

**DISTRELL.COM**

# FISH FRESHNESS METER



**SUITABLE FOR USE ON MOST FISH SPECIES,  
CAUGHT AND PROCESSED AROUND THE WORLD**

**TORRYMETER**

**THE QUICK AND EASY WAY TO  
MEASURE THE FRESHNESS OF  
FISH**

*DISTELL'S FISH FRESHNESS METER ENABLES THE OPERATOR TO ASSESS THE QUALITY AND FRESHNESS OF WET FISH SIMPLY AND EASILY. THE HAND-HELD INSTRUMENT IS SIMPLY PLACED IN CONTACT WITH THE FISH, A BUTTON IS PRESSED, AND THE FRESHNESS LEVEL OF THE FISH IS DISPLAYED ON THE LCD DISPLAY.*

*THERE ARE ORGANOLEPTIC CHARTS AVAILABLE FOR A LARGE SELECTION OF FISH CAUGHT AND PROCESSED AROUND THE WORLD. YOU CAN CREATE YOUR OWN ORGANOLEPTIC CHART FOR OTHER SPECIES OF FISH CAUGHT AND PROCESSED WORLD WIDE, AND PROGRAMME THE METER WITH YOUR OWN DATA.*



*EXHAUSTIVE RESEARCH HAS CULMINATED IN THIS NON-DESTRUCTIVE, AND NON-INVASIVE INSTRUMENT, AS AN ACCURATE AND RAPID METHOD OF OVERCOMING THE PROBLEMS OF EVALUATING THE RELATIVE FRESHNESS OF WET FISH.*

*NEW MICROPROCESSOR... USER MENU... COMPRISING... MEASUREMENT MODE WITH FLEXIBLE MEASUREMENT ROUTINES. EASY PRODUCT / CALIBRATION SELECTION. ENHANCED DATA DOWNLOAD, REAL TIME DATA MODE & RESEARCH MODE.*

#### **BACKGROUND**

*THE FRESHNESS METER WAS DEVELOPED TO SATISFY A REQUIREMENT FOR AN OBJECTIVE METHOD OF EVALUATING THE 'QUALITY' OF WET FISH, AND TO PROVIDE AN ESTIMATION OF THE 'RELATIVE' FRESHNESS OF FISH LANDED AT PORTS FOR THE RETAIL SALES AND PROCESSING INDUSTRIES TO JUDGE THE REMAINING SHELF LIFE OF A PARTICULAR SHIPMENT OF FISH.*

*IT IS WELL KNOWN THAT THE RATE OF SPOILAGE OF WET FISH VARIES FROM SPECIES TO SPECIES. VARIOUS FACTORS SUCH AS FAT CONTENT, HANDLING, STORAGE, BIOLOGICAL FACTORS AND SEASON OF THE YEAR CAN SIGNIFICANTLY AFFECT THE RATE OF SPOILAGE.*

*SUBJECTIVE METHODS BASED UPON SENSORY EVALUATION ARE SLOW AND DIFFICULT TO STANDARDISE IN THE FIELD.*

#### **PRINCIPLE OF OPERATION**

*THE FRESHNESS METER MEASURES CONDUCTANCE, CAPACITANCE AND Q-FACTOR OF THE FLESH AND MUSCLE STRUCTURE. AS THE FISH SPOILS, AND AS BACTERIOLOGICAL ACTIVITY INCREASES, THERE IS A REDISTRIBUTION OF INTRA-CELLULAR AND EXTRA-CELLULAR ELECTROLYTES. THIS REDISTRIBUTION CHANGES THE CAPACITANCE AND RESISTANCE OF THE FLESH AND MUSCLE STRUCTURE. THESE CHANGES IN VALUE ALLOW US TO CALIBRATE THE FRESHNESS METER'S RESPONSE. THEREAFTER IT IS A SIMPLE MATTER TO PREPARE AN ORGANOLEPTIC CHART, WHICH ALLOWS THE OPERATOR AN OBJECTIVE, CONSISTENT BASIS ON WHICH TO JUDGE THE FRESHNESS OF THE FISH UNDER TEST.*

*RESEARCH AND DEVELOPMENT OF THE INSTRUMENT WERE FIRST CONDUCTED BY MAFF'S TORRY RESEARCH STATION, ABERDEEN, SCOTLAND...USING A LARGE QUANTITY OF FISH OF DIFFERENT SPECIES. SINCE THEN MANY RESEARCH PROJECTS USING THE FRESHNESS METER HAVE BEEN CARRIED OUT AROUND THE WORLD. TECHNICAL PAPERS ON THE METER, AND RELATED TOPICS, HAVE BEEN PUBLISHED. THE FRESHNESS METER IS MANUFACTURED IN THE UK BY DISTELL.COM.*

#### **TECHNICAL SPECIFICATION**

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|--|---|
| <b>SENSOR</b>                          | ACETAL PLASTIC HOUSING, CARBON OUTER ELECTRODES, STEEL INNER ELECTRODES |
| <b>POWER SOURCE</b>                    | 6-PACK "AAA" NIMH BATTERY PACK, RECHARGEABLE, OUTPUT 7.2V DC            |
| <b>OPERATING PERIOD</b>                | 8 HOURS CONTINUOUS USE (FROM FULL CHARGE)                               |
| <b>SIZE</b>                            | 160MM X 80MM X 25MM   |
| <b>MATERIALS</b>                       | ABS PLASTIC, ACETAL PLASTIC SENSOR HOUSING, STEEL & CARBON ELECTRODES   |
| <b>WEIGHT OF METER UNIT</b>            | 250 GRAMMES   |
| <b>DISPLAY</b>                         | LCD, 2 LINES X 16 CHARACTERS  |
| <b>CARRY CASE &amp; CHARGER CRADLE</b> |   |
| <b>SIZE OF CARRY CASE</b>              | 300MM X 250MM X 150MM   |
| <b>WEIGHT</b>                          | 23.25 KGS INCL CHARGER, DATACOMMS CABLE, CD'S & DOCUMENTATION)          |
| <b>CHARGER</b>                         |   |
| <b>INPUT VOLTAGE</b>                   | 110-250V AC, 50-60HZ.   |
| <b>OUTPUT VOLTAGE</b>                  | 12V DC, 300 MA  |

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