

# 100 Fortune Cookies for Biofuels

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By JIM LANE, Editor & Publisher, [Biofuels Digest](#) [1]



A few weeks ago, at the Digest we began to assemble a collection of the “best of” articles since the publication of our last collection, *Citizen Cane*, in late 2009. While developing a few original essays for that new book, it occurred to us, looking at the pile of unread white papers and spy thrillers on our Digest nightstand, that readers are just too busy, in too many cases, for a long read.

We realized that something shorter and peppier is called for, in the spirit of the 2010s, defined in so many ways by the 140-character limit on posts distributed via Twitter.

Less is more, we decided, and are offering instead the following collection of 100 “fortune cookies”: aphorisms, caveats, distractions, diversions and discoveries that we have developed from our days looking at, evaluating, and writing about the biofuels industry as it comes to life.

Whether it is “Before embarking on a biofuels venture, chew and digest a car, just for practice,” or “Hire poets with fangs to write your patents,” or “If you are thinking long-term, think about it in Mandarin,” we hope that you will find our fortune cookies, listed in alphabetical order, both tasty and nourishing.

## 100 Fortune Cookies

1. A friend in DC is a friend indeed.

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2. A person who makes their living selling research will tell you more is needed.
3. All arable land that can be used for biomass can be used for food production.
4. Among feedstocks, waste makes haste.
5. Ask any poppy farmer — distributors rule the earth unless interrupted by cartels.
6. Bacteria are using you, not the other way around.
7. Before embarking on a biofuels venture, chew and digest a car, just for practice.
8. Big Oil, Big Chemicals, and Big Ag will be the only enduring friends you will have.
9. Build the smallest thing you can.
10. Climb one hundred feet above your proposed site — whatever you can see, that's your feedstock.
11. Design products that can be happily used by people who have no idea what they are doing.
12. Do not even begin an algal biofuels adventure until you have found an affordable way to get the algae out of the water, or the water out of the algae.
13. Don't think gallons per acre, think dollars per acre.
14. Easier to use an organism than make one.
15. Eat humble pie at every meal.
16. Farmer, eat thy own dog food, er, I mean biodiesel.
17. Every scientist needs a capitalist needs an industrialist.
18. Everybody in the world has the best catalyst.
19. Everything tracks oil prices.
20. Everything you do will become known.
21. Fats and fast are two different things.

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22. Feedstock goes to the highest bidder.
23. Find the smartest people in the world, then hire someone else.
24. First comes the cash flow, then the world domination.
25. Get someone to paint the fence for you.
26. Half of your cost will be the pipes.
27. High oil prices make investors want to fund fossil fuel projects.
28. Hire poets with fangs to write your patents.
29. Hit every milestone without fail.
30. If you are making CO<sub>2</sub>, you are losing carbon.
31. If you are thinking long-term, think about it in Mandarin.
32. If you can make a five dollar chemical, why make a two dollar fuel?
33. If you make a million using someone else's garden, they are going to want it back.
34. If you want a friend in bioenergy, get a bacterium
35. In finance, begin with the exit in mind.
36. In life, you do not get what you want, or what you deserve, or even what you negotiate. You get what everyone else overlooked at the time.
37. Indirect impacts will never be well enough understood for policy purposes.
38. It is nice to fix a problem quickly, but it is transformative to fix carbon dioxide so.
39. It is not what you know, or who you know, but what you do with who you know.
40. It was a movement before it was an industry.
41. John Benemann tells me, if algae looks good, we're in big trouble.
42. Lenders care only about the hedging.
43. Less is more, unless we're talking rate, yield or titer.
44. Maize is a craze, cane's insane, but grass and wood are always good.

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45. Make all your failures fail quickly.
46. Malthusians and Luddites are everywhere.
47. Many bad things start with the gasifier.
48. Meet a spec, let someone else make one.
49. Microalgae is the wild, wild wet.
50. Never enter a field that is exactly five years away from commercialization.
51. No matter what you think you are inventing, you are inventing something else.
52. No one knows anything about tomorrow.
53. No one will give you infrastructure for Christmas.
54. Partner early and often. Things go better with Koch.
55. Petrochemical companies are filled with very smart, often very frustrated people.
56. Pick a VC who knows more than you do.
57. Plan like a skeptic, build like a miser, imagine like a child.
58. Plants have had 500 million years to learn how to protect their sugars.
59. Prepare for the worst. It's coming.
60. Write nothing to anyone that you would not feel comfortable seeing on the front page of the Wall Street Journal.
61. Solve one very big problem and partner for everything else.
62. Somebody didn't tell you something important.
63. Someone else is doing it too.
64. Someone in the oil industry is laughing right now at your concept of scale.
65. Success begins with an \$.
66. The bad news with jatropha is that no one has ever domesticated it. The good news with jatropha is that no one has ever domesticated it.

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67. The biggest pop singles of 1969 and 1970 were “Sugar, Sugar” and “I Think I Love You” — we agree.
68. The genome is the mother of all opportunity.
69. The key syllable in seaweed is weed.
70. The only spreadsheet color is rosy.
71. The replacement of the fuel supply by industrialized nations is the biggest commercial thing that will ever be done. You can’t meet enough people. Network like crazy.
72. The sun doesn’t like free-riders — beware.
73. The trick with offtake contracts is the term, not the terms.
74. The world is stranger than a lab.
75. There are very few successful fuel producers for very good reasons.
76. There is no patent on folly, it is in the public domain and used all too frequently.
77. There is not a food shortage, there is an income distribution problem.
78. There is nothing new under the sun, but there are new things inside of it.
79. There isn’t enough fresh water for anything, much less everything.
80. Think about how many cattle or fish or people there are to eat all the protein you will be producing at scale.
81. Think twice about getting the upper hand over a Brazilian.
82. Thee that first reacheth oil price parity and hath unlimited affordable feedstock shall inheriteth the earth.
83. To every presentation on a biofuels investment opportunity, bring a copy of the Second Law of Thermodynamics.
84. Tolerance in all things, but above all tolerate salt.
85. Trade secrets will not stay that way.
86. Treat nitrogen and phosphorus as if they are gold and silver.
87. Use someone else’s everything wherever possible.

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88. What this world needs is a good five-cent sugar.
89. You are attacking someone else's business model and livelihood. Don't complain when they try and send you to the devil.
90. You are not the first one to discover the opportunities in Africa.
91. You are the CEO of a corporation called "you".
92. You can tell an enzyme to hurry up, but it may not listen.
93. You cannot think too small.
94. You need speed. There is nothing more important than a rate of fermentation.
95. You will make more friends downstream by making substitute fuels, not alternative fuels.
96. You will never have enough affordable hydrogen.
97. You will never have a business until you can compete on price.
98. Your magic bug is excreting something because it does not like it.
99. Your microorganism has no idea what you are doing.
100. Your true competitors are beef and cheese.

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