7; p = 0.0002; data from Vamosi and Dickinson [2006]). The clear clustering observed in plants that produce edible fruit and nuts shows that the adaptations necessary for vertebrate dispersal have appeared in a limited number of angiosperm lineages, and tend to be conserved. Fruits

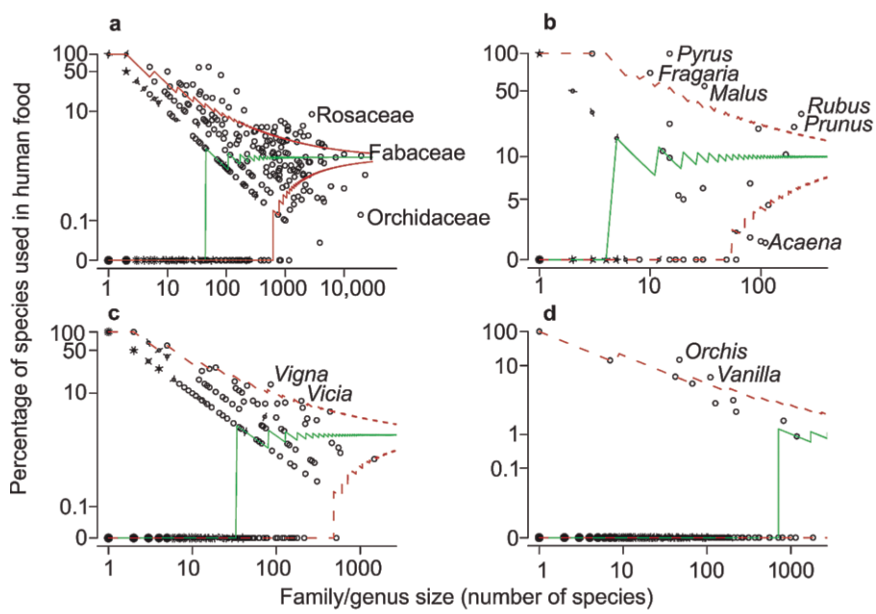

Figure 2. Testing whether more or fewer species than expected are eaten by humans in angiosperm families, and in genera from selected families for (a) all angiosperm families, (b) genera in Rosaceae, (c) genera in Fabaceae, and (d) genera in Orchidaceae. Families or genera represented by points falling between the brown lines conform to random expectations for percentage of species eaten. The median (in green) and 95% confidence interval (in brown) were estimated from the hypergeometric distribution with the p *values adjusted for multiple comparisons. Data are based on a total list of 4079 angiosperm species used in human food.*

Table 1. Phylogenetic patterns in food plant lists.

Species list	Number of families or genera with edible species: Observed	Expected median (95% confidence interval)	p	Percentage of total phylogenetic diversity: Observed	Expected median (95% confidence interval)	p
Family						
4079 species (composite list)	236	225 (214 to 236)	–	55.8	56.6 (55.1 to 58.1)	–
Top 829 food species (van Wyk 2005)	112	147 (136 to 158)	***	27.7	28.7 (27.4 to 30.0)	–
Top 150 food species (GRIN 2006)	48	68 (60 to 77)	***	13.0	13.2 (12.3 to 14.1)	–
World's top 30 crops (Janick 1999)	18	22 (18 to 27)	–	5.0	5.2 (4.7 to 5.7)	–
Genera						
Fabaceae (ILDIS 2006)	121	131 (119 to 144)	–	65.8	70.0 (63.7 to 75.5)	–
Rosaceae (Vamosi and Dickinson 2006)	32	44 (37 to 50)	***	75	81 (73 to 89)	–
Orchidaceae (RBG 2006)	11	21 (17 to 24)	***	na	na	na

na, not available.

Note: All expectations were from 100,000 randomizations. For the number of families or genera with edible species, species were chosen at random without replacement from the complete species lists. The randomization for phylogenetic diversity kept the probability of selecting any family or genus equal (i.e., the number of families with edible species is kept constant, but their identity is changed). The alternative of sampling proportional to the number of species within a genus or family gave the same qualitative results (i.e., no significant pattern for any of the analyses). In Rosaceae, where a fully dated tree is not yet available, phylogenetic diversity was estimated using the number of extant nodes. In Orchidaceae, the genera with eaten species are too few to justify a phylogenetic approach. Significance: –, $0.05 < p$; ***, $p < 0.001$.

and nuts consumed by humans belong to the same groups of plants that are dispersed (Fleming and Estrada 1993) or scatter hoarded in the wild (Vander Wall 2001) by mammals and birds.

Adaptations for vertebrate dispersal are also relevant when separating those species that can be eaten raw from those that require processing. There is a strong phylogenetic bias in terms of which families are eaten raw, and most major families fall either in the "mostly edible raw" category (fruit or fresh vegetables) or in the "seldom eaten raw" category (cereals and other starches, cooking vegetables). Of the top 828 species eaten, 60% are edible raw, but as many as 63 of 64 species of Rosaceae are eaten raw. Commonly eaten species of Fabaceae, Poaceae, and Amaranthaceae are rarely eaten raw (15%, 30%, and 4%, respectively; data from van Wyk [2005]).

The low level of edibility observed in Orchidaceae may be attributed to the fact that orchids are often rare or small. Even though many species may be edible, plant size and abundance presumably influence whether a plant is included on food species lists. Studies have found that in nonhuman mammalian herbivores, chemical defense is seldom as important as food-plant apparency when determining dietary inclusion (Feeny 1976, Danell et al. 1991, Dearing 1996, Moore and Foley 2005).

Phylogenetic analysis can be used to highlight critical steps in the evolution of human nutrition, marked by the successive elimination of biochemical, geographical, and taxonomic barriers. From the weak patterns observed in our study, it is clear that humans have broken down biochemical barriers in their quest for food. Extensive cooking and preparation of food opened up new nutritional food sources, and concomitantly reduced opportunities for parasites and disease (Wrangham et al. 1999, Wrangham and Conklin-Brittain 2003). Genetic technology offers opportunities to further manipulate our food plants and to erode taxonomic barriers completely. Although these barriers still exist, phylogenetic diversity can be added as a new step in the cascade of genetic diversity, chemical diversity, and nutritional value to describe human food.

Globalization and diet breadth

Humans have a strikingly diverse plant diet, but individuals and populations in a given region may not. However, the intensification and extensification of global trade have greatly increased the diversity of plants to which humans have access. Technology—refrigeration, hydroponics, and integrated pest management—allows most species to be grown anywhere in the world, or at least to be transported from where they are grown. This creates opportunities for increasing the number and the diversity of species consumed by each person.

Although it is often argued that globalization leads to uniformity in human diets (e.g., Pingali 2007), it is becoming increasingly obvious that the average human diet comprises more species now than ever before. Indeed, the ingredients of a Big Mac hamburger are considered varied enough to make the price of a Big Mac relevant in economic comparisons between countries ("the Big Mac index"; Woodall 1986). We therefore thought it would be interesting to list the plant species that go into a McDonald's meal.

A typical McDonald's meal—a Big Mac accompanied by french fries and coffee—contains at least 19 plant species from 12 families (table 2). These species originate in all of the

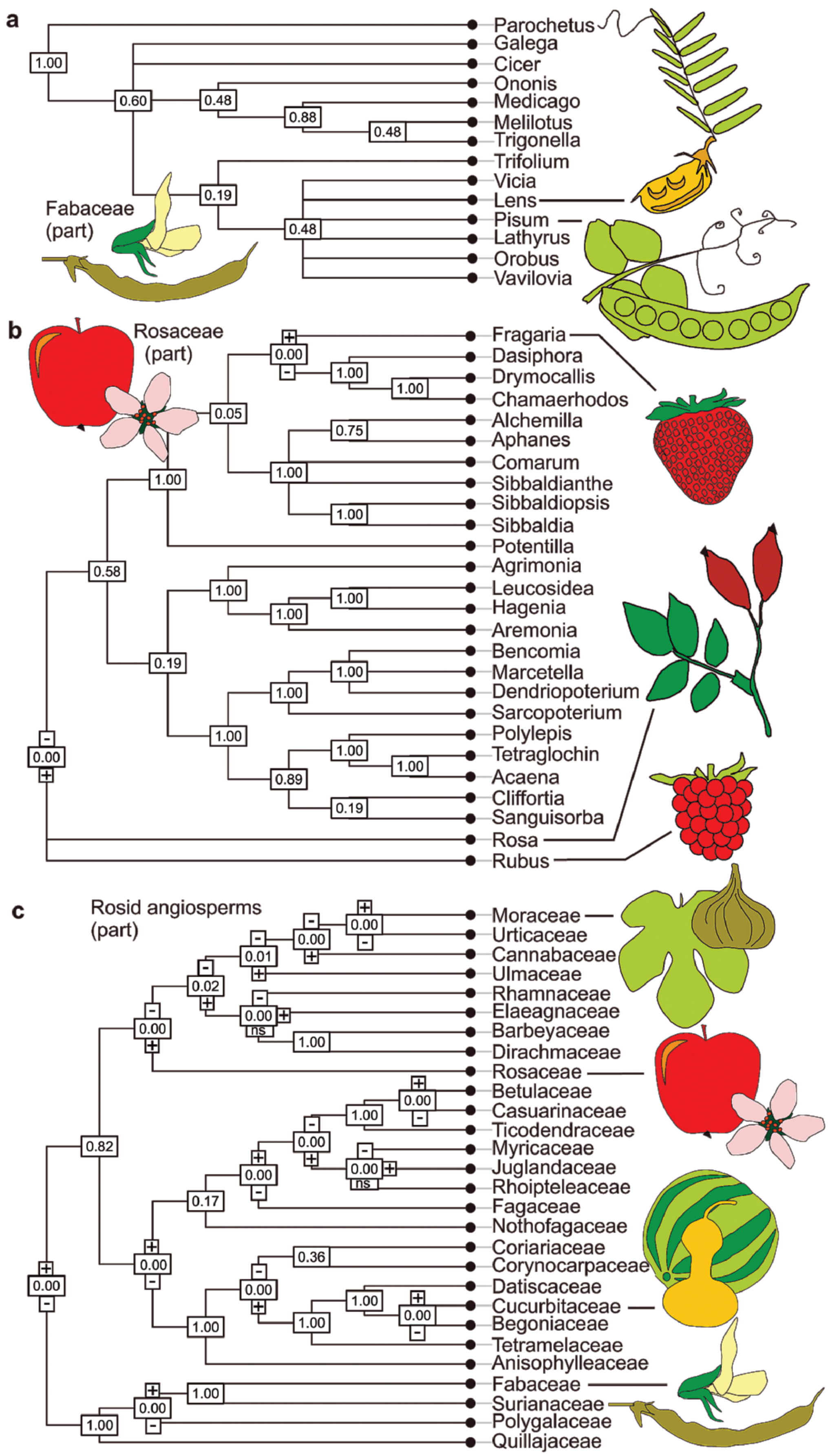

Figure 3. Changes in edibility mapped onto plant phylogenies. Where plants in one branch of a phylogenetic tree are at least twice as likely to be on our food list, compared with the sister branch, the branches are marked with plus and minus signs, respectively. (a) A portion of a legume (Fabaceae) genus-level supertree; (b) a portion of the rose family (Rosaceae) genus-level supertree; and (c) a portion of the angiosperm family-level phylogeny containing Rosaceae and Fabaceae. The value shown at each node is the probability value that the descendant clades have significantly different proportions of edible species (Fisher test, adjusted for multiple comparisons using the false detection rate test; García 2004).

Table 2. Plant species in a Big Mac meal with coffee.

Common name	Species	Family	Origin	Use
Barley	*Hordeum vulgare*	Poaceae	Turkey/Iran	Bun
Cotton (seed for oil)	*Gossypium hirsutum*	Malvaceae	Multiple	Seasoning oil
Cucumber	*Cucumis sativus*	Cucurbitaceae	India	Sauce, pickle slices
Garlic	*Allium sativum*	Alliaceae	Mediterranean	Sauce
Lettuce	*Lactuca sativa*	Asteraceae	Mediterranean	Fresh
Maize	*Zea mays*	Poaceae	Mexico/ Central America	Bun, sauce, oil
Mustard	*Brassica juncea*	Brassicaceae	India	Sauce
Onion	*Allium cepa*	Liliaceae	Turkey/Iran	Dehydrated, sauce
Chili pepper	*Capsicum annuum*	Solanaceae	Mexico/ Central America	Sauce
Pepper (black)	*Piper nigrum*	Piperaceae	India	Seasoning
Potatoes	*Solanum tuberosum*	Solanaceae	Andes	Fries
Sesame	*Sesamum indicum*	Pedaliaceae	Multiple	Bun
Soybean	*Glycine max*	Fabaceae	China	Bun, sauce, seasoning, cheese, fries
Sugar (cane or beet)	*Saccharum officinarum* *Beta vulgaris*	Poaceae Amaranthaceae	New Guinea Mediterranean	Sauce
Tomatoes	*Lycopersicon esculentum*	Solanaceae	Mexico/ Central America	Ketchup
Turmeric	*Curcuma longa*	Zingiberaceae	Southeast Asia	Sauce, pickle slices
Wheat	*Triticum aestivum*	Poaceae	Turkey/Iran	Bun, fries
Rape, sunflower, cotton, or maize	*Brassica rapa* *Helianthus annuus*	Brassicaceae Asteraceae	Mediterranean California	Oil
Coffee	*Coffea* spp.	Rubiaceae	Ethiopia	Coffee

Note: Information is from the McDonald's US Web site (McDonald's USA 2006). Some items (ketchup, coffee) are optional. The oil can be from four sources; as cotton and maize are included in other products, we have added only one extra species to the list (either sunflower or rape). Similarly, only one species was counted for sugar (either cane or beet). Ingredients we could not adequately identify were "spice and spice extractives" and "pickles" in the Big Mac sauce ("pickles" are presumably similar to pickle slices); "spices" in the tomato ketchup; and "vinegar" in several places. Origin areas are as listed by Vavilov (1926), plus California and New Guinea, which were not recognized by Vavilov (1926).

eight global centers of cultivated plant diversity identified by Vavilov (1926) and largely confirmed by more recent reviews (Harlan 1971, Clement 1989, Smith 1995), which means that a Big Mac is quite an apt symbol of globalization. That a single meal contains about 20 species is impressive, given that some human societies—those that are largely unaffected by current globalization trend—commonly include only 50 to 100 plant species in their entire diet (Stahl et al. 1984).

Phylogenetics, conservation, and the search for new foods

In the same way that phylogenetic analysis of herbivore and pathogen diet breadth is beginning to inform forestry practices and biological control decisions (Wapshere 1974, Gilbert and Webb 2007), data from the phylogenetic analysis of the human diet can be used to inform food scientists about new potential crop plants by pinpointing clades where these are most likely to occur. If humans wish to expand their culinary horizons, phylogenetic analysis can help pinpoint new major food sources for cultivation by revealing information on families (or branches) from which a disproportionately high number of species is already harvested.

Exploring the functionality of biodiversity for our own nutritional and culinary benefit may provide a useful focus for conservation efforts. Indeed, at present, more than half of all angiosperm phylogenetic diversity at the family level will be conserved simply by maintaining healthy populations of species within the human diet (table 1). However, even a purely utilitarian view of conservation has not prevented the unsustainable harvest of many species for medicinal uses or for silviculture (as happened on Easter Island).

A broader issue relevant to the conservation of food plants is the conservation of varietal forms, in particular, the wild types of already domesticated crops. Intraspecific variation in food-plant species not only produces an enticing array of products but also provides a basis to look at interesting, fundamental evolutionary and genetics questions. Thus far unused varieties could help researchers combat pests and diseases, identify genes responsible for particular traits, and examine how phenotypic plasticity relates to genetic diversity and the ability to respond to selection pressures. The importance of intraspecific variation is further highlighted by the fact that domestication has taken place several times independently within individual species (e.g., the common bean; Heiser 1990, Simpson and Ogorzaly 2001). Insofar as varieties are evolutionarily separate lineages, phylogenetic pattern can be used to pinpoint which varieties could be relevant in a particular context.

Conclusions

The breadth of the human diet has been emphasized in other reports (e.g., Myers 1983), but a broad diet (in terms of number of species) does not mean that most groups of plants are eaten. Implicit in previous work (e.g., Vaughan and Geissler 1997) is the idea that although humans consume many plant species, food plants are clustered at the very least in a moderate number of families. We show here that this is not the case. Other factors besides phylogenetics must be invoked to explain which plants we eat. These factors—including species' dominance in vegetation and plant size, corroborated in plant apparency—are yet to be assessed properly. Clearly, phylogenetic pattern exists in the distribution of specific nutrients (starch, oils, protein, and vitamins), and even more so in flavor-giving compounds, but on a complete food-plant list, these categories are likely to be combined for a balanced and tasty diet. The results presented in this article are a reflection of how phylogenetically comprehensive, rather than just broad, the human diet is. Future comparisons with the diet breadth of other species may go further in suggesting the role that an increase in potential food items had in hominid evolution.

Acknowledgments

We thank Ken Fern, Robert Freedman, Rafael Govaerts, Gernot Katzer, Michel Porcher, and Peter Stevens for making available online food-plant lists or full species numbers for plant families or genera. We also thank Brigitte Braschler, Steven Chown, Nokwanda Makunga, Brian Schrire, and three anonymous referees for discussion or comments on earlier versions. This project was funded by Stellenbosch University and DST-NRF Centre of Excellence for Invasion Biology postdoctoral grants to Ş. P. and J. R. U. W. (Department of Science and Technology–National Research Foundation).

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Supplementary material is online at *http://academic.sun.ac.za/supplementary.asp.*

doi:10.1641/B580209
Include this information when citing this material.

"The female praying mantis just... oh, don't look. Love is cruel."

Supplementary Material for:

Procheş, Ş.; Wilson, J. R. U.; Vamosi, J. C.; Richardson, D. M. (2008) Plant Diversity in the Human Diet: Weak Phylogenetic Signal Indicates Remarkable Breadth *BioScience* 58: 151–159.

Contents

Notes

The full list of species eaten was calculated from several sources (ANCP 2006, Freedman 2006, GRIN 2006, Katzer 2006; van Wyk 2005, Vaughan and Geissler 1997, Wiersema and Léon 1999), and checked for synonyms (PFAF 2006, Porcher 2006, Royal Botanical Gardens Kew 2006). The lower lists of number of species eaten are from: top 829, van Wyk (2005); top 150, GRIN (2006); top 30, Janick (1999). The total species richness of plant families is from Royal Botanical Gardens Kew, (2006); of Fabaceae is from (ILDIS 2006; Lewis et al. 2005); of Rosaceae from Vamosi and Dickinson (2006); of Orchidaceae from Royal Botanical Gardens Kew, (2006).

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Table S1a Distribution of edible species among plant families

Family	# species	full list	top 829	top 150	top 30
Acanthaceae	3500	10	0	0	0
Achariaceae	145	1	1	0	0
Achatocarpaceae	7	0	0	0	0
Acoraceae	2	1	0	0	0
Actinidiaceae	355	8	5	1	0
Adoxaceae	200	21	3	0	0
Aextoxicaceae	1	0	0	0	0
Agapanthaceae	9	0	0	0	0
Agavaceae	637	28	2	0	0
Aizoaceae	2020	16	2	0	0
Akaniaceae	1	0	0	0	0
Alismataceae	10	5	1	0	0
Alliaceae	81	35	8	2	1
Alseuosmiaceae	795	0	0	0	0
Alstroemeriaceae	165	6	0	0	0
Altingiaceae	13	0	0	0	0
Alzateaceae	2	0	0	0	0
Amaranthaceae	2050	75	23	3	1
Amaryllidaceae	800	6	0	0	0
Amborellaceae	1	0	0	0	0
Anacardiaceae	985	61	14	5	1
Anarthriaceae	11	0	0	0	0
Ancistrocladaceae	12	0	0	0	0
Anisophylleaceae	34	1	0	0	0
Annonaceae	2220	35	8	0	0
Aphanopetalaceae	2	0	0	0	0
Aphloiaceae	1	0	0	0	0
Aphyllanthaceae	1	0	0	0	0
Apiaceae	3713	105	23	3	0
Apocynaceae	4555	56	3	0	0
Aponogetonaceae	43	3	1	0	0
Aquifoliaceae	405	9	1	1	0
Araceae	4025	53	9	1	0
Araliaceae	1450	13	4	0	0
Aralidiaceae	1	0	0	0	0
Arecaceae	2000	112	22	4	1
Argophyllaceae	17	0	0	0	0
Aristolochiaceae	480	5	0	0	0
Asparagaceae	295	13	1	1	0
Asphodelaceae	785	7	0	0	0
Asteliaceae	36	1	0	0	0
Asteraceae	22750	172	37	5	1
Asteropeiaceae	8	0	0	0	0
Atherospermataceae	16	2	0	0	0
Aucubaceae	2	1	0	0	0
Austrobaileyaceae	9	0	0	0	0
Balanopaceae	50	0	0	0	0
Balsaminaceae	1001	1	0	0	0
Barbeuiaceae	1	0	0	0	0
Barbeyaceae	1	0	0	0	0
Basellaceae	20	4	3	0	0
Bataceae	2	1	0	0	0
Begoniaceae	1401	3	0	0	0
Berberidaceae	701	24	0	0	0

Table S1a Distribution of edible species among plant families

Family	# species	full list	top 829	top 150	top 30
Berberidopsidaceae	3	0	0	0	0
Betulaceae	110	13	4	1	0
Biebersteiniaceae	5	0	0	0	0
Bignoniaceae	800	8	0	0	0
Bixaceae	5	1	1	0	0
Blandfordiaceae	4	0	0	0	0
Bonnetiaceae	35	0	0	0	0
Boraginaceae	2635	34	3	0	0
Boryaceae	12	0	0	0	0
Brassicaceae	4130	111	25	6	2
Bretschneideraceae	1	0	0	0	0
Bromeliaceae	1400	4	1	1	0
Brunelliaceae	55	0	0	0	0
Bruniaceae	75	0	0	0	0
Burmanniaceae	126	0	0	0	0
Burseraceae	550	17	4	0	0
Butomaceae	1	1	0	0	0
Buxaceae	70	1	0	0	0
Byblidaceae	6	0	0	0	0
Cabombaceae	6	1	1	0	0
Cactaceae	1500	60	5	0	0
Calceolariaceae	260	0	0	0	0
Calycanthaceae	11	2	0	0	0
Calyceraceae	60	0	0	0	0
Campanulaceae	1100	20	0	0	0
Campynemanthaceae	4	0	0	0	0
Canellaceae	13	2	0	0	0
Cannabaceae	170	10	2	2	0
Cannaceae	19	2	1	0	0
Caprifoliaceae	220	9	0	0	0
Cardiopteridaceae	43	1	0	0	0
Caricaceae	34	20	6	1	0
Carlemanniaceae	5	0	0	0	0
Caryocaraceae	21	6	0	0	0
Caryophyllaceae	2200	11	1	0	0
Casuarinaceae	95	1	0	0	0
Celastraceae	1211	11	0	0	0
Centrolepidaceae	35	0	0	0	0
Cephalotaceae	1	0	0	0	0
Ceratophyllaceae	6	0	0	0	0
Cercidiphyllaceae	2	0	0	0	0
Chloranthaceae	75	3	2	0	0
Chrysobalanaceae	460	17	1	0	0
Circaeasteraceae	1	0	0	0	0
Cistaceae	175	2	0	0	0
Clethraceae	95	2	0	0	0
Clusiaceae	1050	32	12	0	0
Cochlospermaceae	15	0	0	0	0
Colchicaceae	226	3	0	0	0
Columelliaceae	4	0	0	0	0
Combretaceae	500	15	2	0	0
Commelinaceae	658	11	0	0	0
Connaraceae	180	0	0	0	0
Convolvulaceae	1601	22	3	1	1
Coriariaceae	5	3	0	0	0
Cornaceae	85	13	1	0	0

Table S1a Distribution of edible species among plant families

Family	# species	full list	top 829	top 150	top 30
Corynocarpaceae	6	1	0	0	0
Costaceae	110	1	0	0	0
Crassulaceae	1370	13	0	0	0
Crossosomataceae	12	0	0	0	0
Crypteroniaceae	10	0	0	0	0
Ctenolophonaceae	4	0	0	0	0
Cucurbitaceae	845	58	25	4	1
Cunoniaceae	280	2	0	0	0
Cyclanthaceae	225	0	0	0	0
Cymodoceaceae	16	0	0	0	0
Cyperaceae	4350	12	1	0	0
Cyrillaceae	2	0	0	0	0
Daphniphyllaceae	10	0	0	0	0
Dasypogonaceae	16	0	0	0	0
Datiscaceae	2	0	0	0	0
Degeneriaceae	2	0	0	0	0
Desfontainiaceae	1	0	0	0	0
Diapensiaceae	18	0	0	0	0
Dichapetalaceae	165	0	0	0	0
Didiereaceae	16	0	0	0	0
Didymelaceae	2	0	0	0	0
Diegodendraceae	1	0	0	0	0
Diervillaceae	16	0	0	0	0
Dilleniaceae	300	9	0	0	0
Dioncophyllaceae	3	0	0	0	0
Dioscoreaceae	870	26	7	3	1
Dipterocarpaceae	680	5	1	0	0
Dirachmaceae	1	0	0	0	0
Donatiaceae	2	0	0	0	0
Doryanthaceae	2	0	0	0	0
Droseraceae	1	1	0	0	0
Drosophyllaceae	115	0	0	0	0
Ebenaceae	490	26	7	2	0
Ecdeiocoleaceae	2	0	0	0	0
Elaeagnaceae	45	8	2	0	0
Elaeocarpaceae	605	7	2	0	0
Elatinaceae	35	0	0	0	0
Emblingiaceae	1	0	0	0	0
Ericaceae	3995	64	9	4	0
Eriocaulaceae	1160	0	0	0	0
Erythroxylaceae	240	2	0	0	0
Escalloniaceae	68	0	0	0	0
Eucommiaceae	1	0	0	0	0
Euphorbiaceae	5970	28	5	1	1
Euphroniaceae	2	0	0	0	0
Eupomatiaceae	3	0	0	0	0
Eupteleaceae	2	1	0	0	0
Fabaceae	19400	323	65	10	3
Fagaceae	670	36	6	1	0
Flagellariaceae	4	1	0	0	0
Fouquieriaceae	11	0	0	0	0
Francoaceae	2	0	0	0	0
Frankeniaceae	90	1	0	0	0
Fumariaceae	17	5	0	0	0
Geissolomataceae	1	0	0	0	0
Gelsemiaceae	11	0	0	0	0

Table S1a Distribution of edible species among plant families

Family	# species	full list	top 829	top 150	top 30
Gentianaceae	1655	5	0	0	0
Geraniaceae	805	11	0	0	0
Gesneriaceae	3870	1	0	0	0
Gisekiaceae	1	1	0	0	0
Gomortegaceae	1	1	0	0	0
Goodeniaceae	400	2	0	0	0
Goupiaceae	2	0	0	0	0
Griseliniaceae	6	0	0	0	0
Grossulariaceae	150	34	11	3	0
Grubbiaceae	5	0	0	0	0
Gunneraceae	45	1	0	0	0
Gyrostemonaceae	18	0	0	0	0
Haemodoraceae	116	1	0	0	0
Halophytaceae	1	0	0	0	0
Haloragaceae	145	0	0	0	0
Hamamelidaceae	82	1	0	0	0
Hanguanaceae	6	0	0	0	0
Heliconiaceae	150	2	0	0	0
Helwingiaceae	3	1	0	0	0
Hemerocallidaceae	85	5	0	0	0
Hernandiaceae	55	0	0	0	0
Hesperocallidaceae	2	0	0	0	0
Himantandraceae	2	0	0	0	0
Huaceae	3	0	0	0	0
Humiriaceae	50	2	0	0	0
Hyacinthaceae	770	7	0	0	0
Hydatellaceae	20	0	0	0	0
Hydnoraceae	7	1	0	0	0
Hydrangeaceae	190	2	0	0	0
Hydrocharitaceae	116	2	0	0	0
Hydroleaceae	2	1	1	0	0
Hypericaceae	20	2	0	0	0
Hypoxidaceae	560	2	0	0	0
Hypseocharitaceae	220	0	0	0	0
Icacinaceae	149	6	0	0	0
Illiciaceae	42	0	0	0	0
Iridaceae	1870	21	1	0	0
Irvingiaceae	10	2	0	0	0
Iteaceae	18	0	0	0	0
Ixerbaceae	1	0	0	0	0
Ixioliriaceae	3	0	0	0	0
Ixonanthaceae	21	0	0	0	0
Joinvilleaceae	2	0	0	0	0
Juglandaceae	50	30	6	3	0
Juncaceae	430	1	1	0	0
Juncaginaceae	14	1	0	0	0
Kingdoniaceae	1	0	0	0	0
Kirkiaceae	6	0	0	0	0
Koeberliniaceae	1	0	0	0	0
Krameriaceae	18	0	0	0	0
Lacistemataceae	14	0	0	0	0
Lactoridaceae	1	0	0	0	0
Lamiaceae	7173	111	33	1	0
Lanariaceae	1	0	0	0	0
Lardizabalaceae	36	8	0	0	0
Lauraceae	2500	32	8	2	0

Table S1a Distribution of edible species among plant families

Family	# species	full list	top 829	top 150	top 30
Laxmanniaceae	178	2	0	0	0
Lecythidaceae	310	14	2	1	0
Ledocarpaceae	12	0	0	0	0
Lentibulariaceae	320	1	0	0	0
Lepidobotryaceae	3	0	0	0	0
Lepuropetalaceae	1	0	0	0	0
Lilaeaceae	1	0	0	0	0
Liliaceae	635	27	6	0	0
Limnanthaceae	8	0	0	0	0
Limnocharitaceae	7	1	1	0	0
Linaceae	300	1	1	0	0
Linnaeaceae	36	0	0	0	0
Loasaceae	265	2	0	0	0
Lobeliaceae	1200	2	0	0	0
Loganiaceae	420	8	1	0	0
Lophopyxidaceae	1	0	0	0	0
Loranthaceae	950	1	0	0	0
Lowiaceae	15	0	0	0	0
Luzuriagaceae	5	0	0	0	0
Lythraceae	622	12	3	0	0
Mackinlayaceae	67	0	0	0	0
Maesaceae	150	2	0	0	0
Magnoliaceae	225	4	0	0	0
Malpighiaceae	1250	14	1	0	0
Malvaceae	4225	114	20	4	1
Marantaceae	550	4	1	0	0
Marcgraviaceae	130	0	0	0	0
Martyniaceae	16	5	0	0	0
Mayacaceae	1	0	0	0	0
Medusagynaceae	1	0	0	0	0
Medusandraceae	2	0	0	0	0
Melanophyllaceae	7	0	0	0	0
Melanthiaceae	170	0	0	0	0
Melastomataceae	4570	11	0	0	0
Meliaceae	621	12	2	0	0
Melianthaceae	11	1	0	0	0
Memecylaceae	435	0	0	0	0
Menispermaceae	420	7	0	0	0
Menyanthaceae	40	4	0	0	0
Molluginaceae	116	3	0	0	0
Monimiaceae	200	1	0	0	0
Montiniaceae	5	0	0	0	0
Moraceae	1100	60	14	4	0
Morinaceae	13	0	0	0	0
Moringaceae	12	1	1	0	0
Muntingiaceae	3	1	0	0	0
Musaceae	35	7	4	3	1
Myodocarpaceae	19	0	0	0	0
Myricaceae	57	5	1	0	0
Myristicaceae	475	4	1	1	0
Myrothamnaceae	2	0	0	0	0
Myrsinaceae	1435	10	0	0	0
Myrtaceae	4620	111	24	2	0
Nartheciaceae	41	3	0	0	0
Nelumbonaceae	2	2	2	0	0
Nepenthaceae	90	1	0	0	0

Table S1a Distribution of edible species among plant families

Family	# species	full list	top 829	top 150	top 30
Neuradaceae	10	0	0	0	0
Nitrariaceae	9	2	0	0	0
Nothofagaceae	35	0	0	0	0
Nyctaginaceae	395	8	2	0	0
Nymphaeaceae	58	10	1	0	0
Nyssaceae	22	3	0	0	0
Ochnaceae	494	2	0	0	0
Olacaceae	57	4	1	0	0
Oleaceae	615	17	5	1	0
Oliniaceae	5	0	0	0	0
Onagraceae	650	10	0	0	0
Oncothecaceae	2	0	0	0	0
Orchidaceae	19000	25	1	1	0
Orobanchaceae	2061	8	0	0	0
Oxalidaceae	770	14	3	0	0
Paeoniaceae	33	2	0	0	0
Pandaceae	15	0	0	0	0
Pandanaceae	805	8	3	0	0
Papaveraceae	759	5	1	1	0
Paracryphiaceae	1	0	0	0	0
Parnassiaceae	50	0	0	0	0
Passifloraceae	804	25	8	0	0
Paulowniaceae	6	0	0	0	0
Pedaliaceae	70	5	1	1	0
Peganaceae	6	0	0	0	0
Pellicieraceae	1	0	0	0	0
Penaeaceae	20	0	0	0	0
Pennantiaceae	4	0	0	0	0
Pentadiplandraceae	1	0	0	0	0
Pentaphragmataceae	30	1	1	0	0
Pentaphylacaceae	234	0	0	0	0
Penthoraceae	3	1	0	0	0
Peridiscaceae	9	0	0	0	0
Petrosaviaceae	4	0	0	0	0
Phellinaceae	12	0	0	0	0
Philydraceae	5	0	0	0	0
Phrymaceae	234	0	0	0	0
Phyllanthaceae	1745	22	7	0	0
Phyllonomaceae	4	0	0	0	0
Physenaceae	2	0	0	0	0
Phytolaccaceae	64	5	1	0	0
Picramniaceae	46	0	0	0	0
Picrodendraceae	80	1	0	0	0
Piperaceae	2015	15	6	2	0
Pittosporaceae	200	1	0	0	0
Plantaginaceae	1700	17	2	0	0
Platanaceae	10	0	0	0	0
Plocospermataceae	1	0	0	0	0
Plumbaginaceae	836	0	0	0	0
Poaceae	10000	177	53	12	9
Podostemaceae	270	1	0	0	0
Polemoniaceae	385	0	0	0	0
Polygalaceae	1045	5	0	0	0
Polygonaceae	1100	51	8	2	0
Polyosmaceae	60	0	0	0	0
Pontederiaceae	33	2	0	0	0

Table S1a Distribution of edible species among plant families

Family	# species	full list	top 829	top 150	top 30
Portulacaceae	397	21	3	0	0
Posidoniaceae	9	0	0	0	0
Potamogetonaceae	102	1	0	0	0
Primulaceae	900	4	0	0	0
Proteaceae	1600	14	2	0	0
Pteridophyllaceae	1	0	0	0	0
Pterostemonaceae	3	0	0	0	0
Putranjivaceae	210	0	0	0	0
Quiinaceae	55	0	0	0	0
Quillajaceae	3	0	0	0	0
Ranunculaceae	2525	19	2	0	0
Rapateaceae	94	0	0	0	0
Resedaceae	75	1	0	0	0
Restionaceae	520	0	0	0	0
Rhabdodendraceae	3	0	0	0	0
Rhamnaceae	925	27	8	0	0
Rhizophoraceae	149	4	0	0	0
Rhoipteleaceae	1	0	0	0	0
Rhynchocalycaceae	1	0	0	0	0
Roridulaceae	2	0	0	0	0
Rosaceae	2830	253	63	16	1
Rousseaceae	13	0	0	0	0
Rubiaceae	10000	43	4	3	0
Ruppiaceae	10	0	0	0	0
Ruscaceae	475	12	0	0	0
Rutaceae	1815	79	33	12	1
Sabiaceae	100	0	0	0	0
Salicaceae	1010	19	6	0	0
Salvadoraceae	11	3	0	0	0
Santalaceae	990	11	0	0	0
Sapindaceae	1580	46	11	0	0
Sapotaceae	1100	53	15	1	0
Sarcobataceae	2	0	0	0	0
Sarcolaenaceae	60	0	0	0	0
Sarraceniaceae	15	0	0	0	0
Saururaceae	6	2	1	0	0
Saxifragaceae	630	5	0	0	0
Scheuchzeriaceae	1	0	0	0	0
Schisandraceae	50	3	1	0	0
Schlegeliaceae	28	0	0	0	0
Scrophulariaceae	1895	5	0	0	0
Setchellanthaceae	1	0	0	0	0
Simaroubaceae	95	4	0	0	0
Simmondsiaceae	2	2	0	0	0
Siparunaceae	75	0	0	0	0
Sladeniaceae	3	0	0	0	0
Smilacaceae	323	17	2	0	0
Solanaceae	2460	93	20	5	2
Sphaerosepalaceae	18	0	0	0	0
Sphenocleaceae	2	0	0	0	0
Sphenostemonaceae	10	0	0	0	0
Stachyuraceae	5	0	0	0	0
Staphyleaceae	45	3	0	0	0
Stegnospermaceae	3	0	0	0	0
Stemonaceae	27	1	0	0	0
Stemonuraceae	80	0	0	0	0

Table S1a Distribution of edible species among plant families

Family	# species	full list	top 829	top 150	top 30
Stilbaceae	39	0	0	0	0
Strasburgeriaceae	1	0	0	0	0
Strelitziaceae	7	1	0	0	0
Stylidiaceae	155	0	0	0	0
Styracaceae	160	5	0	0	0
Surianaceae	8	0	0	0	0
Symplocaceae	320	1	0	0	0
Tamaricaceae	90	1	0	0	0
Tapisciaceae	6	0	0	0	0
Tecophilaeaceae	23	3	0	0	0
Ternstroemiaceae	103	1	0	0	0
Tetracarpaeaceae	1	0	0	0	0
Tetracentraceae	1	0	0	0	0
Tetrachondraceae	3	0	0	0	0
Tetradiclidaceae	1	0	0	0	0
Tetramelaceae	2	0	0	0	0
Tetrameristaceae	4	0	0	0	0
Theaceae	195	1	1	1	0
Themidaceae	62	3	0	0	0
Theophrastaceae	105	1	0	0	0
Thurniaceae	4	1	0	0	0
Thymelaeaceae	755	1	0	0	0
Ticodendraceae	1	0	0	0	0
Tofieldiaceae	27	0	0	0	0
Torricelliaceae	1	0	0	0	0
Tovariaceae	2	0	0	0	0
Trigoniaceae	28	0	0	0	0
Trimeniaceae	6	0	0	0	0
Triuridaceae	48	0	0	0	0
Trochodendraceae	1	0	0	0	0
Tropaeolaceae	95	7	2	0	0
Typhaceae	27	8	0	0	0
Ulmaceae	35	4	0	0	0
Urticaceae	2625	10	2	0	0
Vahliaceae	8	0	0	0	0
Valerianaceae	605	11	2	0	0
Velloziaceae	240	0	0	0	0
Verbenaceae	1175	7	1	0	0
Violaceae	800	5	0	0	0
Vitaceae	850	20	3	3	1
Vivianiaceae	6	0	0	0	0
Vochysiaceae	210	1	0	0	0
Winteraceae	90	3	0	0	0
Xanthorrhoeaceae	30	2	0	0	0
Xeronemataceae	2	0	0	0	0
Xyridaceae	260	0	0	0	0
Zingiberaceae	1075	34	20	2	0
Zosteraceae	14	1	0	0	0
Zygophyllaceae	285	7	1	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Abarema	44	0	0	0	0
Abrus	12	1	0	0	0
Acacia	439	22	1	0	0
Acmispon	8	0	0	0	0
Acosmium	17	0	0	0	0
Acrocarpus	1	0	0	0	0
Adenanthera	3	2	0	0	0
Adenocarpus	15	0	0	0	0
Adenodolichos	22	0	0	0	0
Adenolobus	2	0	0	0	0
Adenopodia	7	0	0	0	0
Adesmia	216	0	0	0	0
Aenictophyton	1	0	0	0	0
Aeschynomene	164	1	0	0	0
Affonsea	11	0	0	0	0
Afgekia	2	0	0	0	0
Afzelia	8	0	0	0	0
Aganope	6	0	0	0	0
Airyantha	1	0	0	0	0
Albizia	73	3	0	0	0
Aldina	13	0	0	0	0
Alexa	10	0	0	0	0
Alhagi	4	2	0	0	0
Alistilus	2	0	0	0	0
Almaleea	5	0	0	0	0
Alysicarpus	13	3	0	0	0
Amblygonocarpus	1	1	0	0	0
Amburana	2	0	0	0	0
Amherstia	1	0	0	0	0
Amicia	8	0	0	0	0
Ammodendron	5	0	0	0	0
Ammopiptanthus	2	0	0	0	0
Amorpha	16	0	0	0	0
Amphicarpaea	2	1	0	0	0
Amphimas	4	0	0	0	0
Amphithalea	20	0	0	0	0
Anadenanthera	2	0	0	0	0
Anagyris	1	0	0	0	0
Anarthrophyllum	15	0	0	0	0
Andira	42	0	0	0	0
Androcalymma	1	0	0	0	0
Angylocalyx	7	0	0	0	0
Antheroporum	1	0	0	0	0
Anthonotha	31	0	0	0	0
Anthyllis	22	0	0	0	0
Antopetitia	1	0	0	0	0
Aotus	14	0	0	0	0
Aphanocalyx	14	0	0	0	0
Apios	3	2	1	1	0
Apoplanesia	2	0	0	0	0
Apuleia	1	0	0	0	0
Apurimacia	6	0	0	0	0
Arachis	69	2	1	1	1
Arapatiella	2	0	0	0	0
Archidendron	15	2	1	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Archidendropsis	3	0	0	0	0
Arcoa	1	0	0	0	0
Argyrocytisus	1	0	0	0	0
Argyrolobium	89	1	0	0	0
Arthrocarpum	2	0	0	0	0
Arthroclianthus	1	0	0	0	0
Aspalathus	255	2	1	0	0
Astracantha	100	4	0	0	0
Astragalus	1478	12	0	0	0
Ateleia	18	0	0	0	0
Aubrevillea	2	0	0	0	0
Augouardia	1	0	0	0	0
Austrodolichos	1	0	0	0	0
Austrosteenisia	3	0	0	0	0
Baikiaea	7	0	0	0	0
Balizia	3	0	0	0	0
Balsamocarpon	1	0	0	0	0
Baphia	46	0	0	0	0
Baphiastrum	2	0	0	0	0
Baphiopsis	1	0	0	0	0
Baptisia	23	1	0	0	0
Barbieria	1	0	0	0	0
Barklya	1	0	0	0	0
Batesia	1	0	0	0	0
Baudouinia	1	0	0	0	0
Bauhinia	207	12	1	0	0
Behaimia	1	0	0	0	0
Belairia	1	0	0	0	0
Bergeronia	1	0	0	0	0
Berlinia	18	0	0	0	0
Bikinia	10	0	0	0	0
Bituminaria	2	0	0	0	0
Blanchetiodendron	1	0	0	0	0
Bobgunnia	2	0	0	0	0
Bocoa	7	0	0	0	0
Bolusanthus	1	0	0	0	0
Bolusia	6	0	0	0	0
Bossiaea	48	0	0	0	0
Bowdichia	2	0	0	0	0
Bowringia	2	0	0	0	0
Brachycylix	1	0	0	0	0
Brachysema	11	0	0	0	0
Brachystegia	36	1	0	0	0
Brandzeia	1	0	0	0	0
Breniera	1	0	0	0	0
Brodriguesia	1	0	0	0	0
Brongniartia	52	0	0	0	0
Brownea	28	0	0	0	0
Browneopsis	1	0	0	0	0
Brya	6	0	0	0	0
Bryaspis	2	0	0	0	0
Buchenroedera	11	0	0	0	0
Burkea	1	0	0	0	0
Burkilliodendron	1	0	0	0	0
Bussea	5	0	0	0	0
Butea	2	1	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Cadia	2	0	0	0	0
Caesalpinia	136	2	0	0	0
Cajanus	17	1	1	1	0
Calicotome	4	0	0	0	0
Callerya	12	1	0	0	0
Calliandra	156	0	0	0	0
Calliandropsis	1	0	0	0	0
Callistachys	1	0	0	0	0
Calophaca	2	0	0	0	0
Calopogonium	9	0	0	0	0
Calpocalyx	11	0	0	0	0
Calpurnia	7	0	0	0	0
Camoensia	2	0	0	0	0
Campsiandra	3	0	0	0	0
Camptosema	13	0	0	0	0
Campylotropis	1	1	0	0	0
Canavalia	60	4	2	0	0
Candolleodendron	1	0	0	0	0
Caragana	41	3	0	0	0
Carissoa	1	0	0	0	0
Carmichaelia	40	0	0	0	0
Cascaronia	1	0	0	0	0
Cassia	75	2	0	0	0
Castanospermum	1	1	0	0	0
Cathormion	1	0	0	0	0
Cedrelinga	1	0	0	0	0
Cenostigma	3	0	0	0	0
Centrolobium	7	0	0	0	0
Centrosema	43	1	0	0	0
Ceratonia	2	1	1	0	0
Cercidium	7	1	0	0	0
Cercis	5	2	0	0	0
Chadsia	1	0	0	0	0
Chaetocalyx	13	0	0	0	0
Chamaecrista	286	2	0	0	0
Chapmannia	1	0	0	0	0
Chesneya	15	0	0	0	0
Chidlowia	1	0	0	0	0
Chloroleucon	10	0	0	0	0
Chordospartium	2	0	0	0	0
Chorizema	16	0	0	0	0
Christia	3	0	0	0	0
Cicer	31	1	1	1	0
Cladrastis	3	0	0	0	0
Clathrotropis	5	0	0	0	0
Cleobulia	4	0	0	0	0
Clianthus	1	0	0	0	0
Clitoria	62	1	0	0	0
Clitoriopsis	1	0	0	0	0
Cochlianthus	1	0	0	0	0
Codariocalyx	2	0	0	0	0
Coelidium	20	0	0	0	0
Cojoba	18	0	0	0	0
Collaea	5	0	0	0	0
Cologania	11	0	0	0	0
Colophospermum	1	0	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Colutea	15	0	0	0	0
Colvillea	1	0	0	0	0
Conzattia	3	0	0	0	0
Copaifera	45	0	0	0	0
Corallospartium	1	0	0	0	0
Cordeauxia	1	1	0	0	0
Cordyla	9	0	0	0	0
Coronilla	9	0	0	0	0
Coursetia	39	0	0	0	0
Craibia	10	0	0	0	0
Cranocarpus	3	0	0	0	0
Craspedolobium	1	0	0	0	0
Cratylia	4	0	0	0	0
Crotalaria	581	6	0	0	0
Cruddasia	1	0	0	0	0
Crudia	22	0	0	0	0
Cryptosepalum	11	0	0	0	0
Cullen	8	1	0	0	0
Cyamopsis	5	2	1	0	0
Cyathostegia	2	0	0	0	0
Cyclocarpa	1	0	0	0	0
Cyclolobium	5	0	0	0	0
Cyclopia	19	5	3	0	0
Cylicodiscus	1	0	0	0	0
Cymbosema	1	0	0	0	0
Cynometra	58	1	0	0	0
Cytisophyllum	1	0	0	0	0
Cytisopsis	2	0	0	0	0
Cytisus	63	1	0	0	0
Dahlstedtia	1	0	0	0	0
Dalbergia	143	2	0	0	0
Dalbergiella	3	0	0	0	0
Dalea	170	2	0	0	0
Dalhousiea	1	0	0	0	0
Daniellia	9	0	0	0	0
Daviesia	78	0	0	0	0
Decorsea	3	0	0	0	0
Deguelia	4	0	0	0	0
Delonix	3	0	0	0	0
Dendrolobium	5	0	0	0	0
Derris	36	0	0	0	0
Desmanthus	24	0	0	0	0
Desmodium	267	2	0	0	0
Detarium	4	1	0	0	0
Dewevrea	2	0	0	0	0
Dialium	33	4	0	0	0
Dicerma	1	0	0	0	0
Dichilus	5	0	0	0	0
Dichrostachys	5	0	0	0	0
Dicorynia	2	0	0	0	0
Dicraeopetalum	1	0	0	0	0
Dicymbe	15	0	0	0	0
Didelotia	13	0	0	0	0
Dillwynia	22	0	0	0	0
Dimorphandra	26	0	0	0	0
Dinizia	1	0	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Dioclea	47	0	0	0	0
Diphyllarium	1	0	0	0	0
Diphysa	17	0	0	0	0
Diplotropis	12	0	0	0	0
Dipogon	1	1	0	0	0
Dipteryx	9	1	0	0	0
Diptychandra	1	0	0	0	0
Discolobium	8	0	0	0	0
Distemonanthus	1	0	0	0	0
Disynstemon	1	0	0	0	0
Dolichopsis	1	0	0	0	0
Dolichos	63	0	0	0	0
Dorycnium	8	0	0	0	0
Dorycnopsis	2	0	0	0	0
Droogmansia	24	0	0	0	0
Dumasia	2	1	0	0	0
Dunbaria	4	0	0	0	0
Duparquetia	1	0	0	0	0
Dussia	10	0	0	0	0
Dysolobium	2	0	0	0	0
Ebenopsis	3	1	0	0	0
Ebenus	6	0	0	0	0
Echinospartum	3	0	0	0	0
Ecuadendron	1	0	0	0	0
Eleiotis	1	0	0	0	0
Elephantorrhiza	10	0	0	0	0
Eligmocarpus	1	0	0	0	0
Elizabetha	11	0	0	0	0
Eminia	4	0	0	0	0
Endertia	1	0	0	0	0
Endosamara	1	0	0	0	0
Englerodendron	1	0	0	0	0
Entada	21	1	0	0	0
Enterolobium	12	0	0	0	0
Eperua	15	0	0	0	0
Eremosparton	1	0	0	0	0
Erichsenia	1	0	0	0	0
Erinacea	2	0	0	0	0
Eriosema	147	1	0	0	0
Erophaca	1	0	0	0	0
Errazurizia	4	0	0	0	0
Erythrina	124	3	1	0	0
Erythrophleum	8	0	0	0	0
Etaballia	1	0	0	0	0
Euchilopsis	1	0	0	0	0
Euchresta	3	0	0	0	0
Eurypetalum	3	0	0	0	0
Eutaxia	7	0	0	0	0
Eversmannia	1	0	0	0	0
Exostyles	2	0	0	0	0
Eysenhardtia	12	0	0	0	0
Fagelia	1	0	0	0	0
Faidherbia	1	0	0	0	0
Falcataria	1	0	0	0	0
Fiebrigiella	1	0	0	0	0
Fillaeopsis	1	0	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Fissicalyx	1	1	0	0	0
Flemingia	14	2	1	0	0
Fordia	2	0	0	0	0
Gagnebina	4	0	0	0	0
Galactia	99	0	0	0	0
Galega	6	1	0	0	0
Gastrolobium	36	0	0	0	0
Geissaspis	2	0	0	0	0
Genista	111	1	0	0	0
Genistidium	1	0	0	0	0
Geoffroea	2	2	0	0	0
Gigasiphon	3	0	0	0	0
Gilbertiodendron	28	0	0	0	0
Gilletiodendron	5	0	0	0	0
Gleditsia	13	1	0	0	0
Gliricidia	3	0	0	0	0
Glottidium	1	0	0	0	0
Glycine	14	1	1	1	1
Glycyrrhiza	16	4	2	0	0
Gompholobium	35	0	0	0	0
Goniorrhachis	1	0	0	0	0
Gonocytisus	3	0	0	0	0
Goodia	2	0	0	0	0
Gossweilerodendron	2	0	0	0	0
Grazielodendron	1	0	0	0	0
Griffonia	4	0	0	0	0
Gueldenstaedtia	1	0	0	0	0
Guibourtia	16	2	0	0	0
Gymnocladus	3	1	0	0	0
Haematoxylum	4	0	0	0	0
Halimodendron	1	0	0	0	0
Hammatolobium	2	0	0	0	0
Haplormosia	1	0	0	0	0
Hardenbergia	3	0	0	0	0
Harleyodendron	1	0	0	0	0
Harpalyce	28	0	0	0	0
Harvardia	1	0	0	0	0
Havardia	5	0	0	0	0
Hebestigma	1	0	0	0	0
Hedysarum	70	2	0	0	0
Herpyza	1	0	0	0	0
Hesperalbizia	1	0	0	0	0
Hesperolaburnum	1	0	0	0	0
Hesperothamnus	5	0	0	0	0
Heterostemon	7	0	0	0	0
Hippocrepis	30	0	0	0	0
Hoffmannseggia	26	1	0	0	0
Hoita	2	0	0	0	0
Holocalyx	1	0	0	0	0
Hosackia	11	0	0	0	0
Hovea	38	0	0	0	0
Humboldtia	1	0	0	0	0
Humularia	34	0	0	0	0
Hybosema	2	0	0	0	0
Hydrochorea	4	0	0	0	0
Hylodendron	1	0	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Hymenaea	15	1	0	0	0
Hymenocarpos	2	0	0	0	0
Hymenolobium	13	0	0	0	0
Hymenostegia	17	0	0	0	0
Hypocalyptus	3	0	0	0	0
Icuria	1	0	0	0	0
Indigastrum	8	0	0	0	0
Indigofera	552	7	0	0	0
Indopiptadenia	1	0	0	0	0
Inga	304	11	2	0	0
Inocarpus	1	1	1	0	0
Intsia	2	0	0	0	0
Isoberlinia	5	0	0	0	0
Isotropis	12	0	0	0	0
Jacksonia	37	0	0	0	0
Jacqueshuberia	4	0	0	0	0
Jansonia	1	0	0	0	0
Julbernardia	11	0	0	0	0
Kalappia	1	0	0	0	0
Kanaloa	1	0	0	0	0
Kebirita	1	0	0	0	0
Kennedia	16	0	0	0	0
Kingiodendron	2	0	0	0	0
Klugiodendron	1	0	0	0	0
Koompassia	3	0	0	0	0
Kotschya	30	0	0	0	0
Kummerowia	2	1	0	0	0
Labichea	14	0	0	0	0
Lablab	2	1	1	0	0
Laburnocytisus	1	0	0	0	0
Laburnum	3	0	0	0	0
Lackeya	1	0	0	0	0
Lamprolobium	2	0	0	0	0
Lathyrus	128	9	5	0	0
Latrobea	5	0	0	0	0
Lebeckia	43	1	0	0	0
Lebruniodendron	1	0	0	0	0
Lecointea	4	0	0	0	0
Lembotropis	1	0	0	0	0
Lemurodendron	1	0	0	0	0
Lemuropisum	1	1	0	0	0
Lennea	3	0	0	0	0
Lens	4	1	1	1	0
Leonardoxa	3	0	0	0	0
Leptoderris	26	0	0	0	0
Leptodesmia	1	0	0	0	0
Leptosema	6	0	0	0	0
Lespedeza	30	2	0	0	0
Lessertia	53	0	0	0	0
Leucaena	25	2	0	0	0
Leucochloron	4	0	0	0	0
Leucomphalos	1	0	0	0	0
Leucostegane	1	0	0	0	0
Librevillea	1	0	0	0	0
Liparia	2	0	0	0	0
Loesenera	4	0	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Lonchocarpus	151	0	0	0	0
Lophocarpinia	1	0	0	0	0
Lotononis	163	0	0	0	0
Lotus	115	3	1	0	0
Luetzelburgia	8	0	0	0	0
Lupinus	460	7	4	0	0
Lysidice	1	0	0	0	0
Lysiloma	12	0	0	0	0
Lysiphyllum	4	0	0	0	0
Maackia	3	0	0	0	0
Machaerium	155	0	0	0	0
Macrolobium	71	0	0	0	0
Macropsychanthus	1	0	0	0	0
Macroptilium	14	1	0	0	0
Macrosamanea	11	0	0	0	0
Macrotyloma	23	2	1	0	0
Maniltoa	7	0	0	0	0
Margaritolobium	1	0	0	0	0
Marina	38	0	0	0	0
Marmaroxylon	9	0	0	0	0
Martiodendron	4	0	0	0	0
Mastersia	1	0	0	0	0
Mecopus	1	0	0	0	0
Medicago	74	5	1	0	0
Meizotropis	1	0	0	0	0
Melanoxylon	2	0	0	0	0
Melilotus	19	2	0	0	0
Melliniella	1	0	0	0	0
Melolobium	27	0	0	0	0
Mendoravia	1	0	0	0	0
Michelsonia	1	0	0	0	0
Microberlinia	2	0	0	0	0
Microcharis	33	0	0	0	0
Microlobius	1	0	0	0	0
Mildbraediodendron	1	0	0	0	0
Millettia	125	0	0	0	0
Mimosa	521	0	0	0	0
Mimozyganthus	1	0	0	0	0
Mirbelia	26	0	0	0	0
Moldenhawera	7	0	0	0	0
Monopetalanthus	3	0	0	0	0
Monopteryx	3	0	0	0	0
Mora	7	0	0	0	0
Moullava	1	0	0	0	0
Mucuna	39	4	1	0	0
Muelleranthus	3	0	0	0	0
Mundulea	5	0	0	0	0
Myrocarpus	4	2	0	0	0
Myrospermum	1	0	0	0	0
Myroxylon	2	0	0	0	0
Mysanthus	1	0	0	0	0
Nemcia	28	0	0	0	0
Neoapaloxylon	1	0	0	0	0
Neochevalierodendron	1	0	0	0	0
Neocollettia	1	0	0	0	0
Neoharmsia	1	0	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Neonotonia	2	0	0	0	0
Neorautanenia	3	0	0	0	0
Neorudolphia	1	0	0	0	0
Nephrodesmus	1	0	0	0	0
Neptunia	11	1	1	0	0
Nesphostylis	1	0	0	0	0
Newtonia	12	0	0	0	0
Nissolia	14	0	0	0	0
Nogra	1	0	0	0	0
Nomismia	1	0	0	0	0
Notodon	3	0	0	0	0
Notospartium	3	0	0	0	0
Obolinga	1	0	0	0	0
Oddoniodendron	3	0	0	0	0
Olneya	1	0	0	0	0
Onobrychis	119	0	0	0	0
Ononis	67	1	0	0	0
Ophrestia	8	0	0	0	0
Orbexilum	1	0	0	0	0
Oreophysa	1	0	0	0	0
Ormocarpopsis	1	0	0	0	0
Ormocarpum	20	0	0	0	0
Ormosia	62	0	0	0	0
Ornithopus	6	0	0	0	0
Orobus	1	0	0	0	0
Orophaca	8	0	0	0	0
Orphanodendron	1	0	0	0	0
Oryxis	1	0	0	0	0
Ostryocarpus	2	0	0	0	0
Otholobium	36	0	0	0	0
Otoptera	1	0	0	0	0
Ottleya	12	0	0	0	0
Oxylobium	16	0	0	0	0
Oxyrhynchus	2	0	0	0	0
Oxystigma	6	0	0	0	0
Oxytropis	178	0	0	0	0
Pachecoa	1	0	0	0	0
Pachyelasma	1	0	0	0	0
Pachyrhizus	5	3	3	0	0
Painteria	4	0	0	0	0
Paloue	4	0	0	0	0
Paloveopsis	1	0	0	0	0
Panurea	1	0	0	0	0
Paracalyx	6	0	0	0	0
Paramachaerium	5	0	0	0	0
Paramacrolobium	1	0	0	0	0
Parapiptadenia	6	0	0	0	0
Pararchidendron	1	0	0	0	0
Paraserianthes	2	0	0	0	0
Paratephrosia	1	0	0	0	0
Parkia	32	5	3	0	0
Parkinsonia	7	0	0	0	0
Parochetus	2	0	0	0	0
Parryella	1	0	0	0	0
Pearsonia	10	0	0	0	0
Pediomelum	1	1	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Pellegriniodendron	1	0	0	0	0
Peltiera	2	0	0	0	0
Peltogyne	24	0	0	0	0
Peltophorum	8	0	0	0	0
Pentaclethra	3	1	0	0	0
Periandra	7	0	0	0	0
Pericopsis	4	0	0	0	0
Petaladenium	1	0	0	0	0
Petalostylis	2	0	0	0	0
Peteria	4	1	0	0	0
Petteria	1	0	0	0	0
Phaseolus	36	4	3	1	1
Phylacium	1	0	0	0	0
Phyllocarpus	2	0	0	0	0
Phyllodium	2	0	0	0	0
Phyllota	10	0	0	0	0
Phylloxylon	1	0	0	0	0
Physostigma	5	0	0	0	0
Pickeringia	1	0	0	0	0
Pictetia	10	0	0	0	0
Piliostigma	1	0	0	0	0
Piptadenia	32	0	0	0	0
Piptadeniastrum	1	0	0	0	0
Piptadeniopsis	1	0	0	0	0
Piptanthus	1	0	0	0	0
Piscidia	7	0	0	0	0
Pisum	3	1	1	1	0
Pithecellobium	67	2	1	0	0
Plagiocarpus	1	0	0	0	0
Plagiosiphon	5	0	0	0	0
Plathymenia	2	0	0	0	0
Platycelyphium	1	0	0	0	0
Platycyamus	2	0	0	0	0
Platylobium	4	0	0	0	0
Platymiscium	33	0	0	0	0
Platypodium	2	0	0	0	0
Platysepalum	12	0	0	0	0
Podalyria	25	0	0	0	0
Podocytisus	1	0	0	0	0
Podolobium	1	0	0	0	0
Podolotus	1	0	0	0	0
Poecilanthe	8	0	0	0	0
Poeppigia	1	0	0	0	0
Poiretia	11	0	0	0	0
Poitea	13	0	0	0	0
Polhillia	7	0	0	0	0
Polystemonanthus	1	0	0	0	0
Pomaria	9	0	0	0	0
Pomgamiopsis	1	0	0	0	0
Pongamia	1	1	0	0	0
Priestleya	15	0	0	0	0
Prioria	1	0	0	0	0
Prosopidastrum	2	0	0	0	0
Prosopis	45	6	0	0	0
Pseudarthria	5	0	0	0	0
Pseudeminia	4	1	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Pseudoeriosema	5	0	0	0	0
Pseudolotus	1	0	0	0	0
Pseudomacrolobium	1	0	0	0	0
Pseudopiptadenia	10	0	0	0	0
Pseudoprosopis	7	0	0	0	0
Pseudosamanea	2	0	0	0	0
Pseudosindora	1	0	0	0	0
Pseudovigna	2	0	0	0	0
Psophocarpus	10	1	1	0	0
Psoralea	103	7	0	0	0
Psoralidium	1	0	0	0	0
Psorothamnus	9	0	0	0	0
Pterocarpus	36	2	0	0	0
Pterodon	2	0	0	0	0
Pterogyne	1	0	0	0	0
Pterolobium	2	0	0	0	0
Ptycholobium	3	0	0	0	0
Ptychosema	2	0	0	0	0
Pueraria	12	2	1	0	0
Pultenaea	104	0	0	0	0
Pycnospora	1	0	0	0	0
Pyranthus	1	0	0	0	0
Racosperma	5	0	0	0	0
Rafnia	25	0	0	0	0
Ramirezella	3	0	0	0	0
Ramorinoa	1	0	0	0	0
Recordoxylon	2	0	0	0	0
Rehsonia	1	0	0	0	0
Requienia	3	0	0	0	0
Retama	4	0	0	0	0
Rhodopis	2	0	0	0	0
Rhynchosia	223	1	0	0	0
Rhynchotropis	2	0	0	0	0
Riedeliella	3	0	0	0	0
Robinia	4	1	0	0	0
Robynsiophyton	1	0	0	0	0
Rothia	2	1	0	0	0
Rupertia	3	0	0	0	0
Sakoanala	1	0	0	0	0
Salweenia	1	0	0	0	0
Samanea	6	0	0	0	0
Saraca	3	0	0	0	0
Sarcodum	1	0	0	0	0
Sartoria	1	0	0	0	0
Schefflerodendron	4	0	0	0	0
Schizolobium	2	0	0	0	0
Schleinitzia	3	0	0	0	0
Schotia	5	0	0	0	0
Schrankia	1	0	0	0	0
Sclerolobium	40	0	0	0	0
Scorodophloeus	2	0	0	0	0
Scorpiurus	3	0	0	0	0
Securigera	13	0	0	0	0
Sellocharis	1	0	0	0	0
Senna	234	9	0	0	0
Serianthes	4	0	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Sesbania	53	4	1	0	0
Shuteria	4	0	0	0	0
Sindora	4	0	0	0	0
Sindoropsis	1	0	0	0	0
Sinodolichos	1	0	0	0	0
Smirnowia	1	0	0	0	0
Smithia	6	1	0	0	0
Soemmeringia	1	0	0	0	0
Sophora	38	1	0	0	0
Spartidium	1	0	0	0	0
Spartium	1	0	0	0	0
Spathionema	1	0	0	0	0
Spatholobus	2	0	0	0	0
Sphaerolobium	18	0	0	0	0
Sphaerophysa	1	1	0	0	0
Sphenostylis	6	1	0	0	0
Sphinctospermum	1	0	0	0	0
Sphinga	3	0	0	0	0
Spirotropis	2	0	0	0	0
Spongiocarpella	1	0	0	0	0
Stachyothyrsus	3	0	0	0	0
Stahlia	1	0	0	0	0
Stemonocoleus	1	0	0	0	0
Stenodrepanum	1	0	0	0	0
Stirtonanthus	3	0	0	0	0
Stonesiella	1	0	0	0	0
Storckiella	2	0	0	0	0
Stracheya	1	0	0	0	0
Streblorrhiza	1	0	0	0	0
Strongylodon	3	0	0	0	0
Strophostyles	3	0	0	0	0
Stryphnodendron	24	0	0	0	0
Stuhlmannia	1	0	0	0	0
Stylosanthes	41	0	0	0	0
Styphnolobium	1	1	0	0	0
Sutherlandia	7	0	0	0	0
Swainsona	55	0	0	0	0
Swartzia	144	0	0	0	0
Sweetia	2	0	0	0	0
Sylvichadsia	4	0	0	0	0
Sympetalandra	1	0	0	0	0
Syrmatium	14	0	0	0	0
Tachigali	24	0	0	0	0
Tadehagi	2	0	0	0	0
Talbotiella	3	0	0	0	0
Tamarindus	1	1	1	0	0
Taralea	5	0	0	0	0
Taverniera	15	0	0	0	0
Teline	2	0	0	0	0
Templetonia	12	0	0	0	0
Tephrosia	307	1	0	0	0
Teramnus	8	0	0	0	0
Terua	1	0	0	0	0
Tessmannia	12	0	0	0	0
Tetraberlinia	7	0	0	0	0
Tetrapleura	2	0	0	0	0

Table S1b Distribution of edible species among Fabaceae genera

Genus	# species	full list	top 829	top 150	top 30
Tetrapterocarpon	1	0	0	0	0
Teyleria	1	0	0	0	0
Thermopsis	18	0	0	0	0
Thylacanthus	1	0	0	0	0
Tipuana	1	0	0	0	0
Trifidacanthus	1	0	0	0	0
Trifolium	222	7	1	0	0
Trigonella	73	3	1	0	0
Tripodion	1	0	0	0	0
Tylosema	4	1	0	0	0
Uleanthus	1	0	0	0	0
Ulex	11	0	0	0	0
Umtiza	1	0	0	0	0
Uraria	5	0	0	0	0
Uribea	1	0	0	0	0
Urodon	2	0	0	0	0
Vandasina	1	0	0	0	0
Vatairea	8	0	0	0	0
Vataireopsis	4	0	0	0	0
Vatovaea	1	0	0	0	0
Vaughania	1	0	0	0	0
Vavilovia	1	0	0	0	0
Vicia	200	15	1	1	0
Vigna	86	12	8	1	0
Viminaria	1	0	0	0	0
Virgilia	2	0	0	0	0
Vouacapoua	3	0	0	0	0
Wajira	1	0	0	0	0
Wallaceodendron	1	0	0	0	0
Weberbauerella	2	0	0	0	0
Wiborgia	10	0	0	0	0
Willardia	3	0	0	0	0
Wisteria	5	2	0	0	0
Xanthocercis	1	0	0	0	0
Xerocladia	1	0	0	0	0
Xeroderris	1	0	0	0	0
Xipotheca	6	0	0	0	0
Xylia	7	0	0	0	0
Zapoteca	18	0	0	0	0
Zenia	1	0	0	0	0
Zenkerella	5	0	0	0	0
Zollernia	8	0	0	0	0
Zornia	76	0	0	0	0
Zuccagnia	1	0	0	0	0
Zygia	43	0	0	0	0

Table S1c Distribution of edible species among Rosaceae genera

Genus	# species	full list	top 829	top 150	top 30
Acaena	110	1	0	0	0
Acomastylis	12	0	0	0	0
Adenostoma	3	0	0	0	0
Agrimonia	13	2	0	0	0
Alchemilla	60	0	0	0	0
Amelanchier	15	4	0	0	0
Aphanes	20	1	0	0	0
Aremonia	1	0	0	0	0
Aria	49	0	0	0	0
Aronia	2	1	1	0	0
Aruncus	1	0	0	0	0
Bencomia	4	0	0	0	0
Cercocarpus	5	0	0	0	0
Chaenomeles	3	3	1	0	0
Chamaebatia	1	0	0	0	0
Chamaebatiaria	1	0	0	0	0
Chamaerhodos	5	0	0	0	0
Cliffortia	100	1	0	0	0
Coluria	4	0	0	0	0
Comarum	5	0	0	0	0
Cormus	1	0	0	0	0
Cotoneaster	60	1	0	0	0
Crataegus	168	24	5	0	0
Cydonia	1	1	1	1	0
Dasiphora	26	0	0	0	0
Dendriopoterium	1	0	0	0	0
Dryas	2	1	0	0	0
Drymocallis	30	0	0	0	0
Duchesnea	5	1	0	0	0
Eriobotrya	18	1	1	0	0
Erythrocoma	6	0	0	0	0
Exochorda	4	0	0	0	0
Fallugia	1	0	0	0	0
Filipendula	15	0	0	0	0
Fragaria	10	7	5	5	0
Geum	30	2	0	0	0
Gillenia	2	0	0	0	0
Hagenia	1	0	0	0	0
Heteromeles	1	0	0	0	0
Holodiscus	2	0	0	0	0
Kageneckia	3	0	0	0	0
Kerria	1	0	0	0	0
Leucosidea	1	0	0	0	0
Lindleya	1	0	0	0	0
Lyonothamnus	1	0	0	0	0
Malacomeles	2	0	0	0	0
Malus	31	17	4	1	1
Marcetella	2	0	0	0	0
Margyricarpus	1	1	0	0	0
Mespilus	1	1	1	0	0
Neillia	12	0	0	0	0
Neviusia	2	0	0	0	0
Novosieversia	1	0	0	0	0
Oemleria	1	0	0	0	0
Oncostylus	5	0	0	0	0

Table S1c Distribution of edible species among Rosaceae genera

Genus	# species	full list	top 829	top 150	top 30
Osteomeles	1	1	0	0	0
Peraphyllum	1	0	0	0	0
Photinia	60	1	0	0	0
Physocarpus	6	0	0	0	0
Polylepis	20	0	0	0	0
Potentilla	117	5	0	0	0
Prinsepia	3	1	0	0	0
Prunus	200	50	20	6	0
Pseudocydonia	1	1	0	0	0
Purshia	8	0	0	0	0
Pyracantha	3	1	0	0	0
Pyrus	15	15	2	1	0
Rhaphiolepis	5	1	0	0	0
Rhodotypos	1	0	0	0	0
Rosa	95	23	3	0	0
Rubus	232	75	14	2	0
Sanguisorba	15	2	1	0	0
Sarcopoterium	1	0	0	0	0
Sibbaldia	17	0	0	0	0
Sibbaldianthe	3	0	0	0	0
Sibbaldiopsis	1	0	0	0	0
Sieversia	2	0	0	0	0
Sorbaria	4	0	0	0	0
Sorbus	80	6	4	0	0
Spiraea	80	1	0	0	0
Stephanandra	3	0	0	0	0
Taihangia	1	0	0	0	0
Tetraglochin	4	0	0	0	0
Vauquelinia	3	0	0	0	0
Waldsteinia	5	0	0	0	0

Table S1d Distribution of edible species among Orchidaceae genera. Genera with no edible species (853 out of a total of 864) are not shown.

Genus	# species	full list	top 829	top 150	top 30
Angraecum	223	1	0	0	0
Calypso	1	1	0	0	0
Cymbidium	67	2	0	0	0
Dactylorhiza	126	1	0	0	0
Dendrobium	1179	1	0	0	0
Eulophia	206	2	0	0	0
Gastrodia	42	2	0	0	0
Habenaria	819	2	0	0	0
Leptotes	7	1	0	0	0
Orchis	47	7	0	0	0
Vanilla	110	5	1	1	0