

ZebuCheck™ – a DNA diagnostic for zebu genes



ZebuCheck™ is the worlds first DNA based diagnostic test designed to detect zebu, or humped cattle genes. It represents ***'the only means to determine if a product contains beef from countries or regions where zebu breeds are prevalent'***. The test may be preformed on samples of fresh, cooked or processed meat products and incorporates all the advantages of DNA testing, including enhanced sensitivity, reproducibility and specificity.

Background

Cattle breeds may be split into two principal types, humped or zebu cattle and European cattle. Zebu cattle are typically found in the tropics (Asia, South America, Africa...) and are visually distinguished by a hump and dewlap. European cattle have no hump and may be found in the colder or temperate regions of the world. Aside from the hump, the two types may also be distinguished using specialised DNA markers. These markers, developed as part of a comprehensive study of global cattle breeds form the basis of the ZebuCheck™ test.

Why use ZebuCheck™

Growing consumer concern over how and where food is produced has driven demand for greater transparency in the production chain. In parallel, the globalisation of food sourcing is complicating efforts to provide accurate information on product origins. Beef from large exporting countries such as Brazil, Australia, Argentina and Botswana is frequently sold without reference to its source, making it difficult to determine how such beef was produced.

The ZebuCheck™ test takes advantage of the fact that cattle populations of many non-European countries contain zebu genes as a result of crossbreeding.

ZebuCheck™ represents a rapid and convenient means verifying whether beef has a non-European origin and meets Country of Origin Labelling requirements

Numerous research studies have shown that beef from cattle with even moderate levels (~25%) of zebu genetics has ***poorer eating quality*** (tenderness) and ***less product consistency*** than beef from European breeds. This has prompted many meat importers to include clauses in contract specifications limiting the amount of zebu genetics permissible in their beef. However, cattle, particularly in the warmer regions can contain appreciable levels of zebu genetics without a visible hump. This makes controlling for zebu genes particularly difficult.

ZebuCheck™ represents a rapid and simple means of ensuring compliance with contract specifications

The ZebuCheck™ Test

- Highly specific and sensitive diagnostic for zebu genes
- Operates across a broad range of product types:
 - Fresh and frozen beef
 - Cooked meats and meat preparations
- No prior information on product origin is required