

Mathematical Analysis of Fruit Fortunes

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Game Rules

1. Base Game:

1. All symbols pay left-to-right, except SCATTER symbols, which pay any.
2. The WILD symbol substitutes for all other symbols except SCATTER and BONUS symbols.
3. Payline wins are multiplied by the amount wagered on the winning payline.
4. Only the highest win is awarded on each active payline.
5. Wins on multiple paylines are added together.
6. Scatter wins are multiplied by the total wager.
7. Scatter wins are added to payline wins.

2. Bonus Round:

1. The bonus round is triggered when 3, 4, or 5 BONUS symbols appear anywhere on the reels.
2. The player must click each BONUS symbol to reveal bonus prizes.
3. The number of triggering BONUS symbols determines the number of picks awarded.
4. The revealed prizes are added together to determine the total bonus prize.
5. Winnings from the bonus round are added to any wins earned on the triggering spin.

3. Free Spins:

1. 3, 4, or 5 SCATTER symbols will award 10, 25, or 50 free spins respectively.
2. Free spins are played using the same bet that was made on the triggering spin.
3. During free spins, all paylines pay without regard to the order or position of the symbols. For example, if the five symbols on an active payline are BONUS-WILD-SCATTER-WILD-WILD, the prize for three WILD symbols is awarded for that payline.
4. Free spins can trigger additional free spins, with no cap on the number of free spins that may be awarded.
5. The bonus round can be won during free spins.
6. Winnings from free spins are added to any wins earned on the triggering spin.

Symbols and Paytable

Symbol	2 in a row	3 in a row	4 in a row	5 in a row
Bonus		Bonus Round	Bonus Round	Bonus Round
Scatter		5 + 10 Free Spins	25 + 25 Free Spins	100 + 50 Free Spins
Wild	3	30	300	3000
Kiwi		25	250	2500
Lime		25	250	2500
Plum		20	200	2000
Grapes		20	200	2000
Pineapple		15	150	1500
Orange		15	150	1500
Bananas		10	100	1000
Peach		10	100	1000
Lemon		10	100	1000
Watermelon		5	50	500
Apple		5	50	500
Strawberry		5	50	250
Cherry		5	50	250

Symbol Weights

The following table indicates how many times each symbol appears on each reel strip:

Symbol	Reel 1	Reel 2	Reel 3	Reel 4	Reel 5
Bonus	1	1	1	1	1
Scatter	1	1	1	1	1
Wild	1	1	1	1	1
Kiwi	1	1	2	1	1
Lime	1	1	2	1	1
Plum	2	1	1	1	2
Grapes	2	1	1	1	2
Pineapple	2	1	2	1	2
Orange	2	1	2	1	2
Bananas	2	2	1	2	2
Peach	2	2	1	2	2
Lemon	2	2	1	2	2
Watermelon	2	3	2	3	2
Apple	2	3	3	3	2
Strawberry	2	3	3	3	2
Cherry	2	3	3	3	2
Totals	27	27	27	27	27

Base Game

Symbol	2 in a row	3 in a row	4 in a row	5 in a row
Wild	1458	54	6	1
Kiwi		7425	575	47
Lime		7425	575	47
Plum		7425	552	71
Grapes		7425	552	71
Pineapple		11475	840	107
Orange		11475	840	107
Bananas		11016	1272	161
Peach		11016	1272	161
Lemon		11016	1272	161
Watermelon		21735	3432	431
Apple		29187	4584	575
Strawberry		29187	4584	573
Cherry		29187	4584	573

Scatter		155520	9720	243
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Total combinations	14,348,907
Winning payline combinations	224,532
Payline win probability	1.5648%
Payline win frequency	63.9058
Payline return	41.9116%
Winning scatter combinations	165,483
Scatter win probability	1.1533%
Scatter win frequency	86.7093
Scatter return	7.5361%
Total base game return	49.4477%

Bonus Round — 3 Picks

3 BONUS symbols award the player 3 picks from the table below.

All prizes are relative to the player's total bet.

Prize	Weight	Probability	Average
1	2	0.166667	0.166667
2	2	0.166667	0.333333
3	2	0.166667	0.500000
4	2	0.166667	0.666667
5	4	0.333333	1.666667
Totals	12	1.000000	3.333333

Trigger combinations	155,520
Trigger probability	1.0838%
Average prize per pick	3.3333
Number of picks awarded	3
Average prize per bonus	10.0000
 Return	 10.8385%

Bonus Round — 4 Picks

4 BONUS symbols award the player 4 picks from the table below.

All prizes are relative to the player's total bet.

Prize	Weight	Probability	Average
5	1	0.055556	0.277778
6	1	0.055556	0.333333
7	2	0.111111	0.777778
8	1	0.055556	0.444444
9	1	0.055556	0.500000
10	1	0.055556	0.555556
11	1	0.055556	0.611111
12	1	0.055556	0.666667
13	1	0.055556	0.722222
14	1	0.055556	0.777778
15	1	0.055556	0.833333
16	1	0.055556	0.888889
17	1	0.055556	0.944444
18	2	0.111111	2.000000
19	1	0.055556	1.055556
20	1	0.055556	1.111111
Totals	18	1.000000	12.500000

Trigger combinations	9,720
Trigger probability	0.0677%
Average prize per pick	12.5000
Number of picks awarded	4
Average prize per bonus	50.0000
Return	3.3870%

Bonus Round — 5 Picks

5 BONUS symbols award the player 5 picks from the table below.

All prizes are relative to the player's total bet.

Prize	Weight	Probability	Average
10	1	0.066667	0.666667
20	1	0.066667	1.333333
30	1	0.066667	2.000000
40	6	0.400000	16.000000
50	1	0.066667	3.333333
60	1	0.066667	4.000000
70	1	0.066667	4.666667
80	1	0.066667	5.333333
90	1	0.066667	6.000000
100	1	0.066667	6.666667
Totals	15	1.000000	50.000000

Trigger combinations	243
Trigger probability	0.0017%
Average prize per pick	50.0000
Number of picks awarded	5
Average prize per bonus	250.0000
Return	0.4234%

Bonus Round — Summary

3 Bonus Symbols — trigger combinations	155,520
3 Bonus Symbols — trigger probability	1.0838%
3 Bonus Symbols — average prize per pick	3.3333
3 Bonus Symbols — number of picks awarded	3
3 Bonus Symbols — average prize per bonus	10.0000
4 Bonus Symbols — trigger combinations	9,720
4 Bonus Symbols — trigger probability	0.0677%
4 Bonus Symbols — average prize per pick	12.5000
4 Bonus Symbols — number of picks awarded	4
4 Bonus Symbols — average prize per bonus	50.0000
5 Bonus Symbols — trigger combinations	243
5 Bonus Symbols — trigger probability	0.0017%
5 Bonus Symbols — average prize per pick	50.0000
5 Bonus Symbols — number of picks awarded	5
5 Bonus Symbols — average prize per bonus	250.0000
3 Bonus Symbols — return	10.8385%
4 Bonus Symbols — return	3.3870%
5 Bonus Symbols — return	0.4234%
Total return	14.6489%

Free Spins

Symbol	2 in a row	3 in a row	4 in a row	5 in a row
Wild	80	40	36	1
Kiwi		56404	2660	47
Lime		54358	2632	47
Plum		68766	3661	71
Grapes		66286	3623	71
Pineapple		83356	5006	107
Orange		80500	4956	107
Bananas		100000	6784	161
Peach		97024	6720	161
Lemon		94384	6656	161
Watermelon		172394	14552	431
Apple		202156	18189	575
Strawberry		199030	18055	562
Cherry		196930	17921	562

Scatter		155520	9720	243
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3-Scatter combinations	155,520	(10 free spins)
4-Scatter combinations	9,720	(25 free spins)
5-Scatter combinations	243	(50 free spins)

3-Scatter probability	1.0838%
4-Scatter probability	0.0677%
5-Scatter probability	0.0017%
Overall probability	1.1533%

Average initial spins awarded	10.9398
Average final spins awarded	12.5193

Average linepay win per spin	1.8498
Average scatter win per spin	0.0754
Average bonus round win per spin	0.1465

Average total win per spin	2.0717
Average total win per feature	25.9357

Total free spins return	29.9112%
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Game Summary

Base game return	49.4477%
Bonus round return	14.6489%
Free spins return	29.9112%
Total return	94.0077%