| Animal Nutrition (3 UFC; 36 hours) | | | |
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| Course goals: knowledge of nutritional principles and requirements; relationship between metabolic disorders, health and animal food composition. | | | |
| **Lessons** | | | |
| Subject and achieved skills | Themes | Specific contents | Hours |
| 1. Introduction (tot. 1H ) | Nutrition & Veterinary practice | Introduction and presentation | **1** |
| 2. Nutrients (tot. 19 H) | Monogastrics, herbivores and ruminants digestive processes | Intake, chewing, digestion, utilization & excretion. Factors affecting digestibility. Anti-nutritional factors | **2** |
| | Feedstuffs classification | Forages, concentrates and by products | **2** |
| | Protein & Aminoacids | Proteins evaluations; ideal protein concept. Roles, requirements and effect of imbalances. | **3** |
| | Non Structural carbohydrates | Classification. Sugars, starch and non-starch polysaccharides roles. Roles in the control of microbial ecosystem in the gut. | **3** |
| | Structural carbohydrates | Fibrous fractions and dietary fiber; nutritional and dietetic roles. | **3** |
| | Lipids & Fatty acids | Classification. Roles, requirements and effect of imbalances. Prevention of oxidation processes | **2** |
| | Minerals | Classification. Absorption pathways for organic and inorganic sources. Roles, requirements and effect of imbalances. | **2** |
| | Vitamins | Classification. Nutritional and extra nutritional roles. Requirements and effect of imbalances. | **2** |
| 3. Rumen (tot. 12 H) | Function | Rumen ecosystem. Fermentations pathways and final products. | **2** |
| | Carbohydrates & Protein utilization | Dynamic of degradation. Passage & Degradation rates of the different feedstuffs fractions. Classification of feedstuffs fractions with CNCPS, NRC & INRA models | **4** |
| | Lipids | Interactions with rumen fermentations and milk fat content & composition | **2** |
| | Rumen fermentation abnormalities | Ruminal Acidosis, Bloat, Alcalosis: causes, predisposing factors & prevention | **4** |
| 4. Energy value and nutritional requirements (tot. 4 H) | Energy requirements and utilization. Energy evaluation systems in ruminants and monogastrics. | Maintenance, growing and production requirements: Imbalances consequences. INRA, NRC, CNCPS Models | **4** |