Abstract

Following surveys and data collection from cultivation and postharvest handling of new breeding rose flowers at Tung Rao Royal Project Development Center, hydrangeas at Kae Noi Royal Project Development Center, gerberas at Inthanon Royal Agricultural Station, alstroemerias at Mae Tho Royal Project Development Center and gloriosa at Nong Khieo Royal Project Development Center. It was found that cultivation and postharvest handling process, starting from soil preparation, planting, cultivation, harvesting, postharvest handling as well as modes of transport to market channels are all different for each individual type of flower.

Surveys of postharvest losses as well as the vase life before and after improving postharvest handling of these five cut flowers including new breeding roses, hydrangeas, gerbera, alstroemeria and gloriosa were conducted. The surveys started on farms through the arrival of the plants at the Chiang Mai Royal Project shop. With the improved postharvest handling, individual type of these flowers incurred decreasing losses, while extending their vase life. Before the postharvest handling improvement, the Prince Dream (Jitra), Prince of Love (Dara), Coral Beauty and Magenta pink rose had the vase life of 6.73, 6.73, 7.53 and 7.40 days, respectively. With the improved process and by placing flower stems in a solution of citric acid with pH of 3 during transport, the vase life was extended to 11.67, 8.93, 10.80 and 9.80 days, respectively. Putting these flowers' stems in the solution of $AgNO_3$ 150 mg/liter + 8-HQS 400 mg/liter + Citric acid 30 mg/liter + Sucrose 10 % extended the vase life of these rose flowers to 14.33, 9.93, 10.93 and 11.60 days, respectively. The improved postharvest handling and transport of hydrangeas by putting flowers' stems in plastic tubes containing sodium hypochlorite 100 mg/liter from farm followed by placing them in a vase with the same chemical at the arrival at Chiang Mai Royal Project shop could maintain the vase life of white hydrangeas for 8 days, which was not different from its vase life of 7.22 days when putting these flowers' stems in the 8-HQS 200 mg/liter + Sucrose 1 % from farm and holding them in a vase with same mixture. The vase life of the flower was slightly shortened to 6.56 days when they were in 8-HQS 200 mg/liter + Sucrose 1 % from farm followed by the sodium hypochlorite 100 mg/liter in vase. While before the improvement of postharvest handling hydrangea had vase life of only 3.89 days. The blue hydrangeas' vase life is at 8.56 days with the developed process by putting them in the sodium hypochlorite from farm and holding in the same solution which is similar to its vase life when using 8-HQS 200 mg/liter + Sucrose 1 % both on farm and vase solution. Its vase life was slightly shorter at 7 days when placing them in the sodium hypochlorite 100 mg/liter from farm and 8-HQS 200 mg/liter + Sucrose 1 % for holding, while the vase life without the improved process was only 3.78 days. Supra (pink with gold color inside), Carambole (red with gold color inside) and Blackjack (dark red color) gerbera had a prolonged vase life of 21.05, 16.55 and 13 days, respectively with the improved postharvest handling, while its' vase life was 17.05, 12.80 and 10.00 days, respectively without the change in process. Before improving the postharvest handling process, Everest (white), Bellevue (purple), Mango (yellow) and Saffier (pink) alstroemeria had a vase life of 7.20, 3.73, 3.47 and 5.40 days, respectively. With the improved process and pulsing with the solution of 8-HQS 250 mg/liter + Sucrose 2 % + GA_3 200 mg/liter, its vase life was significantly prolonged to 12.80,

10.60, 9.13 and 10.07 days, respectively. The alstroemeria being treated with 8-HQS 250 mg/liter + Sucrose 2 % + BA 50 mg/liter had extended vase life of 9.20, 7.33, 7.67 and 9.27 days, respectively. The gloriosa in the species of Rothschildiana had its vase life of only 4 days with the normal postharvest handling process. However, with the improved technique by pulsing with the solution of 8-HQS 250 mg/liter + Sucrose 5 % and 8-HQS 250 mg/liter + Sucrose 20 %, the vase life was extended to 6.67 and 6.56 days, respectively.