



Figure 11.1 Schematic overview of different biopolymers [15].

Edible films and coatings for food products are emerging technologies that are gaining demand in this era of utilization of nonbiodegradable food packaging [9]. They are superior in keeping the quality of both whole and fresh-cut fruit compared to nonbiodegradable polymers. Alginate is one of the commonly used bio-packaging materials reportedly used to decrease the microbial load and weight loss in carrots [11]. It has increased the shelf life of fresh-cut apples [12] and reduced browning effect during storage of fresh-cut mangoes [13]. During film formation, alginates are sometimes mixed with nanoparticles; one of these studies has exhibited favorable effect of nanoparticles on shiitake mushroom during storage [14].

11.3 Alginates in Food Packaging

Alginate is probably the most widely studied essential biopolymer in recent times and it is the preferred film-forming material also [16]. Alginate is the salt of alginic acid that is nonrepeating copolymers of β -D-mannuronic acid (M) and α -L-guluronic acid (G) linked by 1–4 glycosidic bonds. Figures 11.2 and 11.3 display block structures of M, G and alginates,