

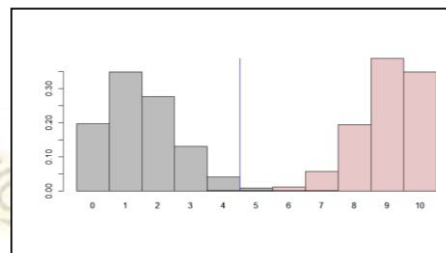


判別國產硬質玉米 SNP 分子標誌檢測套件

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簡歷：<http://www.agron.ntu.edu.tw/people/bio.php?PID=26>



市場及需求:

配合農糧管理機構的留樣措施，藉由檢驗硬質玉米的遺傳組成判別繳售玉米的來源，降低進口玉米摻混國產玉米繳售，干擾活化農地政策目標的可能性。

技術摘要:

從次世代定序技術所獲得 14,527 個高品質單核苷酸變異 (SNP) 中，選出 4 組共顯性分子標誌，其特定同質結合組合在國內栽培的 10 個硬質玉米品種所生產籽實中的頻度皆超過 90%，且在 20 批進口玉米籽實中的平均頻度低於 15%。藉由檢驗 10 粒，非特定同質結合組合少於 5 粒的標準，可有效區分國內外生產硬質玉米籽實，推估偽陽性 0.01%，偽陰性 0.99%。

優勢:

- (1) 從國內栽培 10 個硬質玉米品種選出，生產面積涵蓋率高。
- (2) 所選出分子標誌在國內栽培品種中均為相同同質結合基因型，檢驗結果不受到田間不同品種花粉污染，或於收穫、烘乾、調製等過程之中不同品種籽實混雜的影響。
- (3) 可使用自動化高通量分析設備，檢定速度快，降低人力需求。

競爭產品:

無

聯絡方式：臺大產學合作總中心，Tel: 02-3366-9945，E-mail: ordiac@ntu.edu.tw

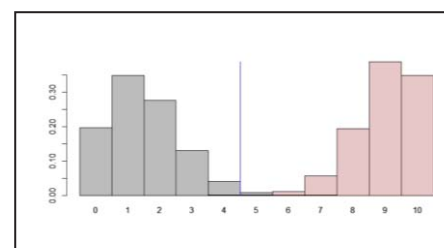


A novel SNP marker set for 10 locally produced maize varieties in Taiwan

PI : Prof. Kae-kang Hwu
Department of Agronomy, National Taiwan U.

Experience:

Member and former vice president of Variety Testing Technical Committee, International Seed Testing Association



Market Needs:

Maize farmers in Taiwan may be tempted to submit their produce adulterated with cheaper imported maize kernels and thus violate the production contract. The proposed testing method provides a technical means for the regulatory agencies in Taiwan to distinguish locally produced maize kernels from the import ones.

Our Technology:

A set of four novel single nucleotide polymorphism (SNP) markers were selected from 14,527 high quality variants obtained from parallel sequenced maize genomes. The homozygous genotypes of these four SNP markers are common (with frequency higher than 90%) to the 10 maize varieties jointly cover the vast majority of maize production area, while less frequent (with frequency less than 15%) to the imported maize kernels. A test plan that testing 10 kernels and accepting samples as locally produced with no less than 5 kernels having the combined homozygous genotype, will have an expected false positive rate of 0.01% and false negative rate 0.99%.

Strength:

- (1) The 10 maize varieties used to select the SNP marker set jointly covers vast majority of maize production area in Taiwan.
- (2) Since the genotypes of these markers are the same in the 10 locally produced varieties, test results will not be interfered by cross pollination in the field, or admixture during post-harvest processes.
- (3) Compatible with automated high throughput allele discrimination platforms.

Competing Products:

Not aware of any.

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