Know Thy Plant! By Marian Bell Whitcomb

All plants need light, soil, and moisture to survive. Each plant needs these to varying degrees. You can learn a lot by determining the home range of the species. Where it originates and/or where you want to plant it, each plant has predators in the form of insects, fungi, and diseases.

Ideally you want to choose plants that have more than one use or season. You need to know which plants can physically harm or poison you, and that some can sabotage your efforts by out-competing others or harboring diseases for other plants.

Right plant, right place. Permaculturalists may choose plants (like a spreading comfrey) as a constantly renewable source of green material for compost, but some invasive plants could get in the way of a project as well, resulting in time-loss and frustration, and it is recommended to know them on sight. There are usually volunteer or university groups that can help you identify problem species for your locality and help you to identify them.

Keep it local if you can. You will support your own economy. Avoid bringing in problems via compost, manure, fill, or topsoil. Inspect the supply before it comes to you and identify what is growing in it. Turn it down if it is not good quality.

Your choice of plants (and animals) is going to be most effective if you can prevent problems before they occur. Heading them off before they even arrive at your site can save you a lot of time and effort. Many difficult weed species arrive by accident in crop mixtures and animal feed. Aggressive plants can even arrive on machinery, muddy shoes, and one's clothes! Introduction of unwanted species or allowing invasive plants to spread may have you wanting to reach for herbicides and pesticides in desperation or cost you a lot of your manual labor, reducing your yield!

Once the site analysis is complete and you have a plan,

1) Study the possible plants (and animals), and explore all options (observe and interact).
2) Start with the closest local sources that will work (small and slow) and (produce no waste).
3) Know the hard-to-manage species before buying land if possible (observe and interact).
4) Learn the plants on your land and how to use them if possible (obtain a yield).
5) Avoid adding unintended input (can diminish yield).
6) Seeds are the most economical, pest, and disease-free way to get new plants (produce no waste).
7) Know healthy plants and signs of pests and diseases (produce no waste).
8) Bare-root your potted plants and burn the soil if possible

9) The person selling the plant or animal is not always the best source of information, do your homework well.
10) Recognize a problem before it gets out of hand (apply self-regulation and accept feedback).
11) There may be liabilities for choosing to use an invasive (from the neighbor, to the legal, to the proper disposal of waste) (integrate rather than segregate) (apply self-regulation and feedback).
12) Understand that allelopathy (meaning "does not play well with others") can cause reduced yields in your food forest.

All plants want to grow and reproduce, and all plants compete with each other to some degree. If you choose to experiment, know the signs of problem plants and deal with them before they get out of hand. Plan for old age, it is inevitable. Some of the worst invasive plants are garden escapees from neglected or abandoned gardens.

Signs that a plant is rampant:
1) Grows very fast
2) Reproduces fast (short generation time)
3) Likes more than one or two habitats
4) Reproduces in more than one way
5) Produces many seeds
6) is self-fertile
7) Pieces of stems, leaves, or roots grow
8) Very deep rooted (or difficult to remove from a site).

https://www.youtube.com/watch?v=UonRPIea48Y Look for indigenous species to fill your needs first, and then perhaps a zone or two south in light of climate change issues.

http://plants.usda.gov/java/noxious?rptType=State&statefips=41
http://www.usna.usda.gov/Gardens/invasives.htm
Main Databases that consolidate referenced locality reports and identification

http://www.bugwood.org/ Good photo ids, easy way to learn early detection of problems.

https://www.eddmaps.org/ Range maps of unwanted plants and animals, learn what is in your area.

http://themicrogardener.com/how-to-choose-healthiest-seedlings/ A good basic primer on picking plants if you buy seedlings or plants from a nursery.

https://extension.org/ Extension services exist to provide information. There are good overviews of various food plants and animals and the issues with them that others in your area are having.

http://www.iscmv.ca/invasive-plants/stop-the-spread Here is a general overview on prevention. Installation of new roads, plowing, and grading can also move or introduce unwanted plants.

https://en.wikipedia.org/wiki/Glossary_of_invasion_biology_terms This list of definitions touches on a lot of issues related to invasive species.