

Applying Biosolids to Crops in the Phase 6 Model

Presentation to Biosolids Workgroup

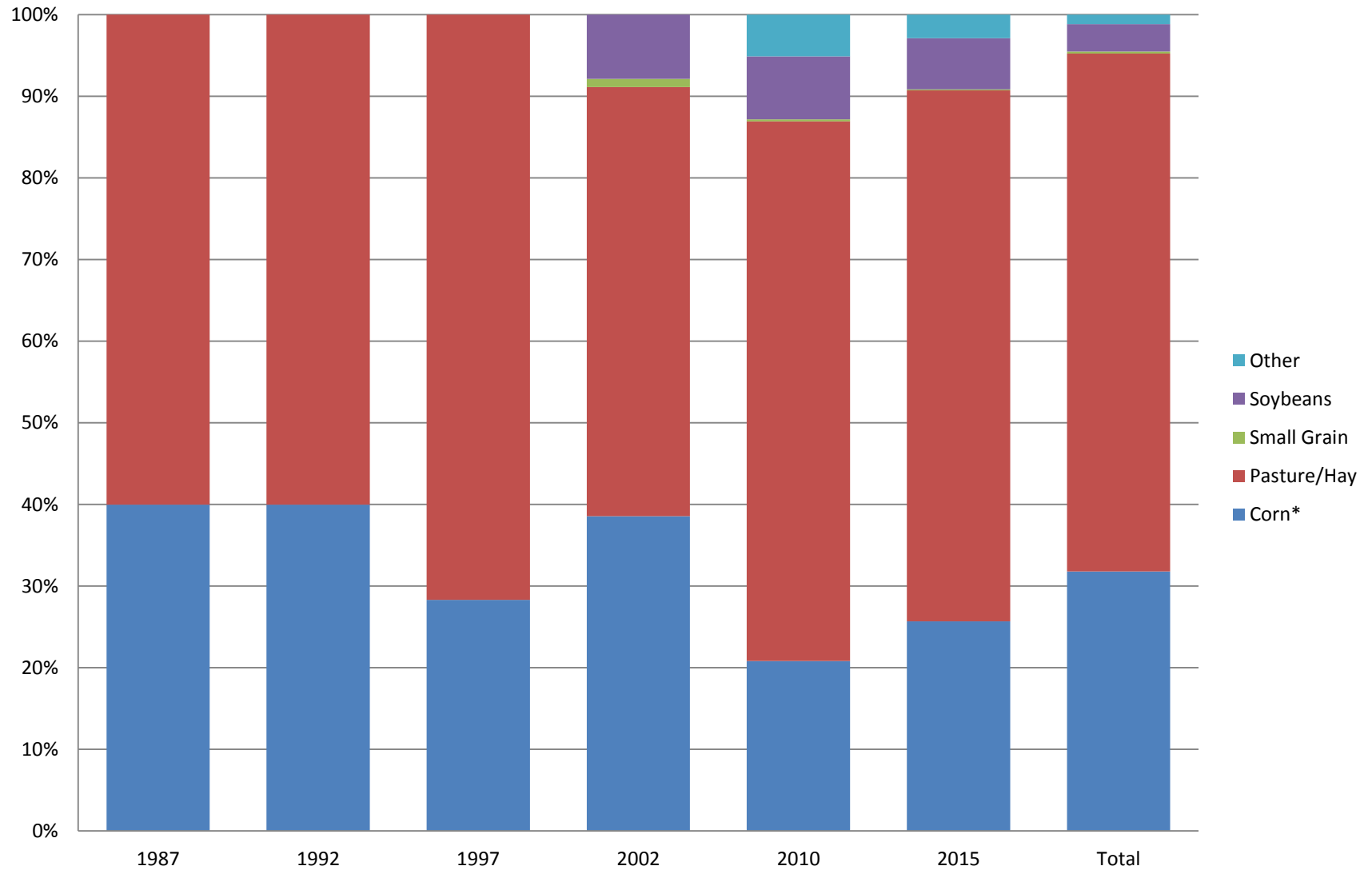
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Matt Johnston

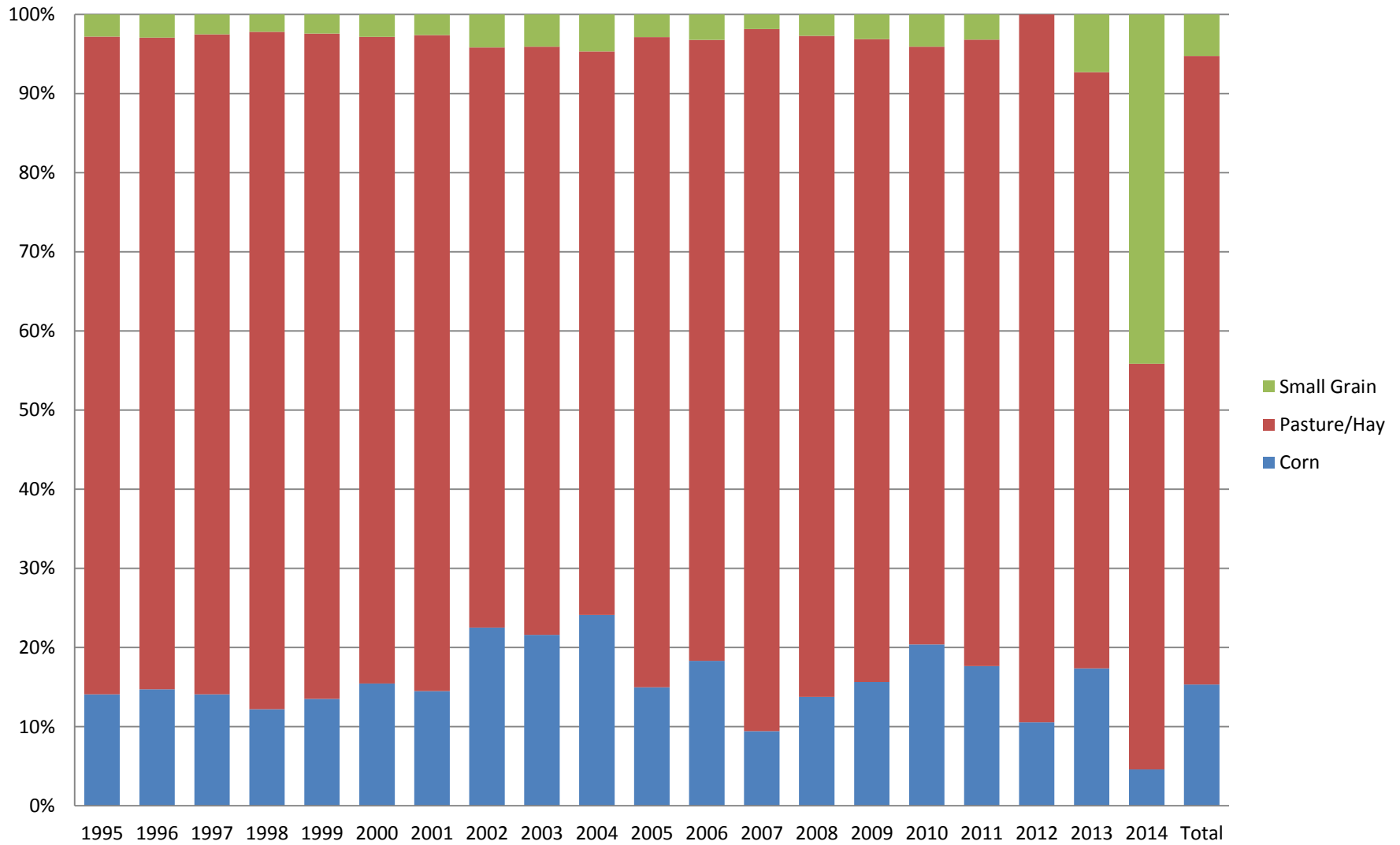
University of Maryland

CBPO Non-Point Source Data Analyst

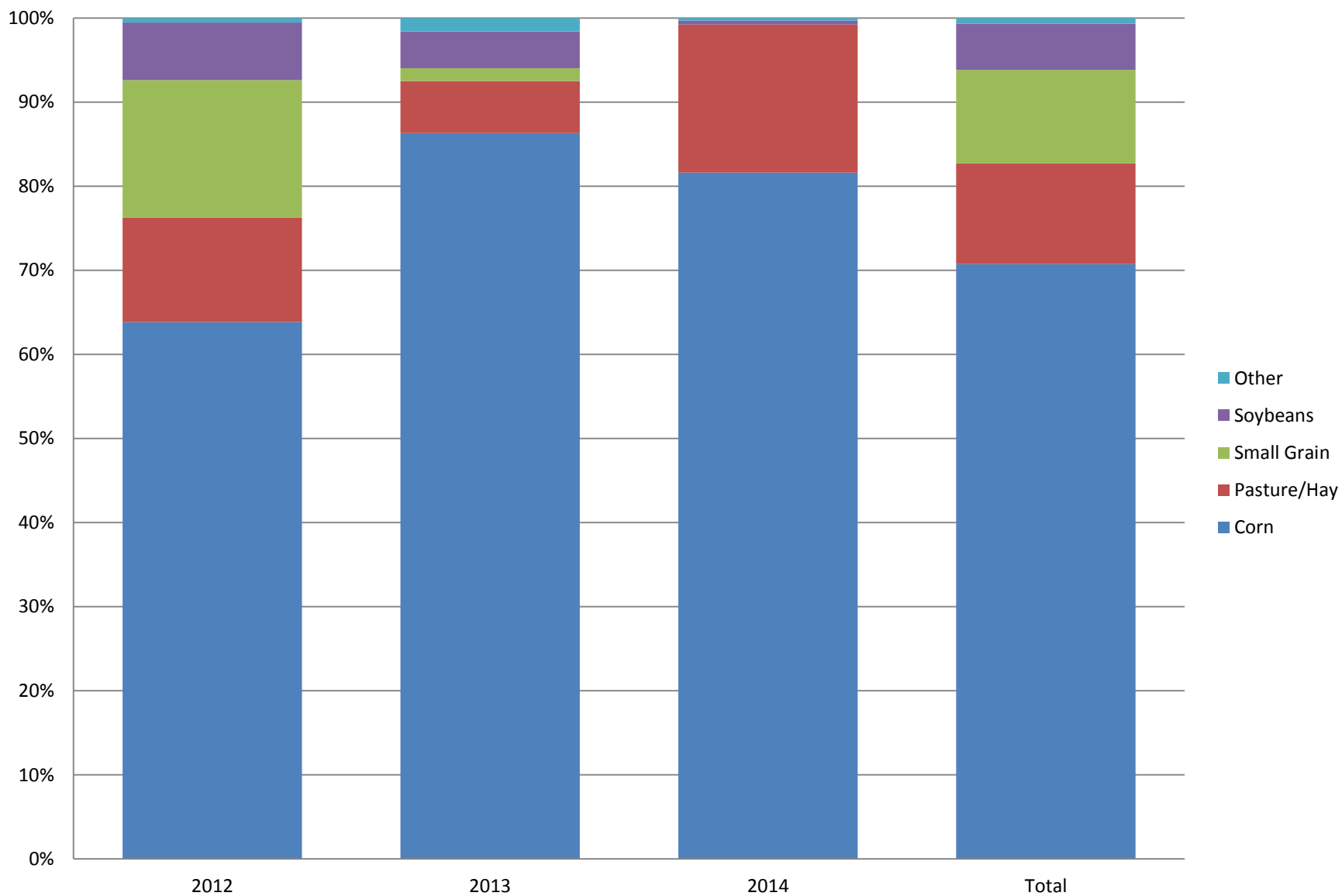
VA Biosolids



WV Biosolids

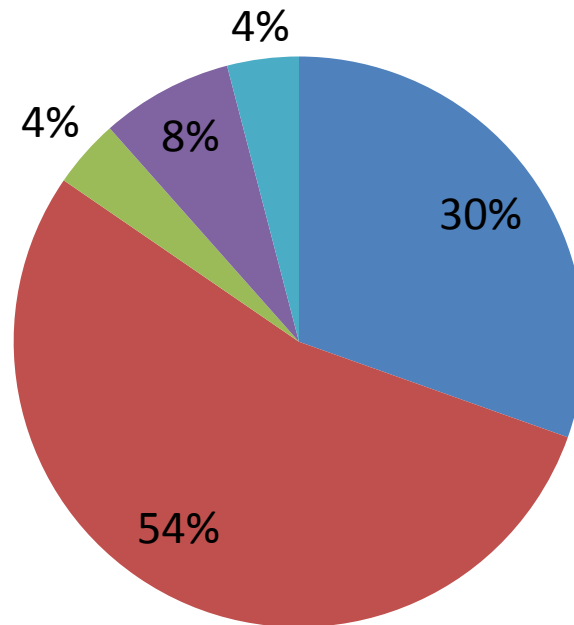


MD Biosolids



2010 Biosolids Applications Across VA, WV and MD by Crop Group Type

■ Corn ■ Pasture/Hay ■ Small Grain ■ Soybeans ■ Other



Crop	Percent	Percent/Percent Corn
Corn	30.43	1
Pasture/Hay	54.14	1.7792
Small Grain	3.89	0.1278
Soybeans	7.48	0.2458
Other	4.06	0.1334

Example Applications

(actual results may vary)

Augusta County, VA (2010) 8,370 lbs plant-available biosolids N

Crop Group	Acres	Original Crop N Goal (Lbs)	Relative Biosolids Application	Adjusted N Goal (Lbs)	Percent Adjusted Goal	Actual Application	Biosolids Lbs/Acre
corn (organic-elig.)	4,048	539,840	1.0000	539,840	0.0319	267	0.07
pasture/hay	179,241	9,150,522	1.7792	16,280,435	0.9635	8,064	0.04
small grains	4,697	450,293	0.1277	57,516	0.0034	28	0.01
soybeans	5,078	35,376	0.2458	8,697	0.0005	4	0.00
other	4,198	86,228	0.1334	11,502	0.0007	6	0.00
Total	197,263	10,262,258	NA	16,897,990	1.0000	8,370	0.04

Queen Anne's County, MD (2010) 72,580 lbs plant-available biosolids N

Crop Group	Acres	Original Crop N Goal (Lbs)	Relative Biosolids Application	Adjusted N Goal (Lbs)	Percent Adjusted Goal	Actual Application	Biosolids Lbs/Acre
corn (organic-elig.)	4,917	800,542	1.0000	800,542	0.4206	30,527.34	6.21
pasture/hay	8,473	170,009	1.7792	302,477	0.1589	11,534.48	1.36
small grains	29,864	5,362,299	0.1277	684,928	0.3599	26,118.60	0.87
soybeans	40,685	269,265	0.2458	66,197	0.0348	2,524.33	0.06
other	10,858	368,676	0.1334	49,176	0.0258	1,875.25	0.17
Total	94,797	6,970,791	NA	1,903,320	1.0000	72,580.00	0.77

Crops Currently Available for Manure

- Alfalfa Hay Harvested Area
- Alfalfa seed Harvested Area
- Aquatic plants Area
- Barley for grain Harvested Area
- Birdsfoot trefoil seed Harvested Area
- Bromegrass seed Harvested Area
- Brussels Sprouts Harvested Area
- Buckwheat Harvested Area
- Canola Harvested Area
- Cauliflower Harvested Area
- Celery Harvested Area
- Corn for Grain Harvested Area
- Corn for silage or greenchop Harvested Area
- Cotton Harvested Area
- Cropland used only for pasture or grazing Area
- Cut Christmas Trees Production Area
- Cut flowers and cut florist greens Area
- Dry edible beans, excluding limas Harvested Area
- Emmer and spelt Harvested Area
- Escarole and Endive Harvested Area
- Fescue Seed Harvested Area
- Foliage plants Area
- Green Lima Beans Harvested Area
- Haylage or greenchop from alfalfa or alfalfa mixtures Harvested Area
- Herbs, Fresh Cut Harvested Area
- Kale Harvested Area
- Land in Orchards Area
- Lettuce, All Harvested Area
- Mushrooms Area
- Mustard Greens Harvested Area
- Nursery stock Area
- Oats for grain Harvested Area
- Okra Area
- Orchardgrass seed Harvested Area
- Other field and grass seed crops Harvested Area
- Other haylage, grass silage, and greenchop Harvested Area
- Other managed hay Harvested Area
- Other nursery and greenhouse crops Area
- Parsley Harvested Area
- Pastureland and rangeland other than cropland and woodland pastured Area
- Peanuts for nuts Harvested Area
- Peas, Chinese (sugar and Snow) Harvested Area
- Peas, Green (excluding southern) Harvested Area
- Peas, Green Southern (cowpeas) – Black-eyed, Crowder, etc. Harvested Area
- Popcorn Harvested Area
- Potted flowering plants Area
- Red clover seed Harvested Area
- Rye for grain Harvested Area
- Ryegrass seed Harvested Area
- short-rotation woody crops Harvest Area
- Small grain hay Harvested Area
- Snap Beans Harvested Area
- Sod harvested Area
- Sorghum for Grain Harvested Area
- Sorghum for silage or greenchop Area
- Soybeans for beans Harvested Area
- Spinach Harvested Area
- Squash Harvested Area
- Sunflower seed, non-oil varieties Harvested Area
- Sunflower seed, oil varieties Harvested Area
- Sweet Corn Harvested Area
- Sweet potatoes Harvested Area
- Timothy seed Harvested Area
- tobacco Harvested Area
- Triticale Harvested Area
- Turfgrass
- Turnip Greens Harvested Area
- Vegetable & flower seeds Area
- Vegetables, Mixed Area
- Vetch seed Harvested Area
- Wheat for Grain Harvested Area
- Wild hay Harvested Area