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CRIS

Horticultural Crop Production for Alaska

Principal Investigator

Dr. Patricia S. Holloway

OUTCOMES

'Provider' snap beans grown on soils with heated irrigation water using a solar water heater did not differ significantly in yield from snap beans grown with unheated water (0.34 lb/ft and 0.28lb/ft, respectively). The slight differences may be due to the relatively few days of irrigation in 2011. No differences were recorded in soil temperature. 'Cube of Butter' (13 lb/ft) is a new, high yielding summer squash for Alaska market gardens, but 'Solar Flare' cannot be recommended because of poor yield (1.8 lb/ft). 'Melody', is the standard bolt resistant variety of spinach for Alaska, but it is no longer being produced. 'Early Hybrid #7' (1.22 lb.ft) was the most bolt resistant and attractive of the spinach cultivars tested. 'Renegade' (1.01 lb/ft) and 'Space' (0.87 lb/ft) had similar yields to 'Melody' but bolted earlier than the other cultivars. 'Crimson Forest' bunching onion had less than half the yield of the cultivars, 'Evergreen Bunching' and 'Parade', but it is very flavorful, and may be useful for home gardens. 'Goodman' and 'Igloo' are medium to large cauliflowers with 1.25 – 1.35 lb/plant useful for market gardens. 'Sarah Bernhardt' peony cut stems were exposed to 0 - 72hr hr of chilling (34F \pm 2F, 1C) to learn how much chilling is necessary for maximum vase life. Hours of chilling up to 12 hr did not differ significantly in the days to full bloom (4 days) and petal fall (5 days). Chilling improved vase life after 24 hr. Chilling up to 12 hours is not sufficient to extend vase life to the maximum 14 days experienced in previous studies. Growers who ship peony cut stems should hold peonies at least 24 hr to attain optimum vase life. Wild bumble bees are the most important native pollinators of *Vaccinium uliginosum*. Attempts to attract native bees and increase fruit set using blue vane traps was not successful.

IMPACT:

Alaska hosts >100 peony cut flower growers, the largest number in the United States. Roots per farm ranged from 50 roots to more than 10,000 roots. Research at AFES is directly responsible for the introduction of this new industry to Alaska. The vegetable research is designed for small market gardeners and homeowners. It provides comparative trial information that is useful in developing regional truck farms and expanding produce choices as farmers' markets. Specific trial information was requested by Denali Seed (AK), Pan American and Ball Seed Co.(IL), Goldsmith Seeds (CA) and Kieft Seeds (Holland) and American Takkii (Salinas, CA), all of whom donated seeds for the research. Four undergraduate students completed research internships in horticulture during the past year. Ms. Tina Buxbaum completed her MS research on pollination biology of *Vaccinium uliginosum*. The following were the target audiences for this project: UAF graduate and

undergraduate students in natural resources management, Alaska homeowners, commercial horticulture businesses, Alaska Peony Growers Association, Alaska Mater Gardeners Association, numerous Alaska garden clubs, agencies including: Alaska Department of Natural Resources Division of Agriculture, UAF Cooperative Extension Service, USDA Agricultural Research Service.

OUTPUTS

As a direct result of peony research, 100 commercial businesses have planted trial plots of peonies for field cut flower production. More than 100 Alaskans attended a meeting of the Alaska Peony Growers Association in Feb 2011 and August 2011 to explore the potential for field grown peonies in Alaska. Peony cut stems were exported to 12 contiguous United States, Hawaii and Japan; the first international export of cut flowers from Alaska.

PARTICIPANTS

Individuals: Dr. Patricia S. Holloway, Principal Investigator designed and initiated all research projects and contacted potential partners. Training: Ms. Tina Buxbaum completed her MS research on pollination biology of *Vaccinium uliginosum*.

Target audiences

The following were the target audiences for this project: UAF graduate and undergraduate students in natural resources management, Alaska homeowners, commercial horticulture businesses, Alaska Peony Growers Association, Alaska market gardens and seed companies and specifically Denali Seed Company, agencies including: Alaska Department of Natural Resources Division of Agriculture, UAF Cooperative Extension Service, USDA Agricultural Research Service

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