

# Agricultural Marketing Guide >>



## Options on Futures – an Introduction

### Introduction

There are two basic types of options on futures, put options and call options. An option is a subset of the futures market and each option is specific to a certain commodity and futures month for that commodity. Options are similar to insurance in several ways, including some of the related terminology. Options bought or sold through a commodity futures broker do not have a physical delivery commitment attached to them. Some grain companies offer contracts that use options, although those handled by a grain company generally contain a physical delivery commitment. The purpose of this article is to provide an introduction to options on futures. There is much more information on options available through books and the internet.

### The Basics - Puts

An option is a choice. With that in mind, purchasing a put option gives the buyer of that option the right, but not the obligation, to enter into a “sell” futures position at a predefined price (i.e., the strike price) within a certain time period. This right can be “exercised” (i.e., turned into the futures position) anytime before that option’s expiry date, and regardless of what the futures price of that commodity does.

From a hedging point of view, buying a put option locks in a minimum futures price at a cost, the premium. For example, a canola producer could buy a put option to protect against price downside from a certain price level. Buying a put option leaves the price upside open since, with an option, you can lock in the predetermined futures price, but you don’t have to. So, if the price of canola rose during the time that the put option was owned, the canola producer can still sell canola at the higher price. Meanwhile, as the futures price rose, the value of the right to sell canola futures at the fixed option price level will drop, and the premium paid for that option may be lost. This optional aspect of an option is an important difference from a sell futures position, which locks in a certain futures price. Another important distinction of buying an option compared to having a futures position is that the option premium paid plus commission is the maximum cost of guaranteeing a minimum price. There are no margin calls when you buy an option.

Here is an example of a put option purchase using numbers from the ICE Canada canola market.

March canola futures = \$515.00/tonne

March \$520 PUT option premium = \$26/tonne

Purchasing the March 520 put option for \$26/tonne (plus about \$1/tonne commission) would give you the right to create a sell futures position in your futures account at a price of \$520/tonne anytime up to expiry of that option in late February. It is this right that gives the put option a value. The premium of the option will change as the futures price changes, as time passes, and in response to volatility in the underlying futures contract to which that option relates.

## The Basics - Calls

Purchasing a call-option gives the buyer of that option the right, but not the obligation, to enter into a “buy” futures position at a predefined price (i.e., the strike price). This right can be “exercised” anytime before that option’s expiry date, and regardless of what the futures price of that commodity does. From a hedging point of view, buying a call option locks in a maximum futures price. For example, a canola crusher could buy a call option to protect against price upside above a certain price level. Since exercising the call option is “optional”, if the price of canola falls, the crusher could just let the call option expire and buy open market canola at the lower price.

Another use of a call option is for replacement strategy. For example, a farmer delivers and prices some canola. Believing that the futures price will rise, the farmer buys call options on a similar quantity of canola to that sold physically. By doing so, he can benefit from a potential rise in the futures market, thus adding value to the canola already sold. By using the call option purchase for this strategy, risk is limited to possible loss of the premium paid for that call option. Meanwhile, he has the majority of the proceeds from the canola sale and has reduced risk of spoilage and theft on the quantity of canola sold.

Here is an example of a call option purchase using numbers from the ICE Canada canola market.  
May canola futures = \$509.00/tonne  
May \$510 CALL option premium = \$27/tonne

Purchasing that March 510 call option for \$27/tonne (plus about \$1/tonne commission) would give you the right to create a buy futures position in your futures account at a price of \$510/tonne anytime up to expiry of that option in late April. It is this right that gives the call option its value.

### **You buy an option...then what?**

If you buy an option, there are three ways to deal with that option:

1. You can exercise the option, that is, create the specific futures position that buying the option has given you the rights for. To do this, you would just ask your broker to “exercise” your option. When that is complete, you no longer own an option, but now have a new futures position. If you exercise a put option, you will create a sell futures position in your account; if you exercise a call option, you will create a buy futures position in your account. The specific futures position created will be determined by the characteristics of the option that you owned. Using the canola put option in the previous

example, exercising the March 520 put option would create in your account a sell position in March canola futures at a price of \$520/tonne.

2. You can sell the option as an option for its premium, which might be greater or less than the premium when you purchased that option. This alternative is often the best choice. You can sell an option anytime that futures and options are trading. You may be able to capture some option premium that would be lost when exercising the option or letting the option expire. Brokerage commissions to sell an option are usually less than when you exercise the option.
3. If you hold the option until the end of its life, it may not have any remaining premium. When the remaining option premium is less than the brokerage cost to sell that option, then you would just let the option expire. Like insurance, in letting an option expire, you could consider that the option provided specific protection (i.e., price) while you owned that right, but you did not have a “claim” before the term of that price risk coverage ended.

## Option Premium

There are two parts to an option premium ... intrinsic and time value. Intrinsic value is what the option would be worth as a futures position if the option was exercised. For example, there would be intrinsic value in the March \$520 put option whenever March canola futures are below \$520/tonne. With March futures at \$515/tonne, there would be \$5/tonne of intrinsic value in the March 520 put option. Of the total option premium of \$26/tonne, when March futures are \$615/tonne, there is \$5/tonne of intrinsic value and \$21/tonne of time value. Time value is sometimes referred to as risk premium. Two main factors affect time value, and they are time itself, and volatility of the underlying futures price. Both of these factors are elements of risk. The longer the option life, the greater the risk to someone selling that option. The more volatile the underlying futures contract, the greater the risk to someone selling that option. Note that, if an option is exercised, any remaining time value in that option is immediately extinguished. Until expiry of the option, there is usually some time value in an option, so it is better to capture some return of that time premium by selling the option rather than exercising it.

The premium (value) of an option is subject to change by open market trading whenever the futures market is trading. Canola option strike prices are \$5/tonne apart, so there are many strikes prices available. On days when a particular option strike price does not trade, the commodity exchange uses a computer program to estimate the daily settlement value of that option.

## Hedge Example – Put Option

The purchase of a March 520 canola put option at a cost of \$26/tonne (plus commission) can be interpreted as locking in a minimum futures price. If the entire premium (cost) was eventually lost, buying that option can be considered as locking in a minimum March canola futures price of \$493/tonne (520 strike price MINUS the \$26/tonne premium minus \$1/tonne commission). If the futures price falls from \$515/tonne, the premium of the \$520 put option will tend to rise.

Alternatively, if the futures price rises, the value of the 520 put option will tend to fall. But, if the futures price rises, it implies that the value of physical canola is also rising. If the option is kept to expiry, and if then the option has intrinsic value (i.e., March futures below \$520/tonne), the \$520 put option would be automatically exercised, thus creating a profitable March canola futures “sell” position (not considering the original cost of the option). That sell futures position would then have to be offset at some time before the March canola futures expires.

## **Delivery Commitment Flexibility**

Buying an option through a commodity futures broker leaves the basis portion of price open. That can be a good thing if basis levels for the expected delivery period are considered too weak to lock in, or if one does not want at the time to commit to a physical sale to a certain buyer. The put option is an attractive alternative to crop producers who are concerned about committing to a delivery with the possibility of a crop shortfall (on quantity or quality), to those producers who have already forward contracted with physical buyers to their comfort level or to producers who wish to retain the ability to take advantage of possible higher prices.

## **Summary**

A first step in planned marketing is to know your costs of production for a crop, and then use that information as a base for establishing profitable price targets as part of a marketing plan. As a crop producer, using a put option can provide protection from a price drop while retaining flexibility to take advantage of a higher price and still shop for the best buyer in terms of basis and grade.

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