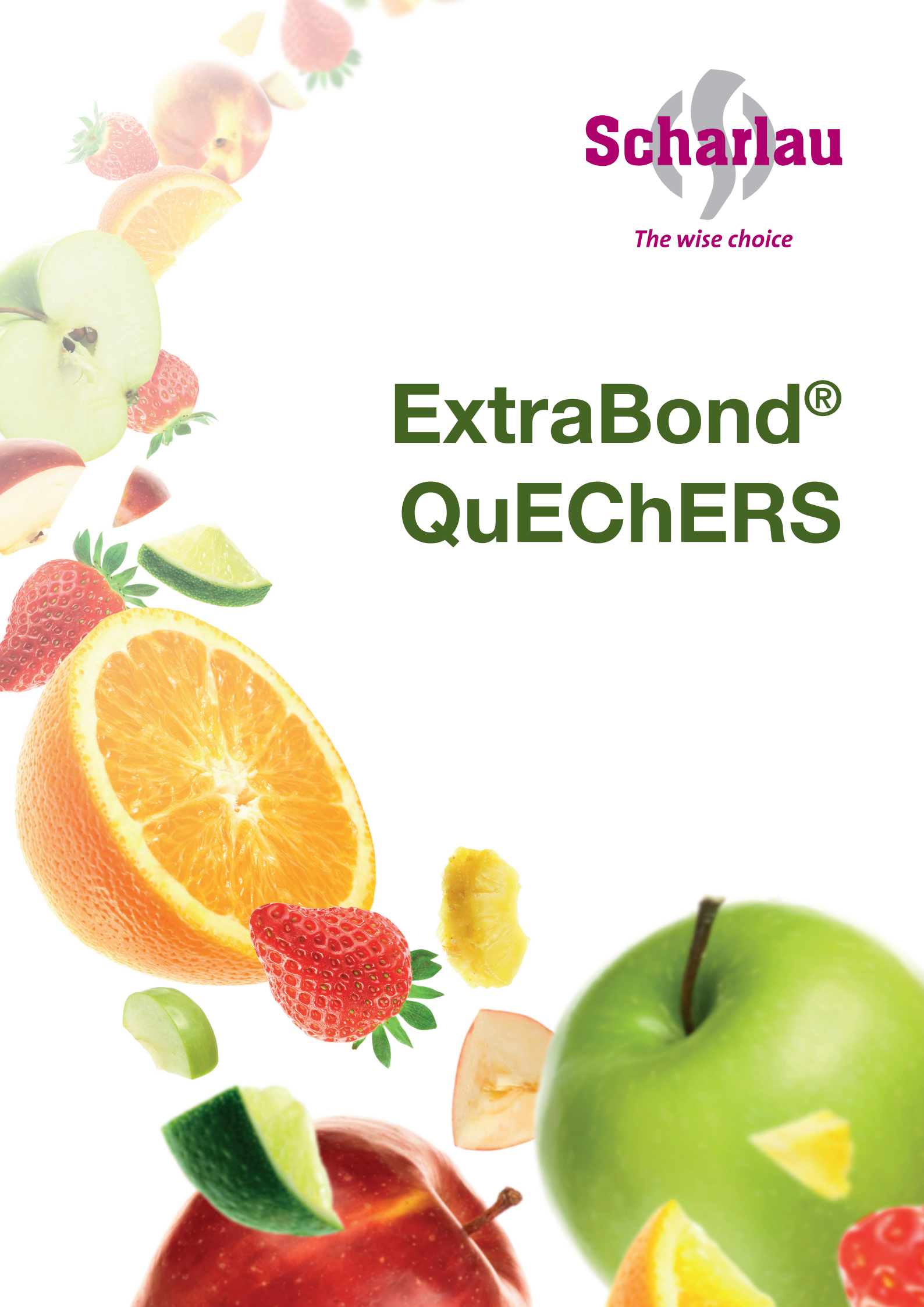




# ExtraBond® QuEChERS



**QuEChERS** is a multi-residue extraction method for fruits and vegetables that combines two stages.

- **Extraction stage:** the sample is extracted using Acetonitrile and various salts.
- **Dispersive Solid Phase Extraction (SPE) stage:** the *clean-up* of an aliquot of the extract from the first stage is carried out. For this *clean-up* stage PSA (SPE sorbent) and Magnesium Sulphate are used.

Since the launch of QuEChERS in 2003<sup>1</sup> many variants of this method have been developed and employed according to the matrix and the pesticide residues to be determined. This method is approved by the European and American Food Regulatory Agencies<sup>2</sup>.

Despite being originally developed for the extraction of pesticides in fruits and vegetables, today QuEChERS is also being used to extract many compounds from a wide variety of matrices including milk, meat, fish, kidney, honey, wine and soils.

<sup>1</sup>Fast and Easy Multiresidue Method Employing Acetonitrile Extraction/Partitioning and "Dispersive SPE" for the Determination of Pesticide Residues in Produce M. Anastassiades, S.J. Lehotay, D. Štajnbaher, F.J. Schenck, J. AOAC Int., 86 (2) 412-431, 2003.

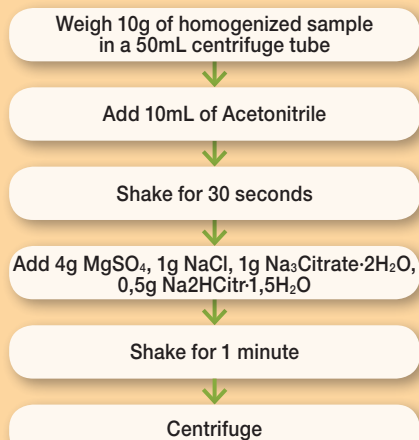
<sup>2</sup>EU Document No. SANCO/10476/2003, 5th February 2004 and method prEN 15662: 2007.

**Qu (Quick)**  
**E (Easy)**  
**Ch (cheap)**  
**E (Effective)**  
**R (Rugged)**  
**S (Safe)**

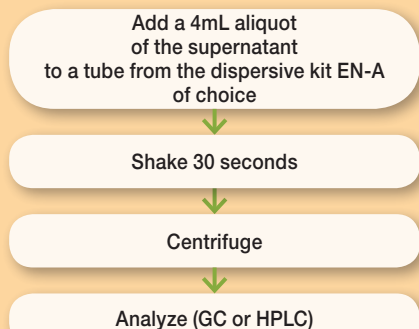
Scharlab offers extraction and dispersive kits according to European (EN 15662) and American (AOAC 2007.01) methods, as well as a variant of the European method, EN-A. The use of Scharlab variant EN-A, which contains a smaller amount of salts mixture, allows using the suitable quantity of aliquot and salts to optimize the analysis.

### Variant EN-A

#### Extraction stage

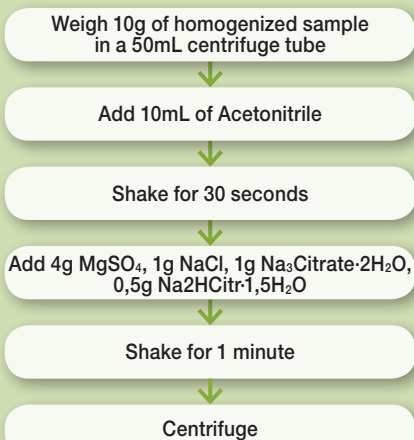


#### Dispersive stage

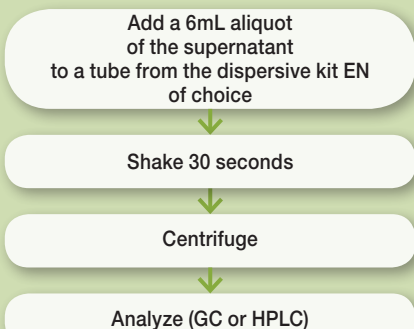


### EN 15662

#### Extraction stage

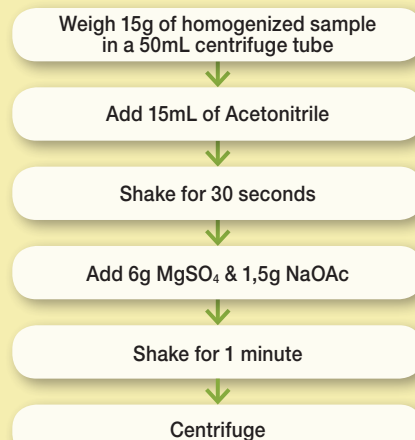


#### Dispersive stage

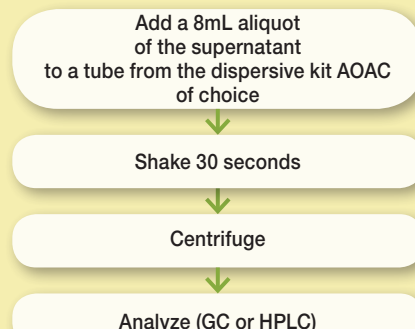


### AOAC 2007.01

#### Extraction stage



#### Dispersive stage



| Matrix                     | Extraction Kits                |                    |                        |                           | QUDISENAK2<br>EN-A. General fruits<br>and vegetables | QUDISENNK2<br>EN. General fruits<br>and vegetables | QUDISAONK2<br>AOAC. General fruits<br>and vegetables | QUDISENCK2<br>EN-A. Fruits and vegetab<br>with fats and waxes |
|----------------------------|--------------------------------|--------------------|------------------------|---------------------------|------------------------------------------------------|----------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|
|                            | QUEXTENAK1<br>QUEXTENBK1<br>EN | QUEXTAOAK1<br>AOAC | QUEXTORAK1<br>Original | QUEXTCRAK1<br>Acrylamides |                                                      |                                                    |                                                      |                                                               |
| Fruits                     |                                |                    |                        |                           |                                                      |                                                    |                                                      |                                                               |
| Apple                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Apricot                    | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Avocado                    | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Banana                     | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Blackberry                 | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Blueberry                  | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Cherry                     | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Fig                        | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Grapefruit                 | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Green grapes               | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Kiwi                       | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Lemon                      | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Lime                       | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Mango                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    |                                                    | ✓                                                    |                                                               |
| Melon                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Nectarine                  | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Olives                     | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Orange                     | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Papaya                     | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Peach                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Pear                       | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Pineapple                  | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Plum                       | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Raspberry                  | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Red grapes                 | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Strawberry                 | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Watermelon                 | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Vegetables                 |                                |                    |                        |                           |                                                      |                                                    |                                                      |                                                               |
| Artichokes                 | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Asparagus                  | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Aubergine                  | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Beans                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Beans, fresh               | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Beets                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Broccoli                   | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Brussels sprout            | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Cabbage                    | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Carrot                     | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Cauliflower                | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Celery                     | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Cilantro                   | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Cress                      | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Cucumber                   | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Endive                     | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Garlic                     | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    | ✓                                                             |
| Green pepper               | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Leek                       | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Lettuce                    | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Onion                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Parsley                    | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Peas                       | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Potato                     | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Pumpkin                    | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Radish                     | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Red pepper                 | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Spinach                    | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Tomatoe                    | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Zucchini                   | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Honey and dried fruits     |                                |                    |                        |                           |                                                      |                                                    |                                                      |                                                               |
| Honey                      | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Raisins                    | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Dried apricot/plum         | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Fruit jam                  | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Tree Nuts and oil seeds    |                                |                    |                        |                           |                                                      |                                                    |                                                      |                                                               |
| Walnut                     | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Hazelnut                   | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Chestnut                   | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Sunflower                  | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Soybean                    | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Peanut/and Paste           | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Cereals grain and products |                                |                    |                        |                           |                                                      |                                                    |                                                      |                                                               |
| Wheat                      | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Rye                        | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Barley                     | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Maize                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Rice                       | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Wholemeal bread            | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Breakfast cereals          | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      | ✓                                                             |
| Pasta                      | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Dry legumes and pulses     |                                |                    |                        |                           |                                                      |                                                    |                                                      |                                                               |
| Field bean                 | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Lentils                    | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |
| Others                     |                                |                    |                        |                           |                                                      |                                                    |                                                      |                                                               |
| Olive Oil                  | ✓                              | ✓                  | ✓                      | ✓                         |                                                      |                                                    |                                                      | ✓                                                             |
| Seeds Oil                  | ✓                              | ✓                  | ✓                      | ✓                         |                                                      |                                                    |                                                      | ✓                                                             |
| French Fries               |                                |                    |                        | ✓                         |                                                      | ✓                                                  | ✓                                                    |                                                               |
| Cocoa beans                | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Coffee                     | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Spices                     | ✓                              | ✓                  | ✓                      |                           |                                                      |                                                    |                                                      |                                                               |
| Hops                       | ✓                              | ✓                  | ✓                      |                           | ✓                                                    | ✓                                                  | ✓                                                    |                                                               |

| Dispersive Kits                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Matrix                            |
|----------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------|-----------------------------------|
| QUDISENFK2<br>EN. Fruits and vegetables<br>with fats and waxes | QUDISAOFK2<br>AOAC. Fruits and vegetables<br>with fats and waxes | QUDISENPK2<br>EN. Pigmented fruits<br>and vegetables | QUDISAOPK2<br>AOAC. Pigmented fruits<br>and vegetables | QUDISENPK2<br>EN. Highly pigmented<br>fruits and vegetables | QUDISAOPK2<br>AOAC. Pigmented fruits<br>and vegetables | QUDISAOPK2<br>AOAC. Pigmented fruits<br>and vegetables with fats |                                   |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | <b>Fruits</b>                     |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Apple                             |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Apricot                           |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Avocado                           |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Banana                            |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Blackberry                        |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Blueberry                         |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Cherry                            |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        | ✓                                                                | Fig                               |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Grapefruit                        |
|                                                                |                                                                  | ✓                                                    | ✓                                                      |                                                             |                                                        |                                                                  | Green grapes                      |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        | ✓                                                                | Kiwi                              |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Lemon                             |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Lime                              |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Mango                             |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Melon                             |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Nectarine                         |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Olives                            |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Orange                            |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        | ✓                                                                | Papaya                            |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Peach                             |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Pear                              |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Pineapple                         |
|                                                                |                                                                  | ✓                                                    | ✓                                                      |                                                             |                                                        |                                                                  | Plum                              |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Raspberry                         |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Red grapes                        |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Strawberry                        |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Watermelon                        |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | <b>Vegetables</b>                 |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Artichokes                        |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Asparagus                         |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Aubergine                         |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Beans                             |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Beans, fresh                      |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Beets                             |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Broccoli                          |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Brussels sprout                   |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Cabbage                           |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Carrot                            |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Cauliflower                       |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Celery                            |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Cilantro                          |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Cress                             |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Cucumber                          |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Endive                            |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Garlic                            |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Green pepper                      |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Leek                              |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Lettuce                           |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Onion                             |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Parsley                           |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Peas                              |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Potato                            |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Pumpkin                           |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Radish                            |
|                                                                |                                                                  | ✓                                                    | ✓                                                      |                                                             |                                                        |                                                                  | Red pepper                        |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Spinach                           |
|                                                                |                                                                  | ✓                                                    | ✓                                                      |                                                             |                                                        |                                                                  | Tomatoe                           |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Zucchini                          |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | <b>Honey and dried fruits</b>     |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Honey                             |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Raisins                           |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Dried apricot/plum                |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Fruit jam                         |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | <b>Tree Nuts and oil seeds</b>    |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Walnut                            |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Hazelnut                          |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Chestnut                          |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Sunflower                         |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Soybean                           |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Peanut/and Paste                  |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | <b>Cereals grain and products</b> |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Wheat                             |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Rye                               |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Barley                            |
|                                                                |                                                                  | ✓                                                    | ✓                                                      |                                                             |                                                        |                                                                  | Maize                             |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Rice                              |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Wholemeal bread                   |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Breakfast cereals                 |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Pasta                             |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | <b>Dry legumes and pulses</b>     |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | Field bean                        |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Lentils                           |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | <b>Others</b>                     |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        |                                                                  | Olive Oil                         |
| ✓                                                              | ✓                                                                |                                                      |                                                        |                                                             |                                                        | ✓                                                                | Seeds Oil                         |
|                                                                |                                                                  |                                                      |                                                        |                                                             |                                                        |                                                                  | French Fries                      |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Cocoa beans                       |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           | ✓                                                      |                                                                  | Coffee                            |
|                                                                |                                                                  | ✓                                                    | ✓                                                      | ✓                                                           |                                                        |                                                                  | Spices                            |
|                                                                |                                                                  | ✓                                                    | ✓                                                      |                                                             |                                                        |                                                                  | Hops                              |



Sample



Extraction Kit



Dispersive Kit



Analysis



## Extraction kits

For the extraction stage, Scharlau employs mainly **sachets for maximum convenience** and ease-of-use, although tubes are also available. The content of the sachet is easily poured into a 50ml tube at the appropriate time, after adding the acetonitrile to the sample. In this way the **possible exothermic reaction is avoided** and greater recoveries obtained.



| Art. No.         | Description                                                                                                                     | Packaging | Units | Method       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------|-------|--------------|
| <b>QEXTENAK1</b> | ExtraBond® QuEChERS Extraction kit EN<br>1g sodium citrate, 0,5g sodium hydrogencitrate ses.,<br>4g MgSO <sub>4</sub> , 1g NaCl | Sachets   | 50/pk | EN 15662     |
| <b>QEXTENBK1</b> | ExtraBond® QuEChERS Extraction kit EN<br>1g sodium citrate, 0,5g sodium hydrogencitrate ses.,<br>4g MgSO <sub>4</sub> , 1g NaCl | Tubes     | 50/pk | EN 15662     |
| <b>QEXTAOAK1</b> | ExtraBond® QuEChERS Extraction kit AOAC<br>6g MgSO <sub>4</sub> , 1,5g sodium acetate                                           | Sachets   | 50/pk | AOAC 2007.01 |
| <b>QEXTCRAK1</b> | ExtraBond® QuEChERS Extraction kit for acrylamides<br>4g MgSO <sub>4</sub> , 0,5g NaCl                                          | Sachets   | 50/pk | –            |
| <b>QEXTORAK1</b> | ExtraBond® QuEChERS Extraction kit Original 10g<br>4g MgSO <sub>4</sub> , 1g NaCl                                               | Sachets   | 50/pk | Original 10  |

## Dispersive kits

For the solid-phase dispersion stage, all tubes from ExtraBond® QuEChERS kits have the **product code and batch number imprinted** on them for maximum traceability. When working with Scharlau's variant EN-A, use kit QUDISENAK2 for general analysis and switch to kit QUDISENCK2 in case of fatty/waxy fruits and vegetables such as avocado, almonds and olives.



### General fruits and vegetables

| Art. No.          | Description                                                                                                      | Packaging  | Units | Method         |
|-------------------|------------------------------------------------------------------------------------------------------------------|------------|-------|----------------|
| <b>QUDISENAK2</b> | ExtraBond® QuEChERS Dispersive kit EN-A for general fruits and vegetables<br>100mg PSA, 600mg MgSO <sub>4</sub>  | 15mL tubes | 50/pk | Variation EN-A |
| <b>QUDISENNK2</b> | ExtraBond® QuEChERS Dispersive kit EN for general fruits and vegetables<br>150mg PSA, 900mg MgSO <sub>4</sub>    | 15mL tubes | 50/pk | EN 15662       |
| <b>QUDISAONK2</b> | ExtraBond® QuEChERS Dispersive Kit AOAC for general fruits and vegetables<br>400mg PSA, 1200mg MgSO <sub>4</sub> | 15mL tubes | 50/pk | AOAC 2007.01   |

### Fruits and vegetables with fats and waxes

| Art. No.          | Description                                                                                                                              | Packaging  | Units | Method         |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|----------------|
| <b>QUDISENCK2</b> | ExtraBond® QuEChERS Dispersive kit EN-A for fruits and vegetables with fats and waxes<br>100mg PSA, 600mg MgSO <sub>4</sub> , 100mg C18  | 15mL tubes | 50/pk | Variation EN-A |
| <b>QUDISENFK2</b> | ExtraBond® QuEChERS Dispersive kit EN for fruits and vegetables with fats and waxes<br>150mg PSA, 900mg MgSO <sub>4</sub> , 150mg C18    | 15mL tubes | 50/pk | EN 15662       |
| <b>QUDISAOFK2</b> | ExtraBond® QuEChERS Dispersive kit AOAC for fruits and vegetables with fats and waxes<br>400mg PSA, 1200mg MgSO <sub>4</sub> , 400mg C18 | 15mL tubes | 50/pk | AOAC 2007.01   |

### Pigmented fruits and vegetables

| Art. No.          | Description                                                                                                                    | Packaging  | Units | Method       |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------|------------|-------|--------------|
| <b>QUDISENPK2</b> | ExtraBond® QuEChERS Dispersive kit EN for pigmented fruits and vegetables<br>150mg PSA, 885mg MgSO <sub>4</sub> , 15mg GCB     | 15mL tubes | 50/pk | EN 15662     |
| <b>QUDISAOPK2</b> | ExtraBond® QuEChERS Dispersive kit AOAC for pigmented fruits and vegetables<br>400mg PSA, 1200mg MgSO <sub>4</sub> , 400mg GCB | 15mL tubes | 50/pk | AOAC 2007.01 |

### Highly pigmented fruits and vegetables

| Art. No.          | Description                                                                                                                       | Packaging  | Units | Method   |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------|-------|----------|
| <b>QUDISENHK2</b> | ExtraBond® QuEChERS Dispersive kit EN for highly pigmented fruits and vegetables<br>150mg PSA, 855mg MgSO <sub>4</sub> , 45mg GCB | 15mL tubes | 50/pk | EN 15662 |

### Pigmented fruits and vegetables with fats

| Art. No.          | Description                                                                                                                                         | Packaging  | Units | Method       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|--------------|
| <b>QUDISAQXK2</b> | ExtraBond® QuEChERS Dispersive kit AOAC for pigmented fruits and vegetables with fats<br>400mg PSA, 1200mg MgSO <sub>4</sub> , 400mg C18, 400mg GCB | 15mL tubes | 50/pk | AOAC 2007.01 |



### Quality

Our company has an integrated management system according to ISO 9001: 2008 and ISO 14001: 2004.

A copy of the certificate is available on our website.

### More information available online

You can access our online catalogue and get copies of CoA, TDS and MSDS whenever you need.

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