

# Monsanto Simulator - Official Manual

Monsanto simulator is a simple strategy-ish game. The objective of the game is to win, by making the other player run out of money. There are two players, who play the game at the same time.

## Basic Concepts

Here, how to actually play the game won't be explained, just the basic concepts behind the gameplay.

### Money

Money is at the center of Monsanto Simulator. You must spend money to buy new mates, the only way you can attempt to hurt the other player is by draining them of their money, and if you run out of money, you lose the game.

### Turns

The game consists of turns. Each turn has two phases: Buying Mates, and Fighting. During the Buying Mates phase, both players can buy new mates for their pawns. Then, during the Fighting phase, your pawns will carry out their specific actions.

### Sides

Each player plays as a different "side": Monsanto or The Opposition. The two sides are exactly the same, except that The Opposition has a farmer instead of a crop as one of their pawns. Functionally, they're both identical. The player who gets a blueish background is Monsanto, and the one with the gold background is The Opposition.

### Pawns

You have 4 different "pawns", each of which do different things. The icons for these pawns are shown below:



Here is a short description of what each pawn does, from left to right:

#### Crop/Farmer

The crop (Monsanto) or farmer (The Opposition) gives you profit during the end of each Fighting phase. This is your only source of money in the game.

#### Lawyer

The lawyer is one way to deal damage to your opponent. During the Fighting phase at the end of each turn, each players' lawyer has a certain chance of winning. By default, this is 50%, but depending on your lawyers' genes, this can change. Whoever loses the lawyer battle takes "damage" in the form of lost money.

#### Soldier

The soldier is another way to deal damage to your opponent. During the Fighting phase, each players' soldier does damage (once again, in the form of lost money) to the other player. Unlike the lawyer, both players' soldiers do damage every turn.

#### Scientist

The scientist controls how many mates options you have and how much they cost. This will be gone over in more detail later.

#### Genes/Traits

Each of your pawns has genes. Depending on what genes they have, they will have certain traits. For example, one of the traits that a soldier can have is a small damage boost. This trait makes the soldier deal more damage than normal. Depending on the soldier's genes, he/she may or may not have that trait. Traits can be recessive or dominant, and act accordingly.

#### Mates

You cannot directly alter the genes of your pawns to give them certain traits. However, you can indirectly control them by buying mates for your pawns. You will always have mate options displayed next to your pawn, and you can view the genes of these mate options, as well as your current pawn. Based on their

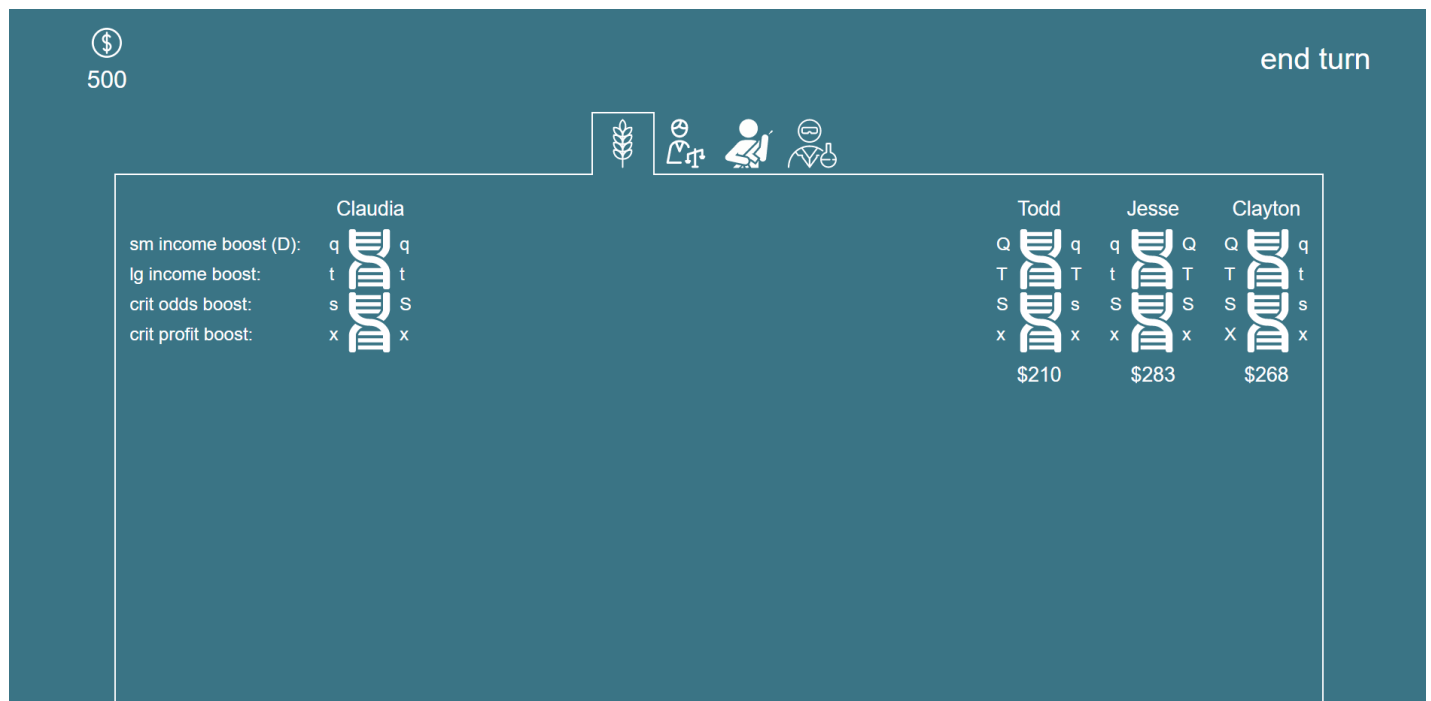
genes, you can buy a mate who has favorable genes. This mate will breed with your current pawn, and their child will become the new pawn. By default, you will have one mate to choose for each of your pawns (although you don't have to buy it; you can leave your pawn as-is if you wish). However, if your Scientist has certain traits you can have 2 or 3 options per pawn.

## Actually playing the game

### Starting the game

First, you will need to find a friend. You and your friend should both go to [markasoftware.com/monsanto](http://markasoftware.com/monsanto) on different devices. Then, you will need to choose a room name. This can be anything, as long as it is unique. You and your friend should both type this where it asks for it, then press start. You don't need to press start at the same time.

### The interface



Here are the basic elements of the interface:

Money

The amount of money you currently have is displayed in the upper-left corner.

End Turn button

The end turn button is located in the upper-right corner.

Pawns

In the upper-middle area of the screen are the pawns icons. Clicking on one will bring you to that pawn's tab, and display their genes and mate options.

List of Traits

In the center-left area of the screen is a list of the possible traits for your current pawn.

Current Pawn

Just to the right of the list of traits is your current pawn.

Mate Options

In the center-right area of the screen are the possible mates you could buy. Their prices are also listed.

## Understanding the trait list

The trait list is very important, as it tells you the traits that each of your pawns could have. Lets look at the trait list for the crop/farmer:

sm income boost (D):

lg income boost:

crit odds boost:

crit profit boost:

Here, you can see there are 4 traits that your lawyer could have. You can figure out what each of these traits do by clicking on the “Trait Reference” link on the Monsanto Simulator homepage, and looking at the description for the respective trait. The main important thing here is the one marked with a (D) . That one is a dominant trait. All the traits without the (D) are recessive, meaning that it is more difficult to get those traits.

## Reading the genes

It is crucial to know how to read the genes of your pawn and the mate options. Here is an example one:

Sam		
sm income boost (D):	Q	q
lg income boost:	t	T
crit odds boost:	S	s
crit profit boost:	X	x

The trait list is also included on the left in this example. The genes in each row correspond to the trait label on that row. For example, the Q genes correspond to the sm income boost trait, and the S genes correspond to the crit odds boost trait. An uppercase letter represents a dominant allele, and a lowercase letter represents a recessive allele.

So, in this example, lets take the first row, for the sm income boost trait. The current pawn is heterozygous for this trait, because he has one uppercase Q , and one lowercase q . Because this trait is dominant (marked by the (D) ), if there is at least one dominant allele, the pawn will have this trait. Sam has one Q allele, so he does have this trait.

Lets have another example. Lets take the lg income boost trait. This is a recessive trait. Sam is heterozygous for this trait. Because recessive traits need two recessive alleles to be expressed, and Sam only has one recessive q allele, he does *not* have this trait.

## Buying a mate

You can buy a mate by simply clicking on the price listed below a mate. Then, several things will happen:

- The other mates will fade out

- Crossing over will occur
- Independent assortment will occur
- The new pawn and mates will appear

Lets go over the important steps in detail:

## Crossing Over:

Each of the DNA icons in the middle of each pawn/mate represents a chromosome. Genes on the same chromosome (i.e. next to the same dna icon) are linked. Each time you buy a mate, crossover will occur exactly once on the mate's genes. You will be able to see this by the crossed-over alleles fading out then back in with the new, switched genes.

## Independent Assortment

After the crossing over, one allele for each gene will be selected for your mate and pawn. The chosen alleles will be in pairs, because they are linked. The others will fade out, like in this example:



## New Pawn and Mates

After the independent assortment, your new main pawn will be the child of your last pawn and the mate you choose, and it's genes will be the ones selected during independent assortment. The new mates will be randomly generated. For example, here is the new pawn after the independent assortment shown in the last image:



As you can see, it's genes are the combination of the ones selected during independent assortment.

## Ending the Turn

After you have bought all the mates that you want to, press the end turn button. Once both players have pressed it, the game will continue to the Fighting phase of the turn. After that, a new turn will begin. This will continue until somebody wins.