

Milk Token and Butter Token

A cryptocurrency system for generating funding for charity.



Milk Token Team

Introduction

There has been a recent fervor surrounding the development and launch of “meme” tokens with little to no utility value other than providing early buyers with large profits as the result of being subjected to pump and dump schemes. Some of these tokens reach market capitalization upwards of 10s of millions of US Dollars and experience trading volumes of millions of US Dollars a day. The original concept behind the Milk Token was to capture some of this large stream of funds to be dedicated to the cause of helping society by collecting a percentage of every transaction and allocating those funds to be collected by a dedicated charity wallet and using the community surrounding the token to vote on a charity that those funds should be allocated to. Unfortunately, due to an arithmetic error made in the contract code for the Milk Token, the function that was meant to reserve some of these funds for charity did not function and does not reserved funds. To counter the loss of the original value proposition of the token, the team has made concerted efforts to develop a solution by which the Milk Token can be used to automate the collection of funds for charity in the form of the Butter Token, a token gained by a Milk Token holder staking their Milk in the Butter Token Contract. This Butter Token includes a proper method for reserving and collecting funds to a charity wallet automatically. The current functionality of the Milk Token and the proposed functionality of the Butter Token is discussed herein.

Milk Token Transactions and Tokenomics

The Milk Token is a BEP-20 token that has a 2% reflection amount for each transaction made using the token. The Milk Token also has a 4% fee on every transaction that is automatically processed by the contract and turned into a liquidity pair of MILK/WBNB and sent to a locked liquidity contract. The generalized calculations for a Milk Token transaction are described below.

Token Reflection (Auto-staking)

$$\text{Distributed Amount} = \text{Transaction Amount} * 0.02$$

$$\text{Distribution Per Address} = (\text{Distributed Amount}) * \frac{(\text{Address Owned Amount})}{\sum(\text{Total Milk Supply})}$$

$$\text{Burned Amount} = (\text{Distributed Amount}) * \frac{(\text{Burn Address Owned Amount})}{\sum(\text{Total Milk Supply})}$$

Automated Liquidity Generation

$$\text{Tokens Taken For Liquidity} = \text{Transaction Amount} * 0.04$$

$$\text{Tokens Swapped to BNB} = \text{Tokens Taken For Liquidity} * 0.5$$

$BNB_{Liq} \equiv$ BNB returned from Pancakeswap following the swap

$$\text{Tokens}_{Liq} = (\text{Tokens Taken For Liquidity}) - (\text{Tokens Swapped to BNB})$$

BNB_{Liq} and Tokens_{Liq} are then sent to Pancakeswap to generate LP (Liquidity provider) tokens which are in-turn sent to a locked liquidity contract.

Butter Token Transactions and Tokenomics

The Butter Token is a BEP-20 that has a 2% fee on every transaction that is automatically processed by the contract and turned into a liquidity pair of BUTTER/WBNB and sent to a locked liquidity contract. The Butter Token also includes a 2% rewards distribution fee for Milk Holders who have staked their Milk in the Butter Token Contract, a 5% fee to be reserved for funding for charities, and a 1% fee reserved for expenses related to business/marketing of these tokens for every transaction. The generalized calculations for a Butter Token transaction are described below.

Rewards Distribution

$$\text{Reward Distribution} = \text{Transaction Amount} * 0.02$$

$$\text{Distribution Per Milk Staker} = (\text{Distributed Amount}) * \frac{(\text{Address Staked Milk})}{\sum(\text{Total Staked Milk})}$$

Automated Liquidity Generation/Fee Collection

$$\text{Tokens Taken For Liquidity} = \text{Transaction Amount} * 0.1$$

$$\text{Tokens Swapped to BNB} = \text{Tokens Taken For Liquidity} * 0.5$$

$BNB_{Liq} \equiv$ BNB returned from Pancakeswap following the swap

$$BNB_{Charity} = BNB_{Liq} * 0.5$$

$$BNB_{Expenses} = BNB_{Liq} * 0.1$$

$$BNB_{LiqRemaining} = BNB_{Liq} - BNB_{Charity} - BNB_{Expenses}$$

$$\text{Tokens}_{Liq} = (\text{Tokens Taken For Liquidity}) - (\text{Tokens Swapped to BNB})$$

$$\text{Tokens}_{LiqRemaining} = \text{Tokens}_{Liq} * 0.4$$

$BNB_{LiqRemaining}$ and $\text{Tokens}_{LiqRemaining}$ are then sent to Pancakeswap to generate LP (Liquidity provider) tokens which are in-turn sent to a locked liquidity contract.

Butter/Milk Staking Mechanics

The mechanism chosen to distribute rewards to Milk Holders who have chosen to stake their Milk in the Butter Contract is a constant time ($O(1)$) algorithm that is described in *Scalable Reward Distribution on the Ethereum Blockchain*. This mechanism was selected for its scalability as more simplistic methods run the risk of exceeding the block gas limit with a large number of stakers. These rewards are distributed on every Butter transaction to Milk Holders who currently have staked Milk held within the Butter Token Contract.

Staking Process Outline

1. A Milk Holder (Staker) executes a transact function within the Butter Contract called `_stakeMilk` with the amount of Milk that they wish to stake. The total amount of Milk staked by a Milk holder cannot be $>50\%$ of their total Milk Holdings, including what is already staked. The contract then collects this Milk from the Staker and add the staked amount to the Staked Milk Pool as well as and address mapped storage for the Staker's total staked Milk. The Staker is able to withdraw their stake at any time by executing a transact function within the Butter Contract called `_unstakeMilk`, which will send the Staker's Milk back to their wallet and remove their stake from the Staked Milk Pool.
2. Every transaction using the Butter Token will distribute rewards to the Staker in the form of Butter Tokens held within the Butter Token Contract proportional to their share of the Staked Milk Pool.
3. The accrued Butter Token Rewards can be withdrawn by the Staker at any time by executing a transact function within the Butter Token Contract called `_claimButter`. This function will calculate the total rewards accrued by the Staker since their stake entry and will send that amount to the Staker's wallet. Butter Token Rewards are held within the Butter Token contract until the Staker withdraws them manually.

This staking process will be streamlined by the development of a front-end web3 application that will connect to a user's wallet allowing them to execute these function calls within their web3 browser of choice.

Why collect Expenses in the form of transaction fees?

Many similar projects include large dev wallets that contain a significant portion of the total supply of a token to be sold as the need for funding arises. It is the opinion of the Milk Token Team that this creates a significant vulnerability in which these dev wallets can be used to drain a significant portion of the underlying liquidity of the token if the developer chooses to. This creates a situation in which users of the token must trust the developers not to do this. The mechanism of automatic fee collection used by the Butter Token makes the collection of these funds automated and trustless for the token holders.

Additional Considerations

- Developer wallets are subjected to 2x the fees of normal token holder wallets for both the Butter and Milk tokens
- The Charity and Expense wallets cannot send or receive Milk or Butter tokens, avoiding a situation in which these wallets could be used to drain liquidity.

Links and References

Batog B., Boca L., Johnson N., [Scalable Reward Distribution on the Ethereum Blockchain](#), 2018.

<https://www.milktoken.net/>

[Milk Token contract](#)

[Milk Token source code](#)

[Butter Token Contract](#)

[Butter Token source code](#)

[Butter Burner contract](#)

[Butter Burner source code](#)

Addenda

Rewards Slashing (3/31/21)

The Milk/Butter staking system is reliant on the fact that a Milk holder can only stake up to 50% of their Milk holdings. This is to ensure continued functionality of the Milk token after the release of Butter. If a Milk holder ends up with >50% of their wallet balance of Milk being staked, through the sale/transacting of the Milk token, their rewards will be slashed and redistributed to the staking pool, themselves excluded, unless they acquire enough Milk to meet this 50% maximum staking requirement. The web3 app used for staking interaction will provide ample warning if a user is out of compliance with the requirements.

Butter Deflationary Mechanism (4/6/21)

To incentivize long holding of the Butter Token, a deflationary mechanism for Butter was added in the form of a separate contract that received 3.4 trillion Milk tokens, staked 1.7 trillion, and added the remainder to liquidity. This contract (the Butter Burner) is located at address `0x99d0F6525E4b53eA817848fB750b6Ad763879516`. Any Butter Token rewards gained by this contract are unclaimable and the contract code does not allow any Milk/Butter tokens to be take out of the Butter Burner contract address. The Butter Tokens earned by the Burner contract are removed from the circulating supply forever. At the time of this writing, the Burner contract gives Butter a deflationary rate of ~0.02% of every transaction.