

**Plant Propagation Protocol for *Agoseris aurantiaca* (Orange Agoseris)**  
 ESRM 412 – Native Plant Production  
 Spring 2008



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| <b>TAXONOMY</b>   |  |
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| <b>Family Names</b>   |  |
| Family Scientific Name:   | Asteraceae   |
| Family Common Name:   | Aster  |
| <b>Scientific Names</b>   |  |
| Genus:  | <i>Agoseris</i> <a href="#"><i>Raf.</i></a>  |
| Species:  | <i>aurantiaca</i>  |
| Species Authority:  | (Hook.) Greene   |
| Variety:  |  |
| Sub-species:  |  |
| Cultivar:   |  |
| Authority for Variety/Sub-species:  |  |
| Common Synonym(s)<br>(include full scientific names (e.g., <i>Elymus glaucus</i> Buckley), including variety or subspecies information) | <i>Agoseris aurantiaca</i> var. <i>aurantiaca</i><br><i>Agoseris gracilens</i><br><i>Agoseris graminifolia</i><br><i>Agoseris rostrata</i><br>(California Native Plant Link Exchange)        |
| Common Name(s):   | Mountain dandelion, Orange-flower Goat-chicory   |
| Species Code (as per USDA Plants database):   | AQUA2  |
| <b>GENERAL INFORMATION</b>  |  |
| Geographical range<br>(distribution maps for North America and Washington state)  | Western North America, from Canada to California. (Kartesz, John K.) Occurs in the Intermountain and Rocky mountain regions from Washington to Montana and south to Arizona. (Jensen, Scott) |

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| Ecological distribution (ecosystems it occurs in, etc):   | Occurs in woodland gardens and on sunny edges in meadows, valleys and lowlands and woods. <b>(Hitchcock. C. L.) Common communities occurs in include:</b> Yellow Pine Forest, Red Fir Forest, Lodgepole Forest, Subalpine Forest, wetland-riparian. ( <a href="#">Calflora</a> )   |
| Climate and elevation range   | Occurs in moderate to high altitudes. <b>(Hitchcock. C. L.)</b> Can occur as high as 10,800 ft. (Jensen, Scott) Will prefer sandy well-drained soils, and can grow in nutritionally poor soil. Grows acid, neutral and alkaline soils. Does not tolerate shade. (Kartesz, John K.) |
| Local habitat and abundance; may include commonly associated species  | Occurs most often in well-drained soil, often with sagebrush or pinyon-juniper. (Jensen, Scott)  |
| Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)  | Weedy/colonizer  |
| Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)   | Subshrub, Forb/herb (Garden Guides)  |
| <b>PROPAGATION DETAILS</b>  |  |
| Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):                 |  |
| Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):   | Plants   |
| Propagation Method (Options: Seed or Vegetative):   | Seed   |
| Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.)) | Container (plug)   |
| Stock Type:   | 5.5 cu. in. root trainers.   |
| Time to Grow (from seeding  | 12 weeks   |

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| until plants are ready to be outplanted):  |   |
| Target Specifications (size or characteristics of target plants to be produced):   | A plug with roots enough to hold together during transplanting.   |
| Propagule Collection (how, when, etc):   | Seed ripens in May to June at elevations between 5,200 and 6100 ft in the Great Basin. Plants will produce 1-3 seedheads yearly. Fruits mature with the spreading of the drying pappus, which opens the head. Because the plants occur at very low densities, they require hand collection. This includes stripping the seed by placing the base of the head between fingers and closing the hand while pulling, reduces loss. Minimizing the amount of inert material included in the collection eases cleaning. Collected material can store in dry cool conditions in breathable paper bags. (Jensen, Scott) |
| Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):  | Because the large chaff must be removed by hand or screening, collections are usually small. Remaining material can be separated by rubbing between leather. The final clean can be accomplished by air column or air screen machines. (Jensen, Scott)  |
| Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):  | Seeds were planted in moist trays, wrapped in plastic and stratified in a cold room for 3 weeks. (Jensen, Scott)  |
| Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):   | Seed is planted vertically. Root trainers are filled with a mix of 2 parts sieved peat: 2 parts Vermiculite: 1 part Turface® (montmorillonite clay): 1 part #20 quartz silica sand, 1 part native soil plus fertilizer and micronutrients. This mix is then steam aerated at 140° F for on half hour. (Jensen, Scott)   |
| Establishment Phase (from seeding to germination):   | Seedlings are moved into a greenhouse in December, and then watered until they are established. Temp between 55 and 70 Fahrenheit. (Jensen, Scott)  |
| Length of Establishment Phase:   | 4-5 weeks.  |
| Active Growth Phase (from germination until plants are no longer actively growing):  | Plants can be manipulated to go dormant if nighttime temperatures are raised. (Jensen, Scott)   |
| Length of Active Growth Phase:   | Eight or more weeks.  |
| Hardening Phase (from end of active growth phase to end of growing season; primarily related to the development of cold-hardiness and preparation for winter): |   |

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| Length of Hardening Phase:  |   |
| Harvesting, Storage and Shipping (of seedlings):  |   |
| Length of Storage (of seedlings, between nursery and outplanting):  |   |
| Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering): | Plugs transplanted into holes made by planting dibble. Water plants to prevent them from senescing along with the native population. With water, will continue to flower through the summer and early fall. (Jensen, Scott) |
| Other Comments (including collection restrictions or guidelines, if available):   | The Orange Agoseris is usually not commercially available except under contract. (Garden Guides)<br>The leaves are edible and can be cooked as a spinach. The root juice has been used as a chewing gum.                    |

### INFORMATION SOURCES

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| References (full citations): | <p>Hitchcock. C. L. Vascular Plants of the Pacific Northwest. University of Washington Press 1955<br/>A standard flora for Western N. America with lots of information on habitat etc. Five large volumes, it is not for the casual reader.</p> <p>Jensen, Scott L. 2007. Propagation protocol for production of container Agoseris aurantiaca (Hook.) Greene. plants (5.5 cu. in. root trainers.); USDA FS - Rocky Mountain Research Station, Shrub Sciences Laboratory, Provo, Utah. In: Native Plant Network. URL: <a href="http://www.nativeplantnetwork.org">http://www.nativeplantnetwork.org</a> (accessed 2 June 2008). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.</p> <p>John K. Kartesz, Plants Database “Agoseris aurantiaca” Natural Resources Conservation Service. &lt;<br/><a href="http://plants.usda.gov/java/profile?symbol=AGAU2">http://plants.usda.gov/java/profile?symbol=AGAU2</a>&gt; 6/2/2008</p> <p><u>Calflora</u>: Information on California plants for education, research and conservation. [web application]. 2008. Berkeley, California: The Calflora Database [a non-profit organization]. Available: <a href="http://www.calflora.org/">http://www.calflora.org/</a>. (Accessed: Jun 02, 2008)</p> <p>Garden Guides “Orange Agoseris - Plant Information” © 1997-2008 Hillclimb Media. 6/2/2008</p> <p><u>California Native Plant Link Exchange</u> SPECIES INFORMATION “Agoseris aurantiaca”</p> |
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|   | <a href="http://www.cnplx.info/nplx/species?taxon=Agoseris+aurantiaca">http://www.cnplx.info/nplx/species?taxon=Agoseris+aurantiaca</a><br>6/2/2008<br><br>Medicinal Herbs “Herb: Mountain Dandelion”<br>< <a href="http://www.naturalmedicinalherbs.net/herbs/a/agoseris-aurantiaca=mountain-dandelion.php">http://www.naturalmedicinalherbs.net/herbs/a/agoseris-aurantiaca=mountain-dandelion.php</a> > |
| Other Sources Consulted (but that contained no pertinent information) (full citations): |  |
| Protocol Author (First and last name):  | Kayti Rodgers  |
| Date Protocol Created or Updated (MM/DD/YY):  | 6/2/2008   |

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