



# THE Diapason Commodities Index® Agriculture Non- GMO Manual

A description of the Diapason Commodities Index®  
Agriculture Non-GMO

**2009 Version**

December, 2008

## **Diapason Commodities Index® Agriculture Non-GMO**

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*The information presented in this DCI® AG NGMO Manual mirrors the methodology that is used for deciding on the composition and calculation of the Diapason Commodities Index® Agriculture Non-GMO (DCI® AG NGMO®).*

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## Diapason Commodities Index® Agriculture Non-GMO

**The Committee governing the DCI® Agriculture Non-GMO has decided to do the following changes:**

According to liquidity and fundamental figures, new weights have been defined for 2009.

**Changes will be effective at the end of January 2009.**

**2009 DCI® Agriculture Non-GMO weights:**

Name	Generic Code	Exchange	Weight TW
TGE NGM Soybean	KS	TGE	21.42%
EURONEXT Milling Wheat	CA	Euronext	18.57%
EURONEXT Feed Wheat	QK	Euronext	8.59%
EURONEXT Corn	EP	Euronext	7.52%
EURONEXT Rapeseed	IJ	Euronext	15.18%
MGEX HRS Wheat	MW	MGEX	28.72%

# Diapason Commodities Index® Agriculture Non-GMO

## 1. Preface

The Diapason Commodities Index ® Agriculture Non-GMO (“DCI® AG NGMO®” or the “Index”) is designed to provide a non-genetically modified commodity futures Index inside the Organisation for Economic Co-operation and Development. The OECD region covers exchanges in Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea (South), Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. The Index was created by Diapason Commodities Management (“DCM”) in October 2006.

The index consists of 6 agricultural components.

## 2. DCI® AG NGMO Methodology

### 2.1. DCI® AG NGMO Construction

Diapason Commodities Management, which created the DCI® AG NGMO®, used two main principles in designing the Index:

- World Trade Significance (WTS)
- World Contract Liquidity (WCL)

#### **(1)World Trade Significance**

A commodity will be considered fit to be included in the index if it is a non genetically modified commodity and if it represents a significant role (larger than 0.1% of total world trade) in international exports.

#### **(2)World Contract Liquidity**

WCL is defined as the most recent average combined market value and open interest. A commodity will be considered fit to be included if its WCL exceeds 10'000'000 USD. All DCI® AG NGMO contracts have to pass the WCL threshold. DCM has the right to adjust this threshold whenever identified as appropriate.

The total of 33.33% WTS and 66.67% WCL represents the final contract weight (FCW) of the index.

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### 2.2. Definition

CC	Continuity Constant. The constant used to maintain continuity of the Price index during re-weighting periods.
MCW	Monthly Contract Weight. The Nominal weights or Scalars multiplied DCP and calculated on the business day preceding the start of the roll period such that on such day, the Initial weights are equal effective index weights.
IW	Initial Weight. The Percentage Index weight fixed for each component represented in the DCI® AG NGMO index methodology and ratified by the DIAPASON COMMODITIES MANAGEMENT DCI® AG NGMO committee.
DCP	Daily Contract Price: is the daily reference price used in the calculation of the index. First and second DCI® AG NGMO nearby are designated by the DIAPASON COMMODITIES MANAGEMENT DCI® AG NGMO committee.
FX	FX is the Foreign currency rate used to convert a Futures contract value expressed in its original currency to the currency in which the index is quoted. The expression of FX is given according to market standard and practices and adjusted by the CRY factor.
CRY Factor	The CRY Factor is the adjusting factor used in the foreign currency conversion.
DCW	The Daily Component Weight is the product of currency adjusted Daily Contract Prices (DCP) with Monthly Contract weights (MCW).
TCW	For an index, the Total Component Weight (TCW) is the sum of Daily Component weights (DCW).
PI	Price Index or the simple measure of composite basket price level notwithstanding any adjustment due to rolls. The Price Index is only tradable at maturity and its forward price curve follows forward price curve of its underlying constituents.
ER	Excess Return Index, measures the uncollateralized returns of the DCI® AG NGMO basket on a roll adjusted basis.
TR	Total Return Index, measures the collateralized returns of the DCI® AG NGMO basket.
RW	Roll Weight, is for each component, the weight associated to the first and second DCI® AG NGMO nearby for each day of the roll period. During the roll period, the RW can take the values 1.0, 2/3, 1/3 and 0.0.

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TCWR	The Total Component Weight Ratio of Total Component Weights in use on the day prior to the first roll day of the re-weighting periods and used in order to maintain continuity of the Price index during those transition periods.
BDR	The Basket Daily Return is the daily composite basket return weighted appropriately by RWs and MCWs to reflect assets held from one DCI® AG NGMO Business Day to the next.
IRR	Interest Rate Return is the return reflecting the fixed income performance of the index in its designated currency from one DCI® Business Day to the next
ARR	For any DCI® Business Day, the Available Reference Rate is the rate of interest associated with the reference price source to which the Available Reference Rate adjustment is added.

# Diapason Commodities Index® Agriculture Non-GMO

### 3. The DCI® AG NGMO Calculation

Diapason Commodities Management calculates and publishes three:

- The “Price Index” (DCI® AG NGMO-PI),
- The “Excess return” (DCI® AG NGMO -ER),
- The “Total Return” (DCI® AG NGMO-TR).

#### 3.1. The “DCI® AG NGMO®-Price Index“ (DCI® AG NGMO-PI)

##### 3.1.1. Price Index calculation during non roll periods

The DCI® AG NGMO Price Index (DCI® AG NGMO-PI) tracks the price level of commodities represented in the index.

The DCI® AG NGMO-PI is equal to the Total Component Weight (TCW) divided by the Continuity Constant (CC). The TCW for any given non-roll date is calculated as the sum of Daily Contract Prices (DCP), times respective Monthly Contract Weights (MCW). The DCP are adjusted by price scalars reflecting reference currency rates versus the U.S. Dollar such that all DCNP are expressed in U.S. Dollars. For non-roll days we have:

$$DCI^{\text{®}}-AG-NGMO-PI_t = \frac{\sum_{c=1,N} DCW_{c,t}}{CC} = \frac{TCW_t}{CC} \quad (1)$$

where:

$$DCW_{c,t} = DCP_{c,t} \times MCW_{c,t} \times [FX_{c,t}]^{\text{CRY Factor}} \quad (2)$$

$MCW_{c,t}$  is the Monthly Contract Weight for a component c at time t,

$DCP_{c,t}$  is the Daily Contract Price for a component c at time t,

$FX_{c,t}$  is the Currency exchange rate between the quotation currency of the component c and the index reference currency. For official settlement price, the DCI® AG NGMO Index uses a direct or USD cross fixing price.

CRY Factor is +1 or -1 (see table I.B below)

The index is calculated in U.S.D and Euro.

**TABLE I.B . DEFINITION CRY EXCHANGE RATES, CRY FACTORS DEFINITIONS.**

CCY	CCY		Quotation	CRY Factor	Rate Source
USD	USD			1	
JPY	JPY	USD-JPY	JPY per USD	-1	BB: JPY Curney HP <GO>
EUR	EUR	USD-EUR	USD per EUR	1	BB: EUR Curney HP <GO>

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### 3.1.2. The Roll period - Index Rebalancing and continuity

On the DCI® AG NGMO®, the roll occurs during the last three DCI® AG NGMO business days of the month. During the roll period, the index is shifted from the first to the second nearby baskets at a rate of 33.33% per day.

On the last DCI® AG NGMO Business Day, the roll is completed unless the roll period is extended for a component as a result of a market disruption event such as a limit day or a market disruption event.

During the roll period of each month the Index is rebased towards Initial Weights (IW), as defined by the DCI® AG NGMO committee.

The DCI® AG NGMO will roll into new Monthly Contract Weights (MCWs) and Continuity Constants (CCs). On the day before the start of the roll period, the DCI® AG NGMO is calculated based on the old MCWs and CCs of the current DCI® AG NGMO period.

During the roll period the calculation of the DCI® AG NGMO®- Price Index takes the following expression:

$$DCI®-AG - NGMO - PI_t = \frac{TCW_t}{CC} \quad (3)$$

where

$$TCW_t = \frac{CC_{new}}{CC_{old}} \left[ \sum_{c=1,N} MCW_{c,old,t} \times RW1_{c,t} \times DCP1_{c,t} \times [FX_{c,t}]^{CRY \text{ Factor}} \right] + \sum_{c=1,N} MCW_{c,new,t} \times RW2_{c,t} \times DCP2_{c,t} \times [FX_{c,t}]^{CRY \text{ Factor}} \quad , \quad (4)$$

With

$$TCWR_t = \frac{\sum_{c=1,N} MCW_{c,new} \times DCP_{c,t} \times [FX_{c,t}]^{CRY \text{ Factor}}}{\sum_{c=1,N} MCW_{c,old} \times DCP_{c,t} \times [FX_{c,t}]^{CRY \text{ Factor}}} \quad , \quad (5)$$

Where  $DCP_{c,t}$  is the Daily Contract Price for the component  $c$  of the second nearby price at time  $t$ ,

and

$$CC_{new} = TCWR_t \times CC_{old} \quad , \quad (6)$$

If there is a disruption event on or beyond the last 3 business days of the Month, the amount to be rolled will be carried forward until the next DCI® AG NGMO business day.

The calculation of the new MCWs and CC is effected monthly, at close of business on the business day immediately preceding the first roll day (i.e. the fourth to last business day of the month).

On that day, the new MCWs are solved such that the calculated effective weights match the Initial Weights (IW) defined by the DCI® AG NGMO Committee.

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We first define  $MCW_{c=R, new} = x = 10000$ , where  $R (1 \leq R \leq N)$  and 10000 is an arbitrary constant.

We then solve for each  $c$ ,

$$\frac{MCW_{c, new} \times DCP_{c,t} \times [FX_{c,t}]^{CRY \text{ Factor}}}{\sum_{j=1, N} MCW_{j, old} \times DCP_{j,t} \times [FX_{j,t}]^{CRY \text{ Factor}}} - IW_c = 0 \quad (7)$$

The new MCWs will be calculated using the following formula:

$$\begin{aligned} MCW_1 &= \frac{IW_1 \times DCP_R \times [FX_{c,t}]^{CRY \text{ Factor}}}{IW_R \times DCP_1 \times [FX_{c,t}]^{CRY \text{ Factor}}} x \\ MCW_2 &= \frac{IW_2 \times DCP_R \times [FX_{c,t}]^{CRY \text{ Factor}}}{IW_R \times DCP_2 \times [FX_{c,t}]^{CRY \text{ Factor}}} x \\ MCW_3 &= \frac{IW_3 \times DCP_R \times [FX_{c,t}]^{CRY \text{ Factor}}}{IW_R \times DCP_3 \times [FX_{c,t}]^{CRY \text{ Factor}}} x \\ &\vdots \\ MCW_R &= x \end{aligned} \quad (8)$$

### 3.2. The “DCI® AG NGMO®-Excess Return“ (DCI® AG NGMO-ER)

#### 3.2.1. Calculation during non roll periods

The DCI® AG NGMO-ER is an Excess Return Index. The index is calculated according to the following formula:

Define BDR (Basket Daily Return) as:

$$BDR_t = \frac{TCWF_t}{TCWI_{t-1}} - 1 \quad (9)$$

With

$$TCWI_{t-1} = \sum_{c=1, N} DCP_{c,t-1} \times [FX_{c,t-1}]^{CRY \text{ Factor}} \times MCW_{c,t-1} \quad (10)$$

$$TCWF_t = \sum_{c=1, N} DCP_{c,t} \times [FX_{c,t}]^{CRY \text{ Factor}} \times MCW_{c,t-1} \quad (11)$$

Where

TCWF is the Total Component Weight Final

TCWI is the Total Component Weight Initial

The expression of the DCI® AG NGMO-ER is:

$$DCI\text{-}AG\text{-}NGMO\text{-}ER_t = DCI\text{-}ER_{t-1} \times (1 + BDR_t) \quad (12)$$

The DCI® AG NGMO-ER is set equal to 1000 on November 27th, 2006.

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### 3.2.2. Calculation during roll periods

The Basket Daily Return is defined as the percentage change in the TCW of the DCI® AG NGMO from one DCI® AG NGMO Business Day to the next. It reflects the return that would have been realized by holding positions in the first and second DCI® AG NGMO nearby contracts appropriately weighted to reflect the MCWs (IW), from the closing of the exchange on the prior DCI® AG NGMO Business Day to the closing of the exchange on the next DCI® AG NGMO Business Day.

During the roll period we have:

$$TCWI_{t-1} = \frac{CC_{new}}{CC_{old}} \left[ \sum_{c=1,N} MCW_{c,old,t-1} \times RW1_{c,t-1} \times DCP1_{c,t-1} \times [FX_{c,t-1}]^{CRY \text{ Factor}} \right] + \sum_{c=1,N} MCW_{c,new,t-1} \times RW2_{c,t-1} \times DCP2_{c,t-1} \times [FX_{c,t-1}]^{CRY \text{ Factor}} \quad (13)$$

and

$$TCWF_t = \frac{CC_{new}}{CC_{old}} \left[ \sum_{c=1,N} MCW_{c,old,t-1} \times RW1_{c,t-1} \times DCP1_{c,t} \times [FX_{c,t}]^{CRY \text{ Factor}} \right] + \sum_{c=1,N} MCW_{c,new,t-1} \times RW2_{c,t-1} \times DCP2_{c,t} \times [FX_{c,t}]^{CRY \text{ Factor}} \quad (14)$$

Where RWs can take the following values:

$$RW1_{c,t-1} = \{1, 2/3, 1/3, 0\}, \quad RW2_{c,t-1} = \{0, 1/3, 2/3, 1\},$$

Then

$$BDR_t = \frac{TCWF_t}{TCWI_{t-1}} - 1 \quad \text{And} \quad DCI\text{-}AG\text{-}NGMO\text{-}ER_t = DCI - ER_{t-1} \times (1 + BDR_t)$$

### 3.3. The “DCI® AG NGMO®-Total Return” (DCI® AG NGMO-TR)

#### 3.3.1. Calculation of the Total Return Index

The DCI® AG NGMO-TR Index is calculated according to the following formula:

$$DCI\text{-}AG\text{-}NGMO\text{-}TR_t = DCI - TR_{t-1} \times (1 + BDR_t + IRR_t) \quad (15)$$

Where

**IRR** : **Interest Rate Return**, is the compounding factor

$$IRR_t = \left[ \frac{1}{1 - \frac{91}{360} \times DRR_{t-1}} \right]^{\frac{days}{91}} - 1, \quad (16)$$

Where “days” is the integer number of calendar days from the previous DCI® AG NGMO business Day to the DCI® AG NGMO business day on which the calculation is made.

**DRR** : **Daily Reference Rate**, is a function of the rate available on the immediately preceding DCI® AG NGMO Business Day (ARR)

$$DRR_t = 0.9 * ARR_t \quad (17)$$

The DCI® AG NGMO-TR is set equal to 1000 on November 27th, 2006.

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### 3.3.2. Available Reference Rate

The Available Reference Rate used for the calculation of the respective DCI® AG NGMO Total Return indices is defined below:

ARR is the 91-Day U.S. Treasury Bill (3 Months) auction rate, designated as “high Rate” as published by the “treasury security auction Results” report, published by the Bureau of public Debt and available on Bloomberg USB3MTA Index <GO> or Reuters USAUCTION9.

The rate is generally published once per week on Monday and effective on the DCI® AG NGMO Business Day immediately following.

### 3.4. DCI® AG NGMO Business Day and Disruption event

#### 3.4.1. DCI® AG NGMO Business Day Definition

A DCI® AG NGMO business Day is a day on which all the exchanges that list futures contracts included in the DCI® AG NGMO are open for business (including half day opening)

#### 3.4.2. Adjustments for Market disruption

If an exchange fails to publish a settlement price for a contract involved in the roll, the specific contract involved are not rolled on that day. For those contracts, the RWs remain identical to the value they had on the DCI® AG NGMO Business Day immediately preceding the Market disruption day. The roll period will be extended as long as no settlement price is made available by the exchange.

If the contract is not involved in the roll the index is calculated using the last trading price available on the exchange.

Example of values taken by RW1 and RW2 for a specific contract over the June 06 roll period if June 28<sup>th</sup> is a “market disruption event day”:

Theoretical Roll		First Roll Day	Second Roll day	Last Roll Day				
Effective Roll		First and Second Roll Day			Last Roll Day			
Index	Day	27.juin	28.juin	29.juin	30.juin	01.juil	02.juil	03.juil
Price Index	RW1	1.00	1.00	0.33	0.00	1.00	1.00	1.00
	RW2	0.00	0.00	0.67	1.00	0.00	0.00	0.00
Excess Return	RW1	1.00	1.00	1.00	0.33	0.00	1.00	1.00
	RW2	0.00	0.00	0.00	0.67	1.00	0.00	0.00

#### 3.4.3. FX Market and Interest Rate Market disruption

In the unlikely event of a referenced price source failing to publish a valid fixing rate for a referenced currency exchange rate or a valid Interest rate, the DCI® AG NGMO committee can decide to replace it by a new source with immediate effect.

#### 3.4.4. Market emergency

In cases of extraordinary circumstances making the calculation or the replication of the DCI® AG NGMO index impossible or too complex, DIAPASON COMMODITIES MANAGEMENT in consultation with the DCI® AG NGMO committee can decide to take any appropriate action.

### Appendix A: Initial Weights

Name	Generic Code	Exchange	Ccy	Weight TW	Scalar
TGE NGM Soybean	KS	TGE	JPY	21.42%	1'000.00
EURONEXT Milling Wheat	CA	EURONEXT	EUR	18.57%	1.00
EURONEXT Feed Wheat	QK	EURONEXT	GBP	8.59%	1.00
EURONEXT Corn	EP	EURONEXT	EUR	7.52%	1.00
EURONEXT Rapeseed	IJ	EURONEXT	EUR	15.18%	1.00
MGEX HRS Wheat	MW	MGEX	USD	28.72%	100.00

### Appendix B: Roll Matrix

Contract	01.janv	01.févr	01.mars	01.avr	01.mai	01.juin	01.juil	01.août	01.sept	01.oct	01.nov	01.déc
TGE NGM Soybean	V	Z	Z	G	G	J	J	M	M	Q	Q	V
EURONEXT Milling Wheat	H	K	K	X	X	X	X	X	X	F	F	H
EURONEXT Feed Wheat	K	X	X	X	X	X	X	X	K	K	K	K
EURONEXT Corn	H	M	M	M	Q	Q	X	X	X	F	F	H
EURONEXT Rapeseed	K	K	K	Q	Q	Q	X	X	X	G	G	G
MGEX HRS Wheat	H	K	K	N	N	U	U	Z	Z	Z	H	H

### Appendix C: Liquidity Weights and Fundamental Weights

Contracts	Liquidity Weights	Fundamental Weights
TGE NGM Soybean	12.93%	38.39%
EURONEXT Milling Wheat	20.67%	14.37%
EURONEXT Feed Wheat	5.70%	14.37%
EURONEXT Corn	1.48%	19.61%
EURONEXT Rapeseed	18.44%	8.67%
MGEX HRS Wheat	40.78%	4.60%