

consumer attention. A myriad number of foods and their types require flexible yet conducive packaging and packaging aids. Usage of petroleum products in packaging is of course conducive and has been in practice in the past, but it is not without the concerns of material itself that are unfriendly to the environment. The focus has now shifted to natural alternatives that would offer similar protection, and also be environmentally benign. The development of biodegradable packaging has been one of the focused themes in the area of food packaging. Biopolymers are a renewable source of food packaging. They are produced from natural sources, such as starch and polysaccharide (mainly from pectin, cellulose, alginates, carrageenan, and chitosan) [1–4].

Biopolymers have different material properties compared with usual plastics; for example, they exhibit low tensile strength. These biopolymers have some unique properties such as biodegradability, edibility, antimicrobial activity, sustainability, biocompatibility, and eco-friendly nature. In addition, the quality of the food packed is very well maintained [5–7]. Even recent trends highlight more consumer preference for biopolymers [8].

There are two major classifications of biopolymers: polylactic acid and starch-based polymers. Only these two completely biodegradable biopolymers are used in commercial market simultaneously with other nonbiodegradable polymers [8]. Nowadays, awareness about biopolymer-based food packages has increased around the world. Therefore, biopolymer food packaging technologies are gaining huge potential to guarantee the quality and safety of food materials packed in them.

Alginates are one of the efficient polysaccharides that are used as edible coating for food products. Alginate packaging is known to possess specific characteristics such as good tensile strength, flexibility, tear resistance, rigidity, mechanical resistance, tastelessness, oil resistance, glossiness, and odorlessness. However, due to their porous structure, they exhibit high permeability toward water and oxygen [9]. This chapter aims to explain about alginate packaging in terms of its characteristics and properties, and also from the customer point of view.

11.2 Biopolymer in Food Industry

Biopolymers are used as an alternative food packaging for their eco-friendly nature. Cha and Chinnan [10] have classified biopolymers in categories such as (a) polymers extracted from natural materials, like protein, cellulose, starch, and sea prokaryotes; (b) polymers chemically synthesized from biobased monomer; and (c) polymers produced by microbes, such as hydroxyl valerate and hydroxyl butyrate (Figure 11.1).