What should be taken into account when buying or making new equipment?

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1. Functionality

- Primary aspects when buying new equipment are efficiency, labour-savings and having sufficient capacity
- A functional working environment gives producer more time and energy to maintain and evolve Good Hygiene Practices (GHP) and Good Manufacturing Practices (GMP)
- Price vs. quality? Is the cheapest always the most economical solution?

2. Suitability for Food Production

- Hazard: Transfer constituents to food in quantities which could endanger human health
- To avoid this, producer should aquire a declaration of compliance when purchasing materials, machines and utensils
- Food contact surfaces should be made from foodgrade materials such as stainless steel or approved plastics
    - Traditional materials like wood, plant material, stone, copper, brass or cloths must be suitable for food use and be granted by means of flexibility provisions (exemptions or adaptations), for food with traditional characteristics

- Producers can make the equipment themselves, but requirements for materials are the same
- Equipment must be durable, easily dismantled (disassembled?) and, when necessary, disinfected

3. Placement into Premises

- Large equipment should be installed so that their surroundings and the floor underneath them are easily cleaned.
- A suggested distance from the nearest wall is 0,8-1,0 metres.
- Tools and utensils must not be stored on the floor

4. Cleanability

- Equipment must be
  - easy to clean
  - cleaned when necessary
- Chemicals should not corrode the surface to which they are applied. Follow the cleaning instructions to avoid damaging the equipment. Corroded surfaces are good hiding places for harmful microbes.
- Equipment constructed from stainless steel or food-safe plastic has the highest resistance to cleaning products and disinfectants
- Cookware aluminium and aluminium alloy do not tolerate alkaline chemicals. Aluminium and stainless steel do not tolerate hypochlorite.
- Avoid using cracked, scratched or pitted equipment as it is hard to clean

5. Maintenance

- Damaged food contact materials surfaces can pose a risk of physical contamination
- Breakdown of heating or cooling equipment can pose a risk of promoting microbial growth
- Critical processing equipment, such as a pasteurizer, should have maintenance instructions and a service plan
- It is recommended to keep any documentation on machines:
  - essential data about the machine (origin, age, type, etc..)
  - telephone numbers for service and for spare part dealer
- Lubricants for machines must also be of food-grade quality

6. Calibration

- Instruments which measure key process parameters identified by the producer should be calibrated

For example:

  - temperature
  - pH

7. Occupational Safety

- A machine with a built-in safety system is preferable!
- Safety systems must not be switched off or bypassed
- Machinery should have safety instructions
- Where possible, avoid sharp edges or hot surfaces on equipment
- Employees must be informed about safety risks and trained on risk avoidance
- Safety risk assessment must be performed
- All near accidents must be seriously assessed and any improvements to safety must be implemented

Additional learning materials

Hygienic design of equipment:

- EHEDG Guidelines. Available at https://www.ehedg.org/guidelines/
- Schmidt, R. H., & Erickson, D. J. (2005). Sanitary design and construction of food equipment. *University of Florida IFAS Extension*. Available at http://edis.ifas.ufl.edu/fs119

Free online modules:

- 3-A Sanitary Standards, Inc. E-learning modules. Available at http://www.3-a.org/Knowledge-Center/E-learning-Modules