

SYLLABUS DEL CORSO DI ACQUACOLTURA E ALLEVAMENTO DELLE PICCOLE SPECIE

(2 CFU; 18 hs traditional teaching + 6 hs practical training)

Objectives of the Course: The course is aimed to give to the students the essential features of the aquaculture e rabbit culture, with particular attention to fish species reared in Italy. The studenti should know: the most important fish species caught or reared in Italy and Europe, the main features of the water, the most important techniques to rear fish, molluscs and crustaceans, the hatchery, the steps of the productive cycle, principles in nutrition and feeding of aquatic animals, fish welfare and seafood quality, the most important features of rabbit culture.

Traditional teaching (18 ore)

Themes and aquired competences	Items	Specific content	Ore
Theme 1: Fisheries and aquaculture production (6 hs); competences: a) trends e in seafood production; b) differences between fisheries and aquaculture; c) the importance of chemical, physical and biological parameters of aquatic environment and measuring techniques	Fisheries and aquaculture production; biological features of aquatic animals	Annual production data; morphological and biological traits of fish and shellfish	1
	Aquaculture systems	Estensive, intensive and semi intensive aquaculture, organic aquaculture	2
	Chemical, physical and biological parameters	Optimal and critical level of water parameters; the degree/day	3
Theme 2: Rearing techniques and production cycle of fish (7 hs); competences:	Intensive rearing systems	ponds, raceways, floating cages	2
		Recirculation system	2

a) farm management considering strenght or weak points of intensive farm; b) fish broodstock, larvae, fingerling, juvenile, adult managment	Productive fish cycle	Hatchery and productive cycle of trout, gilthead sea bream, European sea bass	2
	Productive cycle of bivalves	Mytilus spp cycle	1
Theme 3: Nutrition, feeding, welfare of aquatic animals and seafood quality (4 hs); competences: a) nutritional requirements of fish and feeding managment; b) diet formulation; c) the influence of nutrition and feeding on fish welfare and quality;	Macro and micro nutrients, nutritional requirements	Diet composition	1
	Diet ingredients of both animal and vegetable origin	Fish meal, soybean meal, fish oil, vegetable oils	1
	The influence of diet on fish welfare and seafood quality	Antinutritional factors, immunstimulats; fillet chemical composition; FCR, SGR, PER, GPE	2
Theme 4: Principle features of rabbit farm (1 hs); competences: a) trend in rabbit production; b) intensive rabbit farm;	rabbit producion cycle and farm managment	Production cycle	1

Esercitazioni (6 ore)

Tem e competenze acquisite	Argomenti	Contenuti specifici	Ore
Tema 1: Riconoscimento specie ittiche di interesse commerciale (1 ora); Competenze: distinzione famiglie o specie ittiche	Tratti morfologici distintivi di pesci, molluschi e crostacei	Tipologie di pesci in base a morfologia	1
		Distinzione di molluschi in cefalopodi, gasteropodi e bivalvi	
Tema 2: Valutazione qualità prodotti ittici (2 ora); Competenze: conoscenza principali indici morfometrici e loro calcolo; Competenze: capacità di distinguere stato di freschezza	Indici morfometrici di qualità; Individuazione stato di freschezza pesci	Peso, lunghezza, indice viscerosomatico, indice epatosomatico, resa in filetto; Esame colore e odore delle branchie, esame dell'occhio, esame muscolo	2
Tema 3: Valutazione qualità dell'acqua (1 ora); Competenze: capacità di utilizzare gli strumenti impiegati per le misurazioni di parametri chimici dell'acqua	Misurazione parametri chimici	Rilevazione di ossigeno disciolto in acqua, rilevazione salinità	1
Tema 4: Valutazione qualità delle acque e delle diete tramite indicatori zootecnici (2 ore); Competenze: conoscenza indicatori zootecnici e loro calcolo	Esercizi di calcolo gradi/giorno e indicatori zootecnici	Casi di applicazione gradi/giorno; presentazione risultati di prove con diete diverse, calcolo ICA, SGR, PER, GPE	2