

## NEW PUBLICATION RELEASED AT ARC-AE

*The Agro-Processing division of ARC-AE released a new publication titled "Processing of Oil Seeds" on 23 February 2021 by Author: Theresa Siebert.*

### What the publication is about:

South African farmers facing current economic realities are searching for new options of surviving and expanding their business. One of the many opportunities to grow markets, turnover and profits is by adding value to farm produce through processing. Food processing takes place of various scales: small-scale processing usually takes place in the household kitchen whereas larger scale food processing is done in factories and bakeries. However, regardless of the scale of food processing being undertaken, the basic processes remain unchanged. These processes are known as unit operation and are carried out in sequence.



The Processing of Oil Seeds focusses a variety of oilseed crops and contains information on a wide range of processing options for soya bean, canola, sunflower, peanuts, and cotton and includes:

- **Soy protein concentrate:** Defatted soy meal consists of 30 – 35 % carbohydrates. By removing the soluble carbohydrate fraction along with some flavour components, the protein concentration of the soy meal is increased. There are three different methods that can be used to concentrate soy meal:
  - acid leaching method (pH 4.5)
  - aqueous ethanol method (60 – 80 %)
  - moist heat – water leaching method
- **Sunflower oil fat spread or margarine** is a water-in-fat emulsion which closely resembles butter and is firm in refrigerator and melts rapidly in the mouth. It is made from a non-dairy fat and water mixture. The fat phase contains oil-soluble ingredients, e.g. Mono- and diglycerides, lecithin (optional), colouring matter and vitamins. The aqueous phase (16-18%) contains water with or without added edible protein. This "milk" may be prepared by adding dried protein to water and is then pasteurised, except for pastry and kosher margarine where just water is added.
- **Sunflower oil - Medium Scale:** The medium scale oil processor can process 300kg to 1 ton of sunflower seed per hour. Sunflower seeds yield between 40 - 60 % oil of which 65 to 80 % may be extracted using medium scale oil presses or expellers. The oil is usually cold-pressed and yields high quality oil for frying, salad or shortening purposes. The oil generally retains anti-oxidants better compared to large scale produced oil. This is important from a health and shelf life perspective.
- **Peanut flour or grits:** Peanut flour may be used as a protein supplement in milk-beverages and bread and biscuits. Peanut proteins have also been incorporated in ground-beef products such as hamburgers, sausages and meatloaf.
- **Peanut oil:** The Spanish peanut variety has a higher oil content than the other varieties of peanuts. Peanut oil is produced for use in cooking due to its mild flavour and the fact that it burns at a relatively high temperature.

Inquiries: Theresa Siebert ([siebertt@arc.agric.za](mailto:siebertt@arc.agric.za)) or to purchase the manual: Elmarie Stoltz ([stoltze@arc.agric.za](mailto:stoltze@arc.agric.za))