The aim of this work is to study the morphology and anatomy of the seeds of eleven species and subspecies which include A. abyssinica, A. ehrenbergiana, A. etbaica, A. etbaica ssp. uncinata, A. gerrardii, A. gerrardii var. najdensis, A. hamulosa, A. mellifera, A. nubica, A. tortilis, and A. raddiana, which were collected from the western and southwestern region of Saudi Arabia. The results of the morphological pods characters show different variation in color and shape, where the color varies between reddish-brown, yellowish-brown and brown-green; also reddish-green, yellowish-green and dark green. Pods shapes have different variation ranging from straight to slightly curved in species A. abyssinica, A. nubica, A. mellifera, A. etbaica, A. hamulosa and subspecies A. etbaica ssp. uncinata. Strongly falcate in species A. ehrenbergiana spirally contorted with construction in A. raddiana and spirally twisted in species A. tortilis.

Morphological studies of seeds show also many different characters related to the seed shape and size, central aerole, where size difference between small seeds in A. raddiana, A. tortilis, A. nubica and large seeds in A. gerrardii, A. ehrenbergiana, A. abyssinica, A. mellifera, A. etbaica, A. hamulosa and subspecies A. etbaica ssp. uncinata, A. gerrardii var. najdensis has various shapes such as round to oblong or ovoid and quadrate. Studying the characters of the central aerole shows that they are undistinguished in species A. ehrenbergiana and distinguished in all other investigated species. Also open or closed central aerole with divergent straight equal or unequal arms, an area inside the aerole and the ratio between the central aerole area and seed surface area, where the species A. abyssinica, is specified by distinguished closed central aerole and species A. gerrardii, A. hamulosa, A. mellifera, A. tortilis were distinguished by open central aerole and unequal arms. Species A. nubica, A. etbaica, A. raddiana and subspecies A. gerrardii var. najdensis, A. etbaica ssp. uncinata is specified by open central aerole and equal arms. The character related to the level of the central aerole as specified characters show species A. mellifera, A. abyssinica, have concave central aerole, species A. etbaica is flat and species A. gerrardii and subspecies A. etbaica ssp. uncinata have convex central aerole. Scanning electron microscope of seeds surface show many different ornamentation such as, regulous: reticulate tuberculate, reticulate rugose, Jagged with grooves, granulate colliculate, rought, crimped foveolate, granulose, striated papillosed, microgranulate, reticulate foveolate. Anatomical study of seed coat, of the investigated species indicate the presence of different characters such as different lengths of Malpighian cells and its structure the light line as in the 1/3 or 1/2 the Malpighian cells. In species A. ehrenbergiana, A. nubica, A. etbaica , A. hamulosa, A. abyssinica, A. raddiana the Malpighian cells size ranges between 30-60 µm and in species A. gerrardii, A. tortilis and subspecies A. etbaica ssp.uncinata, A. gerrardii var. najdensis the size is between 61-85 µm. also the inner integument specialized by one or several parenchymatous layer with thin or thick cell wall and with or without reserve food materials. Two keys conclusions are drawn, one is based on the morphological characters of seed, the second is based on the anatomical characters of the seed coat.