Estrous synchronization in cattle is facilitated by progestins, such as melengestrol acetate (MGA) or Controlled Internal Drug Release (CIDR). Long-term MGA treatment, in the absence of a corpus luteum (CL), results in the formation of persistent follicles (PF) that negatively affect pregnancy rates. However, it is unclear if long-term CIDR treatment results in PF formation characterized by increased length of follicular wave, increased dominant follicle diameter (FD), and increased circulating estradiol. The objectives were to determine if a new or used CIDR induced the formation of PF, in the absence of a CL, and to determine if differences exist in serum progesterone and estradiol concentrations of heifers or cows treated with a new or used CIDR. Serum progesterone concentrations for animals in the two CIDR groups were similar (P > 0.1) throughout the 14 day trial but lower in Control animals. Lengths of follicular waves were longer (P < 0.05) and circulating estradiol was higher (P < 0.05) in CIDR-treated groups compared to the Control group. For heifers, FD was greater (P < 0.05) in the Used CIDR group compared to Control group; whereas, in cows, FD was similar in the CIDR groups and greater (P< 0.05) than the Control group. Serum estradiol concentrations were elevated (P < 0.05) on most days in the progestin-treated cows compared to the Control cows. In summary, CIDR treatment (new or used) induced formation of a PF in heifers or cows and there was no difference between the CIDR groups in serum concentrations of progesterone.