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Nota di contenuto	Oats Nutrition and Technology; Contents; List of Contributors; Preface; Acknowledgements; Part I Introduction; 1 Introduction: Oat Nutrition, Health, and the Potential Threat of a Declining Production on Consumption; 1.1 A landmark health claim; 1.2 The growing interest in oats and health; 1.3 Declining production poses threats to the growth of oat intake; References; Part II Oat Breeding, Processing, and Product Production; 2 Breeding for Ideal Milling Oat: Challenges and Strategies; 2.1 Introduction; 2.1.1 What is an ideal milling oat? 2.2 Breeding for single traits: Genotype-by-environment interactions2. 2.1 Grain yield; 2.2.2 Test weight; 2.2.3 Kernel weight; 2.2.4 Groat percentage; 2.2.5 -glucan concentration; 2.2.6 Oil concentration; 2.2.7 Protein concentration; 2.3 Breeding for multiple traits: Undesirable trait associations; 2.3.1 Pairwise associations; 2.3.2 The three-way association; 2.4 Strategies of breeding for an ideal milling oat; 2.4.1 Step 1: Independent culling to select for promising genotypes; 2.4.2 Step 2: Index selection to identify promising genotypes; 2.5 Discussion

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3.3.4 Protein3.3.5 Fat; 3.4 Agronomic factors affecting physical and nutritional quality; 3.5 Oat end-product quality; 3.5.1 Oat flakes; 3.5.2 Steel cut groats; 3.5.3 Oat flour; 3.5.4 Oat pasta and noodles; 3.5.5 Oat bread; 3.5.6 Extruded oat products; 3.5.7 Oat bran; 3.5.8 Oat product aroma and flavor; 3.5.9 Shelf stability of oat products; 3.6 Mycotoxins; 3.7 Summary; Acknowledgements; References; Part III Oat Nutrition and Chemistry; 4 Nutritional Comparison of Oats and Other Commonly Consumed Whole Grains; 4.1 Introduction to oats as a cereal grain; 4.1.1 Global grain production
4.1.2 Oat grain structure4.2 Overview of the nutritional composition of oats; 4.2.1 Fiber; 4.2.2 Protein; 4.2.3 Lipids; 4.2.4 Vitamins; 4.2.5 Minerals; 4.3 Conclusion; References; 5 Oat Starch; 5.1 Introduction; 5.2 Native oat starch organization: From the molecular to the granular level; 5.2.1 Oat starch molecular analysis and characterization; 5.2.2 Native starch crystallinity and supramolecular organization; 5.3 Starch minor components, isolation, and extraction; 5.3.1 Oat starch minor components; 5.3.2 Oat starch extraction and isolation
5.4 Beyond native starch granule: Gelatinization, pasting, retrogradation, and interactions with other polysaccharides

Sommario/riassunto

A considerable amount of research has emerged in recent years on the science, technology and health effects of oats but, until now, no book has gathered this work together. Oats Nutrition and Technology presents a comprehensive and integrated overview of the coordinated activities of nutritionists, plant scientists, foodscientists, policy makers, and the private sector in developing oat products for optimal health. Readers will gain a good understanding of the value of best agricultural production and processing practices that are important in the oats food system. The bo