DESIGNING W/ GRASSES: SLIDESHOW NAMES TONY SPENCER

Google search botanical plant names or visit Missouri Botanical Garden site for more info:

1. Pennisetum alopecuroides + Sanguisorba + Molinia arundinacea 'Transparent'
2. Pennisetum alopecuroides + Aster + Molinia arundinacea 'Transparent'
3. Calamagrostis x. acutiflora 'Karl Foerster' + Panicum 'Shenandoah'
4. Helianthus pauciflorus – *Photo Credit: Chris Helzer*
5. Nassella tenuissima + Echinacea simulata + Monarda bradburiana
6. Hordeum jubatum + Astilbe
7. Deschampsia cespitosa + Helenium autumnale
8. Calamagrostis brachytricha + Miscanthus sinensis + Cimicifuga atropurpurea
9. Sporobolus heterlolepis + Echinacea pallida
10. Panicum virgatum + Echinacea pallida + Monarda + Veronica
11. Molinia arundinacea 'Transparent + Sanguisorba officinalis
12. Bouteloua gracilis
13. Calamagrostis brachytricha + Helenium autumnale
14. Peucedanum verticillare
15. Anemone 'Honorine Jobert' 2016 Perennial Plant of the Year
16. Miscanthus sinsensis
17. Calamagrostis brachytricha
18. Molinia caerulea + Calamagrostis 'Karl Foerster'
19. Calamagrostis 'Karl Foerster' + Lythrum alatum + Parthenium integrafolium
20. Panicum virgatum 'Shenandoah'
21. Bouteloua gracilis + Echinacea 'Kim's Knee High' + Salvia nemorosa
22. Baptisia alba
23. Calamagrostis 'Karl Foerster' in Hummelo meadow planting
24. Panicum amarum 'Dewey Blue' + Helenium autumnale
25. Deschampsia cespitosa
26. Echinacea purpurea seedheads
27. Calamagrostis brachytricha + Calamagrostis 'Karl Foerster' + Echinacea + Veronicastrum + Eupatorium maculatum
28. Nassella tenuissima + Echinacea simulata
29. Stipa gigantea + Nassella tenuissima + Calamagrostis 'Karl Foerster'
30. Hakonechloa macra + Tulipa 'Flaming Spring Green'
31. Deschampsia cespitosa 'Goldtau'+ Peucedanum verticillare
32. Deschampsia cespitosa + Veratrum californicum
33. Miscanthus sinensis + Chasmanthium latifolium
34. Bouteloua gracilis
35. Miscanthus sinensis 'Malepartus'
36. Miscanthus sinensis 'Flammenmeer'
37. Miscanthus 'Herman Mussel'
38. Andropogon gerardii 'Red October'
39. Sorghastrum nutans 'Sioux Blue'
40. Panicum 'Heavy Metal'
41. Panicum 'Shenandoah'
42. Panicum 'Rehbraun'
43. Pennisetum alopecuroides ' Cassian
44. Pennisetum viridescens
45. Schizachyrium scoparius ' Standing Ovation'

46. Sporobolus heterolepis
47. Festuca mairei
48. Molinia 'Moorhexe'
49. Molinia 'Poul Petersen'
50. Achnatherum calamagrostis
51. Stipa gigantea
52. Calamagrostis brachytrica
53. Eragrostis spectabilis
54. Muhlenbergia capillaris
55. Sesleria autumnalis
56. Bouteloua gracilis
57. Nassella tenuissima
58. Imperata cylindrica
59. Deschampsia cespitosa 'Goldtau'
60. Elymus hystrix
61. Hakonechloa macra
62. Carex filifolia
63. Carex sprengelii
64. Carex stipata
65. Carex grayii
66. Carex retrorsa
67. Carex plantaginea
68. Carex muskingumensis
69. Carex pensylvanica
70. Carex pensylvanica + Fritillaria meleagris
71. Carex pensylvanica + Athyrium + Astrantia + Epimedium + Phlox Divaricata
72. Carex pensylvanica + Nectaroscordum lilicum + Hakonechloa macra
73. Sesleria autumnalis + Calamagrostis brachytrica + Miscanthus 'Flammenmeer' + Hakonechloa macra
74. Luzula sylvatica + Adiantum pedantum + Heuchera
75. Allium 'Summer Beauty' and Echinacea purpurea
76. Sesleria autumnalis + Salvia nemorosa 'Caradonna'
77. Sesleria autumnalis + Salvia 'Caradonna' + Calamagrostis 'Karl Foerster' + Perovskia
78. Sesleria caerulea + Pennisetum alopecuroides `Hameln`+ Echinacea + Euphorbia segueriana ssp. Niciciana
79. Eragrostis spectabilis + Sesleria autumnalis + Sporobolus + Molinia
80. Panicum 'Shenandoah' + Perovskia 'Little Spire'
81. Deschampsia cespitosa meadow matrix
82. Nasella tennuissima + Echinacea pallida + Eryngium + Helenium + Salvia
83. Nasella tennuissima + Calamagrostis acutiflora 'Overdam' + Salvia 'Caradonna'
84. Calamagrostis brachytricha + Sporobolus + Solidago speciosa
85. Stipa gigantea + Achnatherum calamagrostis
86. Calamagrostis 'Karl Foerster' + Miscanthus + Solidago + Sangisorba + Actaea 'Queen of Sheba'
87. Sporobolus heterolepis + Panicum 'Rehbraun' + Echinacea + Baptisia + infinity

DESIGNING W/ GRASSES: NEW PERENNIAL COMBINATIONS

Source: *designing with plants* – Oudolf, Kingsbury, Timber Press 1999
Note: See book for the full appendix

Calamagrostis x acutiflora 'Karl Foerster'
Cultivation: Full sun. Tolerates dry or wet soil
Combinations: Echinacea, Eupatorium, Lavatera, Lobelia, Monarda, Persicaria, Phlomis, Phlox, Rudbeckia Sanguisorba, Verbascum, Veronicastrum, garden umbellifers

Carex muskingumensis
Cultivation: Sun or partial shade, in almost any soil
Combinations: Aster, Calamagrostis, Cimicifuga, Campanula, Geranium, Hosta, Persicaria, Rodgersia, Salvia

Hakonechloa macra
Cultivation: Sun or partial shade, preferably moist ground
Combinations: Aster, Ceratostigma, Persicaria, Scutellaria

Deschampsia cespitosa
Cultivation: Sun or partial shade, preferably moist ground
Combinations: Astrantia, Campanula, Hosta, Lobelia, Persicaria, Rodgersia

Miscanthus
Cultivation: Full sun, any soil. 3 years to establish
Combinations: Aster, Eupatorium, Helenium, Persicaria, Phlomis,Veronicastrum

Sesleria autumnalis
Cultivation: Sun + average soil
Combinations: Achillea, Astrantia, Geranium, Platycodon, Polemonium, Potentilla

Spodiopogon sibiricus
Cultivation: Sun or partial shade, moist soil although will tolerate dry
Combinations: Aster, Aconitum, Echinacea, Persicaria, Sanguisorba

Sporobulus heterolepis
Cultivation: Full sun and dry, stony soil. Can take some moisture
Combinations: Aster, Echinacea, Geranium, Helenium, Knautia, Rudbeckia, Scabiosa, Verbena

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GRASSES: DESIGN ATTRIBUTES

Here's what grasses contribute to a planting design scheme:

- Architectural **form and structure through every layer of a planting** from massive specimens, drifts of signature plants, to matrix groundcover
- Grasses enables us to evoke the **plant communities, environment, and atmosphere** for a multitude of **wild habitats:** ranging from coastal dunes, to xeriscapes, prairie, steppe, waterside and woodland edge…
- The ability to associate with and enhance other perennials as **an integral part of highly socialized plant communities** i.e. **plays well with others**
- **Reliable garden performance** if well sited. Virtually **pest-free, low-maintenance, drought tolerant** once established
- **Virtually care-free:** Cutting back for most (but not all) species at the start of the year
- **Easy to propogate:** By clonal division or by seed
- **Multi-season fascination** from initial leaf texture to flowering to seedheads – far extending the traditional perennial season
- **Design tools: Vertical and horizontal structure** to act as curtains, blinds, hedges, geometric forms, transparent screens, groundcover etc.
- Bringing **movement and sound** into the garden with each breath of wind
- **Textural dimension** in foreground, mid and background
- **Scent** in the form of Sporobolus/ Prairie Dropseed and others
- **Earthy colour palette** cycling through the season from green and blue, to yellow, tan, straw, brown
- **Performance** – positioning is key esp. backlit with low sun streaming through
- **Mediators** of colour, form and texture to contrast and complement with flowering perennials, their natural counterparts

BIOLOGY OF GRASSES 101: *(Sources: Rick Darke and Roger Grounds)*

Overview: Grasses grow far and wide in virtually every major biome of the terrestrial world – from mountaintops to seashores, forest to jungle to the Arctic. Most grasses inhabit sunny, open habitat and are relatively scarce in dense forests (except the bamboos.)

- Key things to know…true grasses, Poaceae, make up one of the largest families of flowering plants, comprising more than 600 genera and approximately 10,000 species. Only the orchid(aceae) and aster(aceae) families have more.
- Divided into five sub-families, Bamboos, Sedges, Rushes, Cat-Tails and Restios
- The staff of life for most of the world's population in the form of cereals, grains, sugar, alcohol

Ecologists attribute their success due to a simple but infinitely adaptable architecture:

- Roots make up as much as 90% of their body weight
- Fibrous, shallow, extensively branched – making them extremely efficient and drought-tolerant
- Structural strength due to the blade/sheath design of their leaves, which combine to form a single structural unit.
- If the tips are cut, grazed, or burned, the grass stems and leaves will continue to grow. While the active growing point (meristem) of most flowering plants grow is located on the tip of their stems and branches, grasses are unusual in having two meristems – one at the base of each leaf and another just above each node on the stem.
- These meristems can also grow sideways – enabling grasses to snap back after being trampled or heavy rain.

Inflorescences: Individual flowers of grasses are difficult to see with the naked eye – but they typically form into delicate complex clusters, called inflorescences – comprising hundreds or even thousands of individual flowers.

Grasses are wind pollinated plants so no need for showy flowers. They instead have panicles at the tips with floral clusters or inflorescences that take on various forms: open or closed panicle, plumes, whisk, oat-like, spike, digitate.

Growing Habit: The leaf grows directly from the roots and the positioning of the buds determines the form of the mound.

3 variations:

1. If buds occur just above the soil surface, the grass forms a tussock
2. if they occur at soil level, the grass will have a stoloniferous habit – advancing by 'stolons'.
3. if they occur below ground, the grass displays a rhizomatous or running habit.

Positioning of the buds is critical as it protects them from the teeth of browsing animals – and makes it easy for the plant to produce new shoots and increase its girth in a kind of clonal growth. This in turn makes it easy to propagate.

Grasses increase vegetatively by stolons or runners (Phragmites australis spreads by rhizomes, i.e. a stand is actually a single plant) All Carex roots are also rhizomatous.

For gardeners, grasses are generally classified as either clumping or running (cespitose or clonal), which has different implications in design

Leaf mound shapes show various forms and characteristics: tufted, mounded, upright, upright-divergent, fountain-like, arching and trailing.

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Cool-Season / Warm-Season Growers

Key distinction between grasses. Just like it sounds, cool-season grasses start into growth in late winter or early spring and start to decline with the heat of summer. Cool-season grasses can be planted, transplanted and divided at almost any time except in the heat of summer.

Examples: Calamagrostis, Deschampsia, Carex species, Festuca, Hakonechloa

Warm-season grasses grow rapidly and vigorously once the heat picks up in summer. They flower mid to late summer with the flowers quickly turning to seed and remaining showy well into the fall. They should only be transplanted or divided once they start into vigorous growth.

Examples: Schizachyrium, Bouteloua, Chasmanthium, Miscanthus, Molinia, Panicum, Pennisetum, Sporoboulus, amongst others.

DESIGNING WITH GRASSES: RESOURCES

Extremely Useful Books:

The Encyclopedia of Grasses for Livable Landscapes
Rick Darke • Timber Press

The Know Maintenance Perennial Garden
Roy Diblik • 2014, Timber Press

The Plantfinders Guide to Ornamental Grasses
Roger Grounds • 1998, Timber Press

Planting: A New Perspective
Piet Oudolf and Nöel Kingsbury (*Note: all their books are excellent*) • 2013, Timber Press

Planting in a Post-Wild World
Claudia West and Thomas Rainer • 2015, Timber Press

Perennials and their garden habitats
Richard Hansen & Friedrich Stahl • 1993, Timber Press (*Note: rare book*)

Herbaceous Perennial Plants, 3rd Edition
Allan M. Armitage *(Note: A must-have for serious perennial gardeners)*

WEB LINKS

http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/visual-guides/best-ornamental-grasses.aspx

http://www.bluestem.ca/ornamental-grass.htm

http://www.northcreeknurseries.com/plantName/Andropogon-gerardii-

https://grasstalk.wordpress.com

https://grasstalk.wordpress.com/grass-clean-up/

https://grasstalk.files.wordpress.com/2014/01/native-grass-poster.pdf

http://www.theflowerfactorynursery.com/ornamental-grass.aspx

www.thenewperennialist.com

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PLANTING RULES OF THUMB

1. When creating new perennial planting areas, work with the soil you got.

2. Match plants to habitat and local conditions.

3. Amend soil from top down with leaf litter. No double digging please.

4. Design with maintenance in mind.

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OUDOLF DESIGN ESSENTIALS: WORKING IN LAYERS

When looking to create a garden that is naturalistic meadow, prairie, woodland – Piet Oudolf has pioneered a very useful method to create layered planting designs that are relatively easy to understand on paper.

It starts by creating a plant list of species for the site: grouped by common habitat, and which fulfill his aesthetic and ecological criteria. The planting design may use different styles either alone or in combination: block planting, intermingling, matrix planting etc. It can be effective, for example, to juxtapose wilder plantings with more coherent structures or frameworks.

On paper, the complete planting design is comprised of a series of interrelated layers, which can all be visualized in a *plan* drawing – showing the garden space as viewed from above and measured to scale (i.e. 1:100m on a metrical architectural scale).

To design intermingled or blended plantings, Oudolf draws each layer on a sheet of tracing paper, overlaying one on top of the next to create the complete design. It's a way to simplify the design process with the plants represented by visual symbols:

1. The first layer is comprised of the tree and shrub layer (existing and planned)
2. The second layer is the perennial planting showing the grouping of primary plants and scatter plants
3. The third (and fourth) layer shows the matrix planting and/or filler plants

Note: The designer may prefer to start with either the matrix layer or the primary plants when designing the perennial planting.

Definitions:

- Primary Plants are structural plants that rise above the matrix alone or in groups
- Scatter plants are repeated throughout to provide visual unity and spontaneity
- Filler plants are gap plants with interest for less than 3 months

Perennial Grasses for matrix planting design:

- Carex bromoides
- Carex pensylvanica, many other potential Cares
- Deschampsia cespitosa
- Hakonechloa macra
- Luzula species for woodland
- Molinia caerulea, smaller varieties
- Schizachryium scoparium 'Standing Ovation'
- Sesleria species
- Sporobolus heterolepis

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http://www.bluestem.ca/ornamental-grass.htm

http://www.northcreeknurseries.com/plantName/Andropogon-gerardii-

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