

# The effects of mutualism on trait evolution - Residuals from ClimPC

## - Posterior distribution of trees

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## Contents

<b>Analyses accounting for climate</b>	<b>3</b>
<b>Methods</b>	<b>4</b>
<b>Figures and tables</b>	<b>4</b>
<b>Appendages</b>	<b>4</b>
<b>PC1 - Parameters</b>	<b>4</b>
PC1 - Parameter differences . . . . .	6
<b>PC2 - Parameters</b>	<b>8</b>
PC2 - Parameter differences . . . . .	10
<b>PC3 - Parameters</b>	<b>12</b>
PC3 - Parameter differences . . . . .	14
<b>Architecture</b>	<b>16</b>
<b>PC1 - Parameters</b>	<b>16</b>
PC1 - Parameter differences . . . . .	18
<b>PC2 - Parameters</b>	<b>20</b>
PC2 - Parameter differences . . . . .	22
<b>PC3 - Parameters</b>	<b>24</b>
PC3 - Parameter differences . . . . .	26
<b>Domatium Growth</b>	<b>28</b>
<b>PC1 - Parameters</b>	<b>28</b>
PC1 - Parameter differences . . . . .	30
<b>PC2 - Parameters</b>	<b>32</b>
PC2 - Parameter differences . . . . .	34
<b>PC3 - Parameters</b>	<b>36</b>
PC3 - Parameter differences . . . . .	38
<b>Leaf Structure</b>	<b>40</b>
<b>PC1 - Parameters</b>	<b>40</b>

PC1 - Parameter differences . . . . .	42
<b>PC2 - Parameters</b>	<b>44</b>
PC2 - Parameter differences . . . . .	46
<b>PC3 - Parameters</b>	<b>48</b>
PC3 - Parameter differences . . . . .	50
<b>Mating System</b>	<b>52</b>
<b>PC1 - Parameters</b>	<b>52</b>
PC1 - Parameter differences . . . . .	54
<b>PC2 - Parameters</b>	<b>56</b>
PC2 - Parameter differences . . . . .	58
<b>PC3 - Parameters</b>	<b>60</b>
PC3 - Parameter differences . . . . .	62
<b>Reward</b>	<b>64</b>
<b>PC1 - Parameters</b>	<b>64</b>
PC1 - Parameter differences . . . . .	66
<b>PC2 - Parameter</b>	<b>68</b>
PC2 - Parameter differences . . . . .	70
<b>PC3 - Parameters</b>	<b>72</b>
PC3 - Parameter differences . . . . .	74
<b>Strategy</b>	<b>76</b>
<b>PC1 - Parameters</b>	<b>76</b>
PC1 - Parameter differences . . . . .	78
<b>PC2 - Parameters</b>	<b>80</b>
PC2 - Parameter differences . . . . .	82
<b>PC3 - Parameters</b>	<b>84</b>
PC3 - Parameter differences . . . . .	86
<b>Warts</b>	<b>88</b>
<b>PC1 - Parameters</b>	<b>88</b>
PC1 - Parameter differences . . . . .	90
<b>PC2 - Parameters</b>	<b>92</b>
PC2 - Parameter differences . . . . .	94
<b>PC3 - Parameters</b>	<b>96</b>
PC3 - Parameter differences . . . . .	98
<b>Hole Diameter - Discrete</b>	<b>100</b>
<b>PC1 - Parameters</b>	<b>100</b>
PC1 - Parameter differences . . . . .	102

<b>PC2 - Parameters</b>	<b>104</b>
PC2 - Parameter differences . . . . .	106
<b>PC3 - Parameters</b>	<b>108</b>
PC3 - Parameter differences . . . . .	110

Submitted to Ecology Letters, Evolution or Evolution Letters – well let's see what we find!

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## Analyses accounting for climate

The results below follow the same rationale as the ones from the main document. However, in the cases below all analyses use the plant traits already accounted for climatic effects by using the residuals from the regressions between each trait and the first three Principal Components of the climatic variables obtained from BioClim (REF).

## **Methods**

```
## here() starts at /docs/Documents/hydnoants
```

## **Figures and tables**

## **Appendages**

## **PC1 - Parameters**

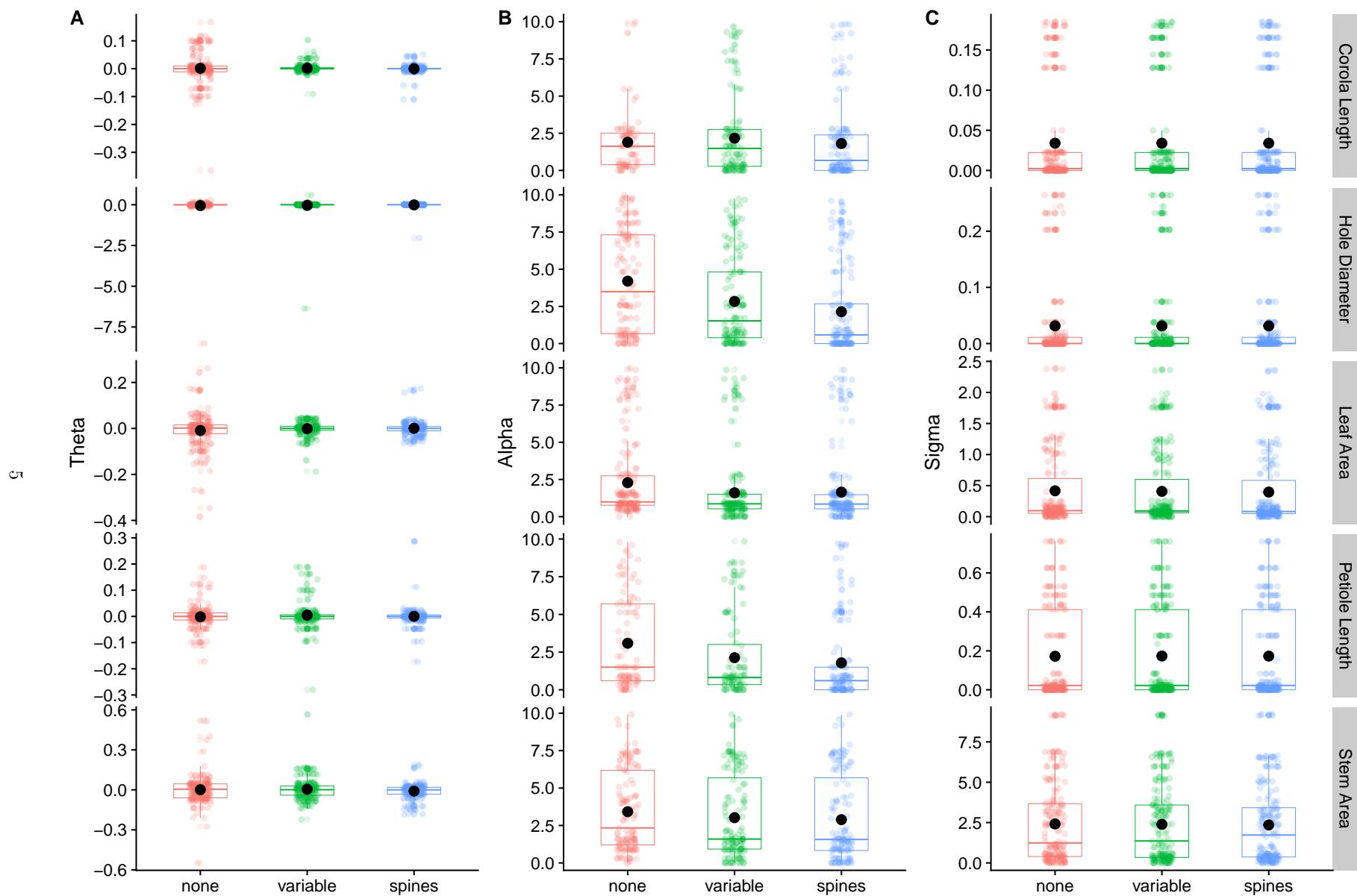


Figure 1: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Appendage.

## **PC1 - Parameter differences**

Table 1: Differences in Theta values for PC1 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	101	105	0	69	66	0	101	114	0	103	102	0	109	102
variable	90	0	81	106	0	66	97	0	103	75	0	75	86	0	94
spines	84	85	0	109	75	0	84	80	0	76	84	0	93	85	0

Table 2: Differences in Alpha values for PC1 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	69	78	0	66	88	0	117	155	0	50	82	0	81	136
variable	33	0	67	50	0	85	81	0	117	75	0	82	108	0	133
spines	24	35	0	25	32	0	43	81	0	44	44	0	53	56	0

Table 3: Differences in Sigma values for PC1 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	37	60	0	31	40	0	87	127	0	41	62	0	87	116
variable	42	0	62	31	0	42	77	0	112	46	0	75	83	0	119
spines	18	18	0	22	19	0	37	52	0	37	21	0	54	51	0

## **PC2 - Parameters**

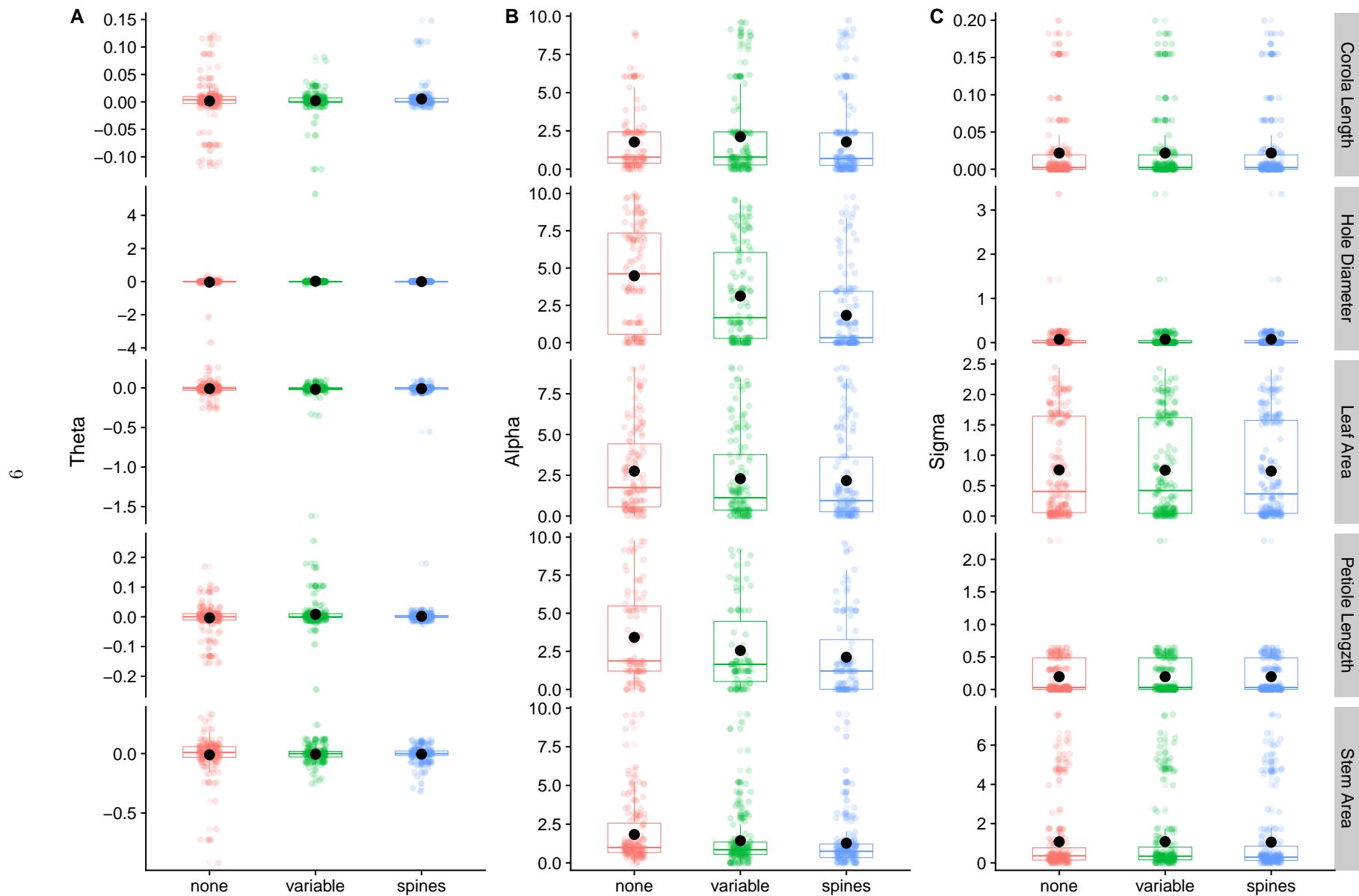


Figure 2: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Appendage.

## **PC2 - Parameter differences**

Table 4: Differences in Theta values for PC2 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	<b>89</b>	<b>92</b>	0	<b>94</b>	<b>76</b>	0	<b>98</b>	<b>98</b>	0	<b>74</b>	<b>69</b>	0	<b>92</b>	<b>112</b>
variable	<b>93</b>	0	<b>82</b>	<b>80</b>	0	<b>59</b>	<b>99</b>	0	<b>67</b>	<b>112</b>	0	<b>91</b>	<b>95</b>	0	<b>82</b>
spines	<b>90</b>	<b>79</b>	0	<b>97</b>	<b>81</b>	0	<b>99</b>	<b>114</b>	0	<b>117</b>	<b>72</b>	0	<b>75</b>	<b>85</b>	0

Table 5: Differences in Alpha values for PC2 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	<b>59</b>	<b>90</b>	0	<b>68</b>	<b>85</b>	0	<b>107</b>	<b>129</b>	0	38	<b>82</b>	0	<b>97</b>	<b>126</b>
variable	<b>52</b>	0	<b>80</b>	<b>55</b>	0	<b>90</b>	<b>83</b>	0	<b>116</b>	<b>83</b>	0	<b>89</b>	<b>90</b>	0	<b>127</b>
spines	20	31	0	33	33	0	<b>60</b>	<b>74</b>	0	34	32	0	<b>61</b>	<b>60</b>	0

Table 6: Differences in Sigma values for PC2 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	33	<b>64</b>	0	25	37	0	<b>85</b>	<b>114</b>	0	15	<b>70</b>	0	<b>68</b>	<b>97</b>
variable	45	0	<b>64</b>	36	0	41	<b>84</b>	0	<b>114</b>	<b>87</b>	0	<b>86</b>	<b>91</b>	0	<b>118</b>
spines	15	15	0	28	23	0	<b>55</b>	<b>55</b>	0	33	17	0	<b>62</b>	41	0

## **PC3 - Parameters**

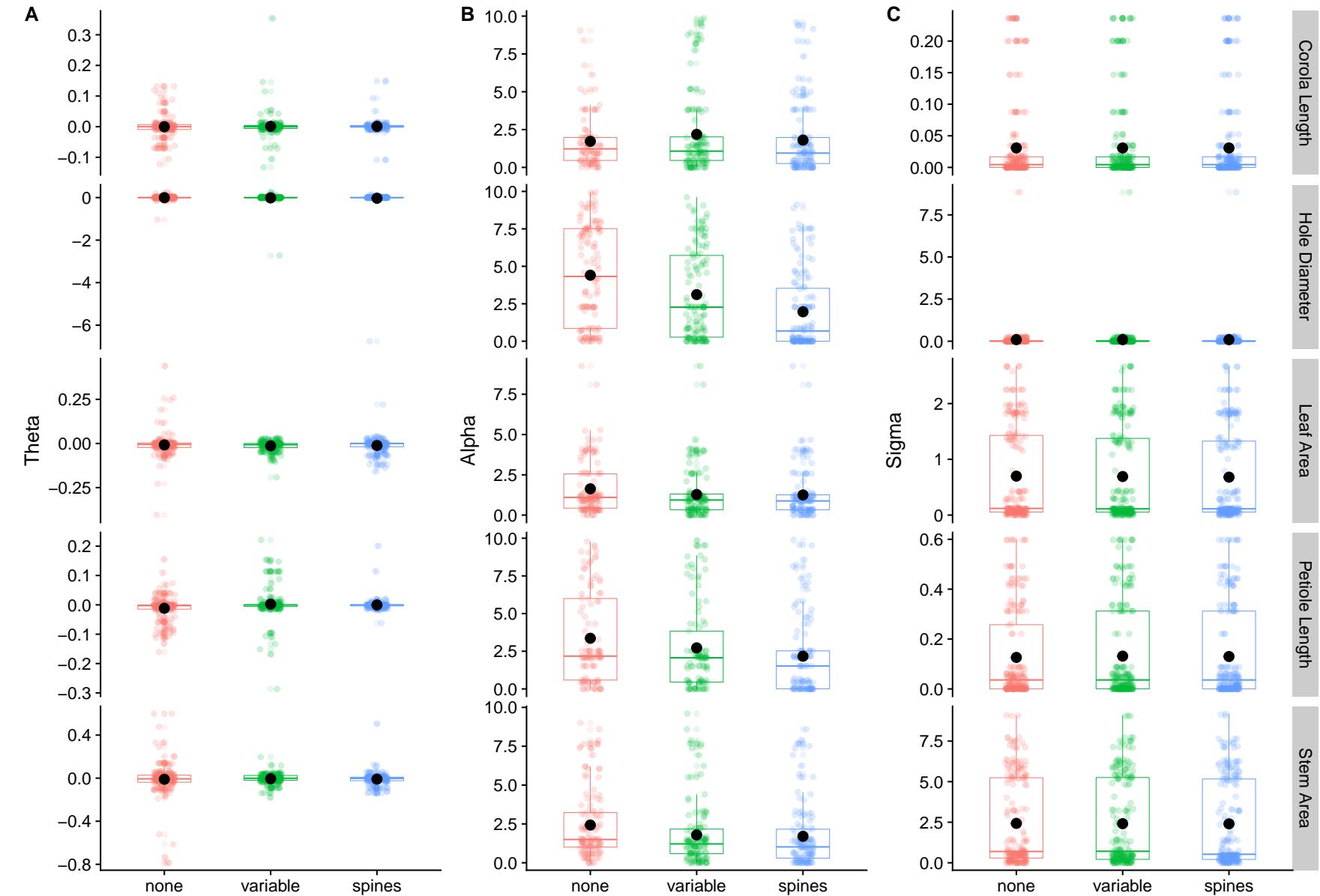


Figure 3: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Appendage.

### **PC3 - Parameter differences**

Table 7: Differences in Theta values for PC3 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	<b>97</b>	<b>82</b>	0	<b>80</b>	<b>81</b>	0	<b>94</b>	<b>98</b>	0	<b>75</b>	<b>82</b>	0	<b>85</b>	<b>82</b>
variable	<b>85</b>	0	<b>57</b>	<b>95</b>	0	<b>56</b>	<b>103</b>	0	<b>76</b>	<b>117</b>	0	<b>83</b>	<b>110</b>	0	<b>89</b>
spines	<b>100</b>	<b>110</b>	0	<b>93</b>	<b>82</b>	0	<b>99</b>	<b>110</b>	0	<b>110</b>	<b>88</b>	0	<b>113</b>	<b>90</b>	0

Table 8: Differences in Alpha values for PC3 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	<b>58</b>	<b>77</b>	0	<b>78</b>	<b>96</b>	0	<b>114</b>	<b>134</b>	0	35	<b>75</b>	0	<b>95</b>	<b>124</b>
variable	48	0	<b>75</b>	<b>52</b>	0	<b>90</b>	<b>83</b>	0	<b>132</b>	<b>75</b>	0	<b>83</b>	<b>97</b>	0	<b>123</b>
spines	17	31	0	31	39	0	<b>63</b>	<b>65</b>	0	37	29	0	<b>68</b>	<b>69</b>	0

Table 9: Differences in Sigma values for PC3 analysis of Appendages. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines	none	variable	spines
none	0	24	<b>74</b>	0	23	32	0	<b>90</b>	<b>124</b>	0	45	<b>69</b>	0	<b>64</b>	<b>104</b>
variable	<b>68</b>	0	<b>77</b>	38	0	39	<b>84</b>	0	<b>127</b>	42	0	<b>74</b>	<b>98</b>	0	<b>113</b>
spines	17	15	0	32	25	0	50	47	0	25	20	0	<b>58</b>	49	0

## **Architecture**

### **PC1 - Parameters**

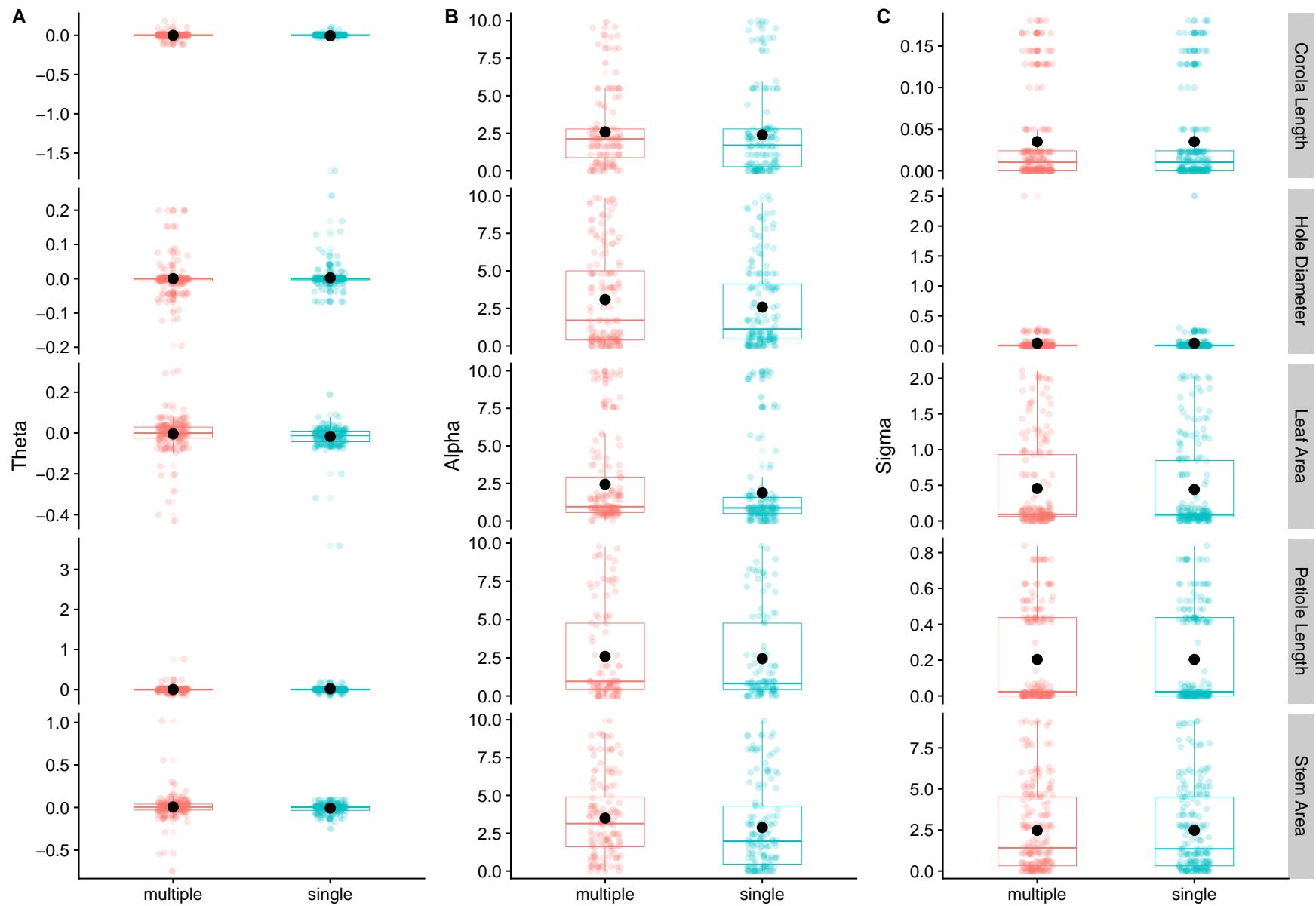


Figure 4: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Architecture.

## **PC1 - Parameter differences**

Table 10: Differences in Theta values for PC1 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	<b>88</b>	0	<b>60</b>	0	<b>109</b>	0	<b>68</b>	0	<b>109</b>
single	<b>109</b>	0	<b>125</b>	0	<b>82</b>	0	<b>109</b>	0	<b>88</b>	0

Table 11: Differences in Alpha values for PC1 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

19

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	43	0	<b>61</b>	0	<b>107</b>	0	33	0	<b>114</b>
single	<b>72</b>	0	<b>81</b>	0	<b>84</b>	0	<b>80</b>	0	<b>77</b>	0

Table 12: Differences in Sigma values for PC1 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	29	0	34	0	<b>93</b>	0	29	0	<b>84</b>
single	<b>69</b>	0	44	0	<b>70</b>	0	<b>70</b>	0	<b>81</b>	0

## PC2 - Parameters

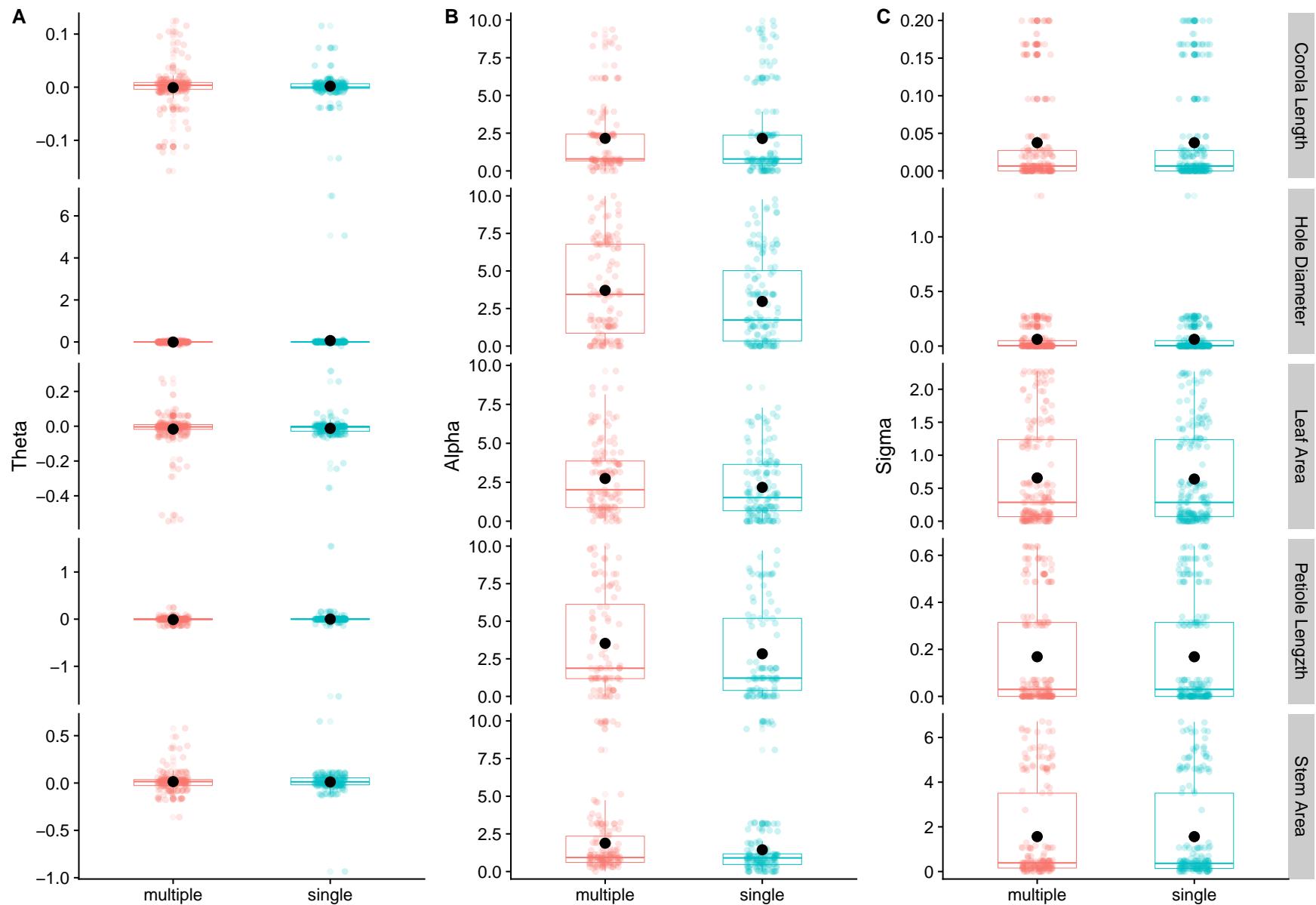


Figure 5: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Architecture.

## **PC2 - Parameter differences**

Table 13: Differences in Theta values for PC2 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	<b>83</b>	0	<b>83</b>	0	<b>105</b>	0	<b>78</b>	0	<b>92</b>
single	<b>109</b>	0	<b>101</b>	0	<b>89</b>	0	<b>105</b>	0	<b>93</b>	0

Table 14: Differences in Alpha values for PC2 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

32

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	49	0	<b>67</b>	0	<b>97</b>	0	47	0	<b>107</b>
single	<b>55</b>	0	<b>59</b>	0	<b>93</b>	0	<b>53</b>	0	<b>78</b>	0

Table 15: Differences in Sigma values for PC2 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	43	0	11	0	<b>80</b>	0	15	0	<b>83</b>
single	<b>53</b>	0	<b>69</b>	0	<b>78</b>	0	<b>79</b>	0	<b>78</b>	0

## **PC3 - Parameters**

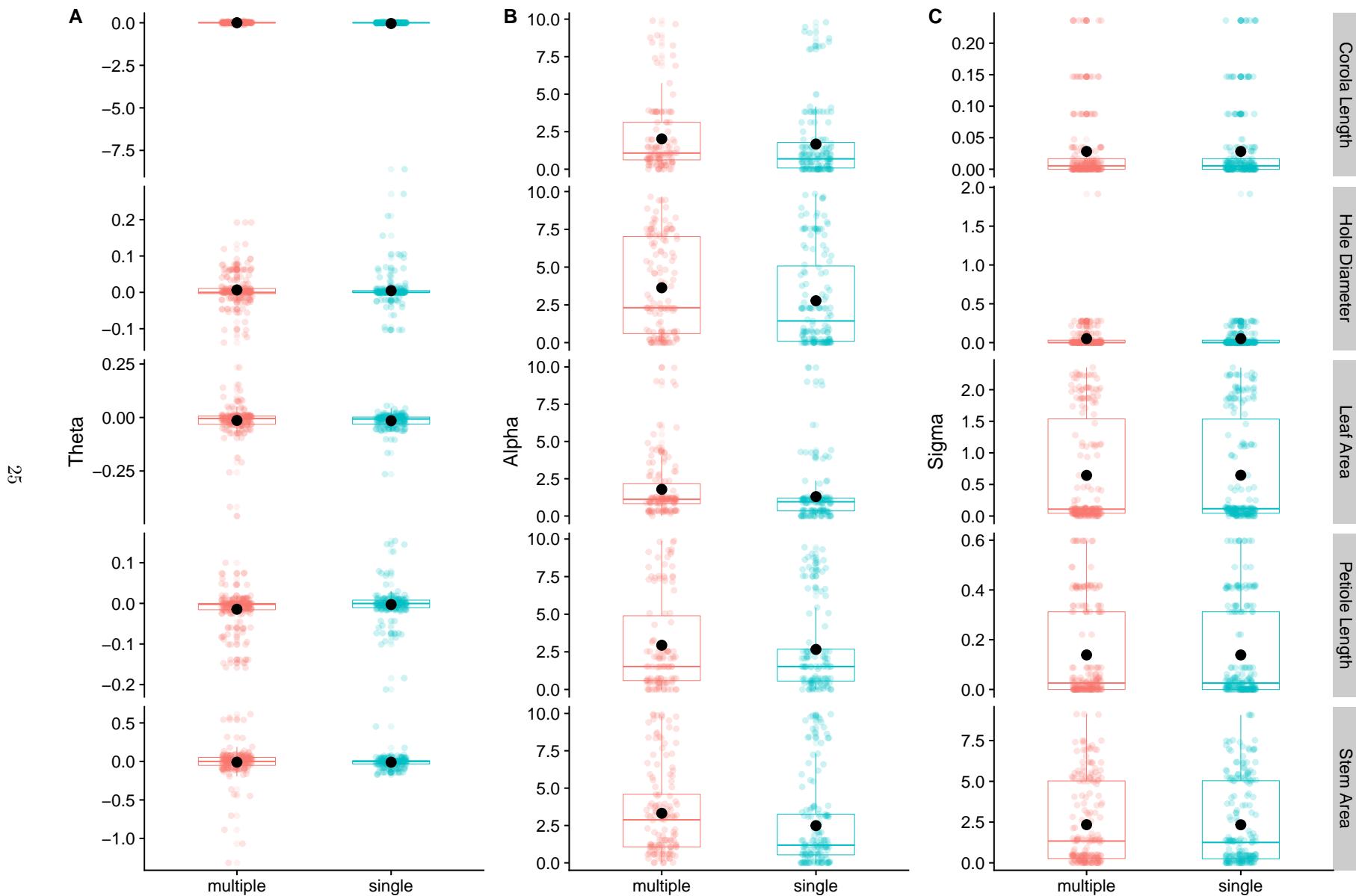


Figure 6: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Architecture.

### **PC3 - Parameter differences**

Table 16: Differences in Theta values for PC3 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	<b>96</b>	0	<b>105</b>	0	<b>86</b>	0	<b>92</b>	0	<b>115</b>
single	<b>100</b>	0	<b>89</b>	0	<b>109</b>	0	<b>103</b>	0	<b>82</b>	0

Table 17: Differences in Alpha values for PC3 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

27

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	<b>67</b>	0	<b>84</b>	0	<b>84</b>	0	40	0	<b>106</b>
single	<b>56</b>	0	<b>64</b>	0	<b>111</b>	0	<b>53</b>	0	<b>88</b>	0

Table 18: Differences in Sigma values for PC3 analysis of Architecture. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	multiple	single	multiple	single	multiple	single	multiple	single	multiple	single
multiple	0	33	0	28	0	<b>72</b>	0	45	0	<b>79</b>
single	<b>61</b>	0	32	0	<b>97</b>	0	50	0	<b>78</b>	0

## **Domatium Growth**

### **PC1 - Parameters**

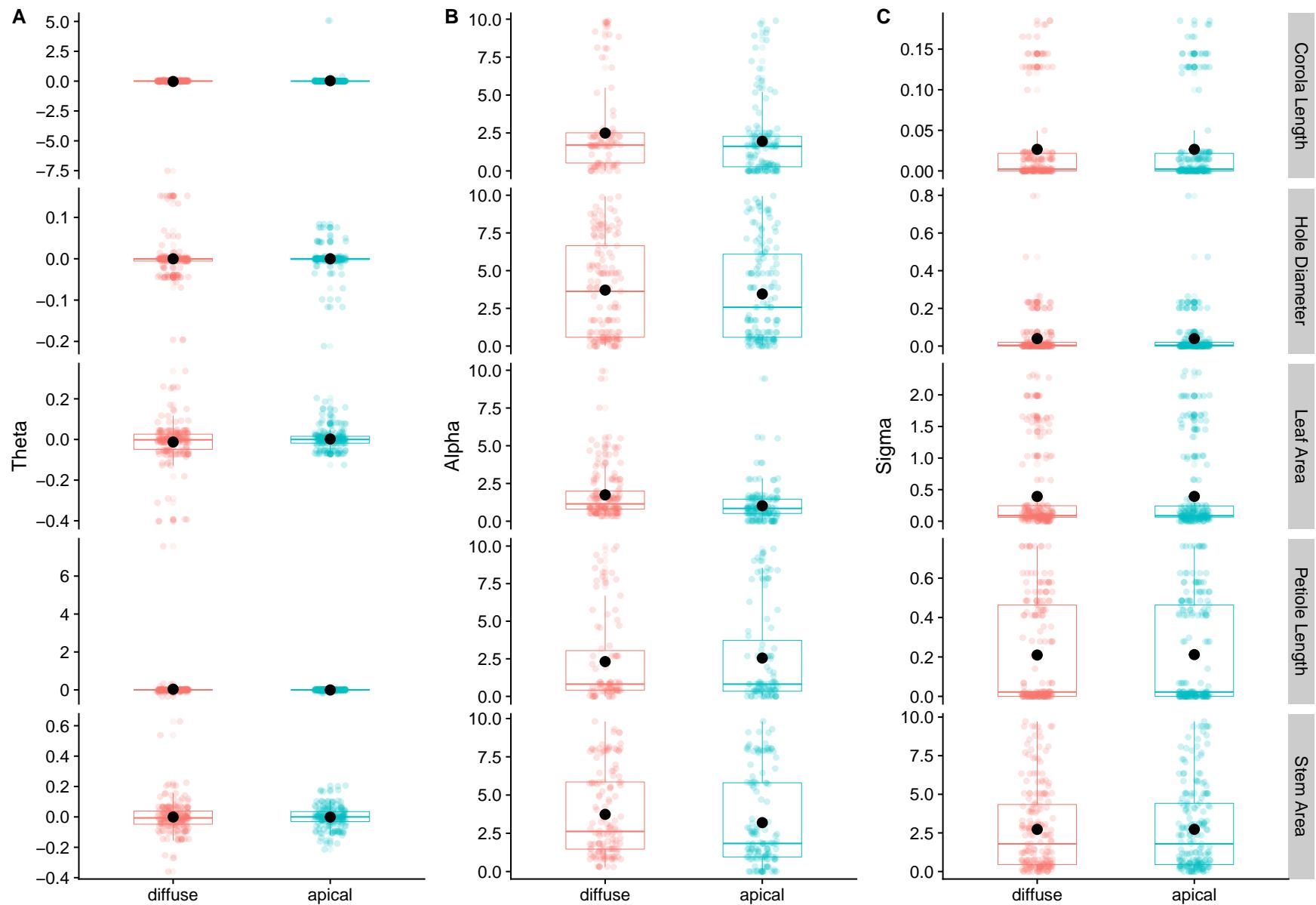


Figure 7: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Domatium Growth.

## **PC1 - Parameter differences**

Table 19: Differences in Theta values for PC1 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	<b>82</b>	0	<b>77</b>	0	<b>96</b>	0	<b>93</b>	0	<b>97</b>
apical	<b>105</b>	0	<b>106</b>	0	<b>101</b>	0	<b>80</b>	0	<b>101</b>	0

Table 20: Differences in Alpha values for PC1 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

31

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	<b>69</b>	0	<b>53</b>	0	<b>106</b>	0	44	0	<b>90</b>
apical	49	0	<b>73</b>	0	<b>89</b>	0	<b>76</b>	0	<b>104</b>	0

Table 21: Differences in Sigma values for PC1 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	30	0	46	0	<b>81</b>	0	33	0	<b>71</b>
apical	44	0	36	0	<b>84</b>	0	<b>64</b>	0	<b>107</b>	0

## PC2 - Parameters

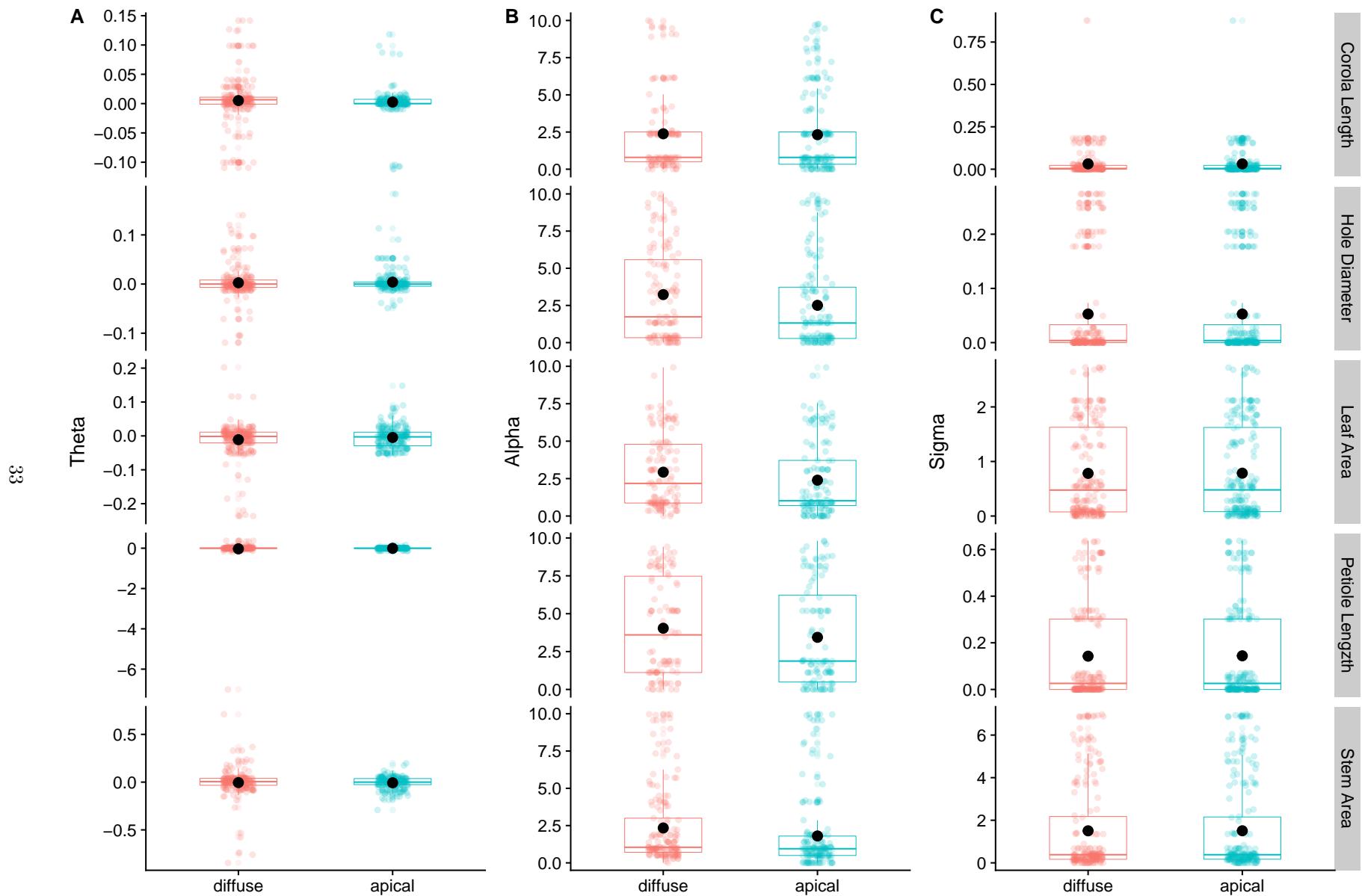


Figure 8: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Domatium Growth.

## **PC2 - Parameter differences**

Table 22: Differences in Theta values for PC2 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	<b>74</b>	0	<b>102</b>	0	<b>98</b>	0	<b>89</b>	0	<b>96</b>
apical	<b>101</b>	0	<b>81</b>	0	<b>101</b>	0	<b>93</b>	0	<b>91</b>	0

Table 23: Differences in Alpha values for PC2 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	<b>62</b>	0	<b>54</b>	0	<b>89</b>	0	46	0	<b>89</b>
apical	<b>51</b>	0	<b>83</b>	0	<b>109</b>	0	35	0	<b>98</b>	0

Table 24: Differences in Sigma values for PC2 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	32	0	34	0	<b>60</b>	0	34	0	<b>58</b>
apical	40	0	<b>53</b>	0	<b>113</b>	0	<b>56</b>	0	<b>101</b>	0

## PC3 - Parameters

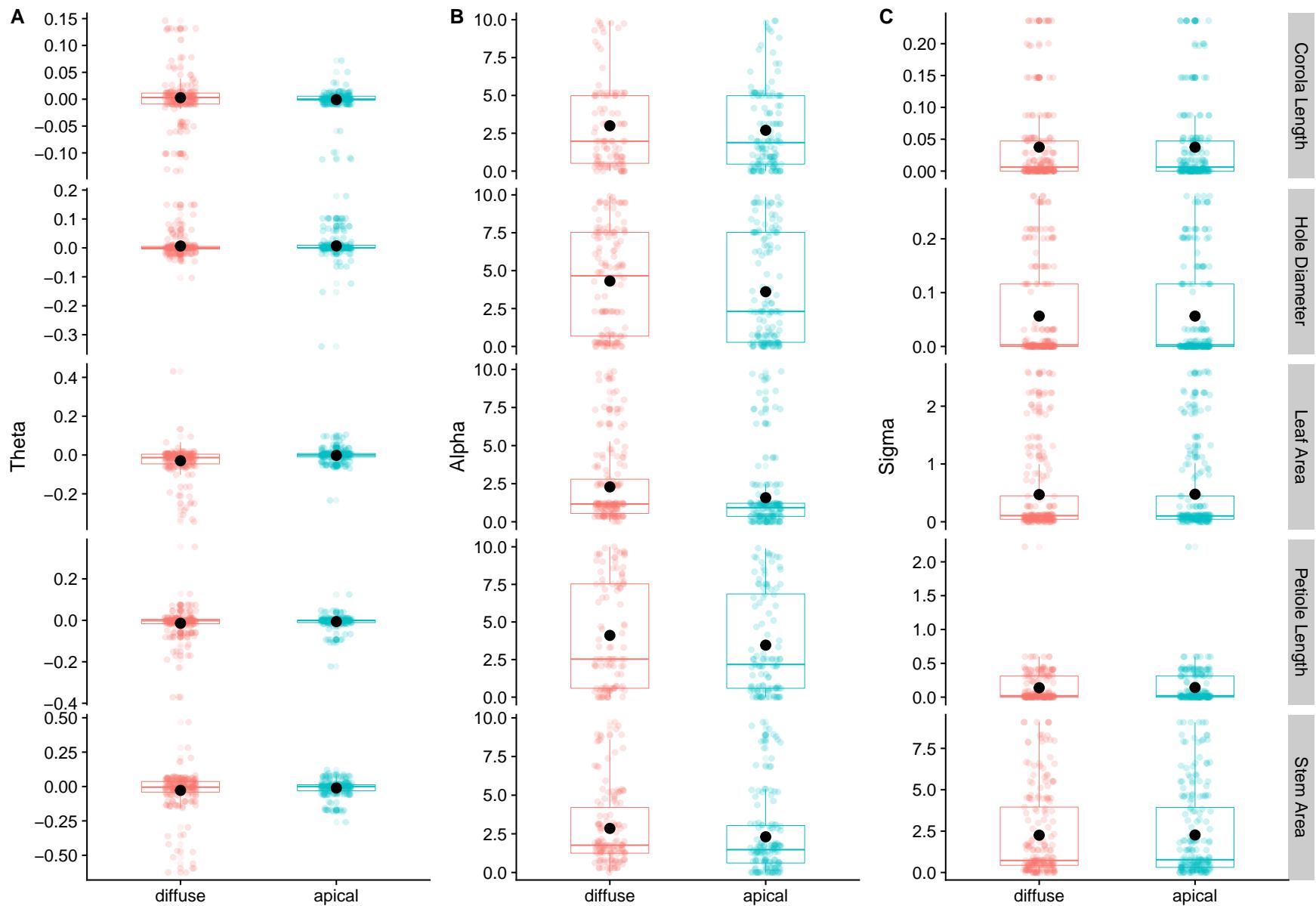


Figure 9: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Domatium Growth.

### **PC3 - Parameter differences**

Table 25: Differences in Theta values for PC3 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	<b>73</b>	0	<b>66</b>	0	<b>52</b>	0	<b>81</b>	0	<b>114</b>
apical	<b>118</b>	0	<b>119</b>	0	<b>146</b>	0	<b>111</b>	0	<b>83</b>	0

Table 26: Differences in Alpha values for PC3 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

63

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	<b>61</b>	0	<b>60</b>	0	<b>84</b>	0	42	0	<b>78</b>
apical	<b>57</b>	0	<b>64</b>	0	<b>114</b>	0	<b>51</b>	0	<b>114</b>	0

Table 27: Differences in Sigma values for PC3 analysis of Domatium Growth. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical	diffuse	apical
diffuse	0	19	0	21	0	47	0	42	0	<b>71</b>
apical	<b>65</b>	0	<b>52</b>	0	<b>118</b>	0	41	0	<b>98</b>	0

**Leaf Structure**

**PC1 - Parameters**

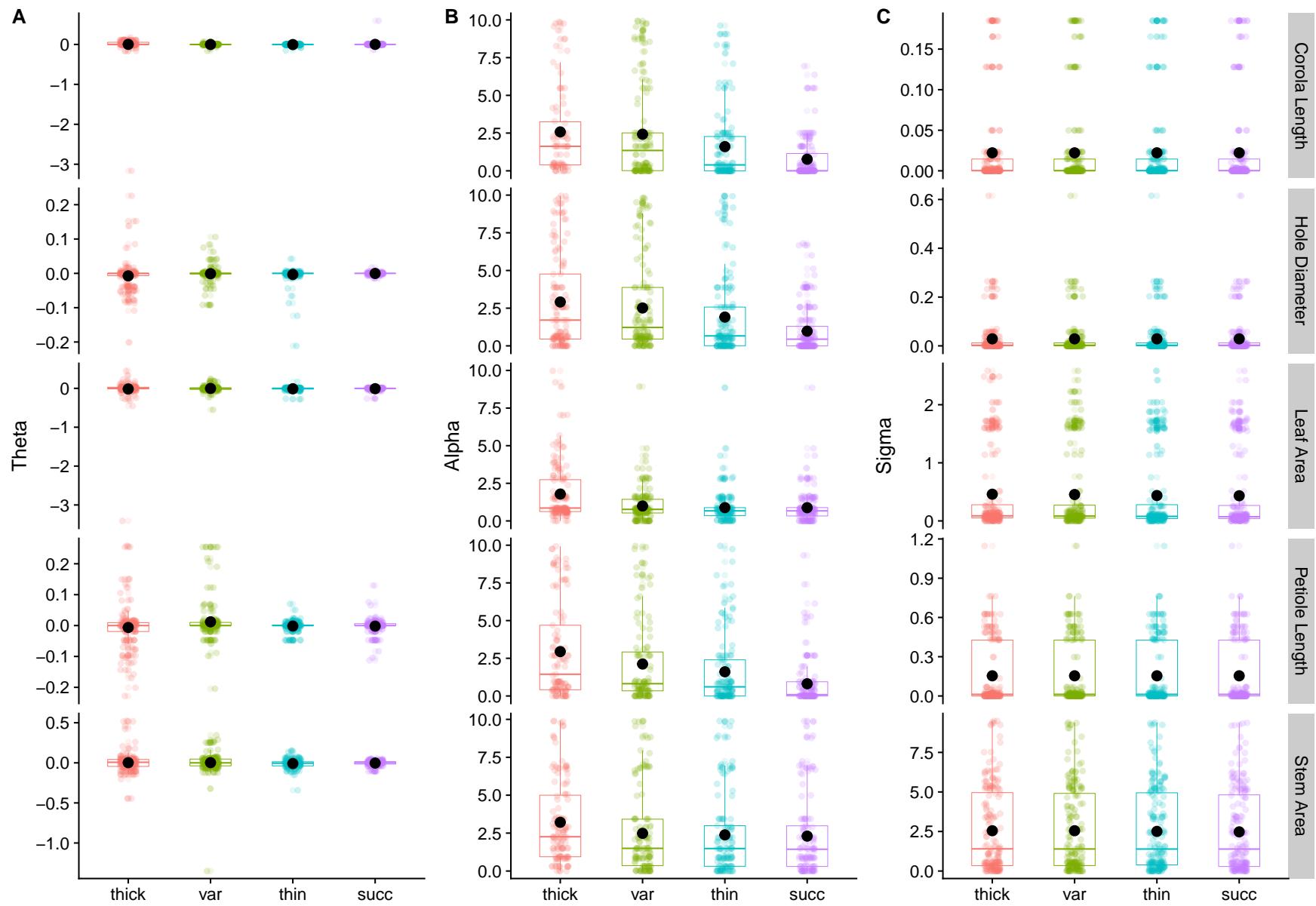


Figure 10: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Leaf Structure.

## **PC1 - Parameter differences**

Table 28: Differences in Theta values for PC1 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	120	131	120	0	85	68	71	0	107	124	104	0	75	92	90	0	95	104	105
var	68	0	101	77	92	0	58	60	91	0	101	100	106	0	99	91	98	0	84	88
thin	47	52	0	26	109	92	0	52	74	72	0	44	89	63	0	45	89	92	0	43
succ	58	70	66	0	106	84	41	0	94	73	69	0	90	64	63	0	88	88	74	0

Table 29: Differences in Alpha values for PC1 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	82	77	109	0	60	70	101	0	87	148	185	0	69	102	116	0	95	121	185
var	40	0	75	106	64	0	78	104	111	0	129	173	67	0	97	109	98	0	122	169
thin	43	45	0	77	42	46	0	81	50	68	0	116	32	40	0	88	72	71	0	113
succ	6	16	11	0	6	19	18	0	13	25	22	0	18	28	23	0	8	24	21	0

Table 30: Differences in Sigma values for PC1 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	18	28	46	0	34	56	77	0	50	104	147	0	38	61	77	0	71	93	155
var	31	0	34	44	37	0	57	76	105	0	103	149	46	0	62	74	88	0	108	150
thin	21	15	0	34	15	16	0	38	51	52	0	89	25	24	0	43	66	51	0	99
succ	3	5	5	0	1	1	5	0	8	6	12	0	7	10	13	0	4	9	8	0

## PC2 - Parameters

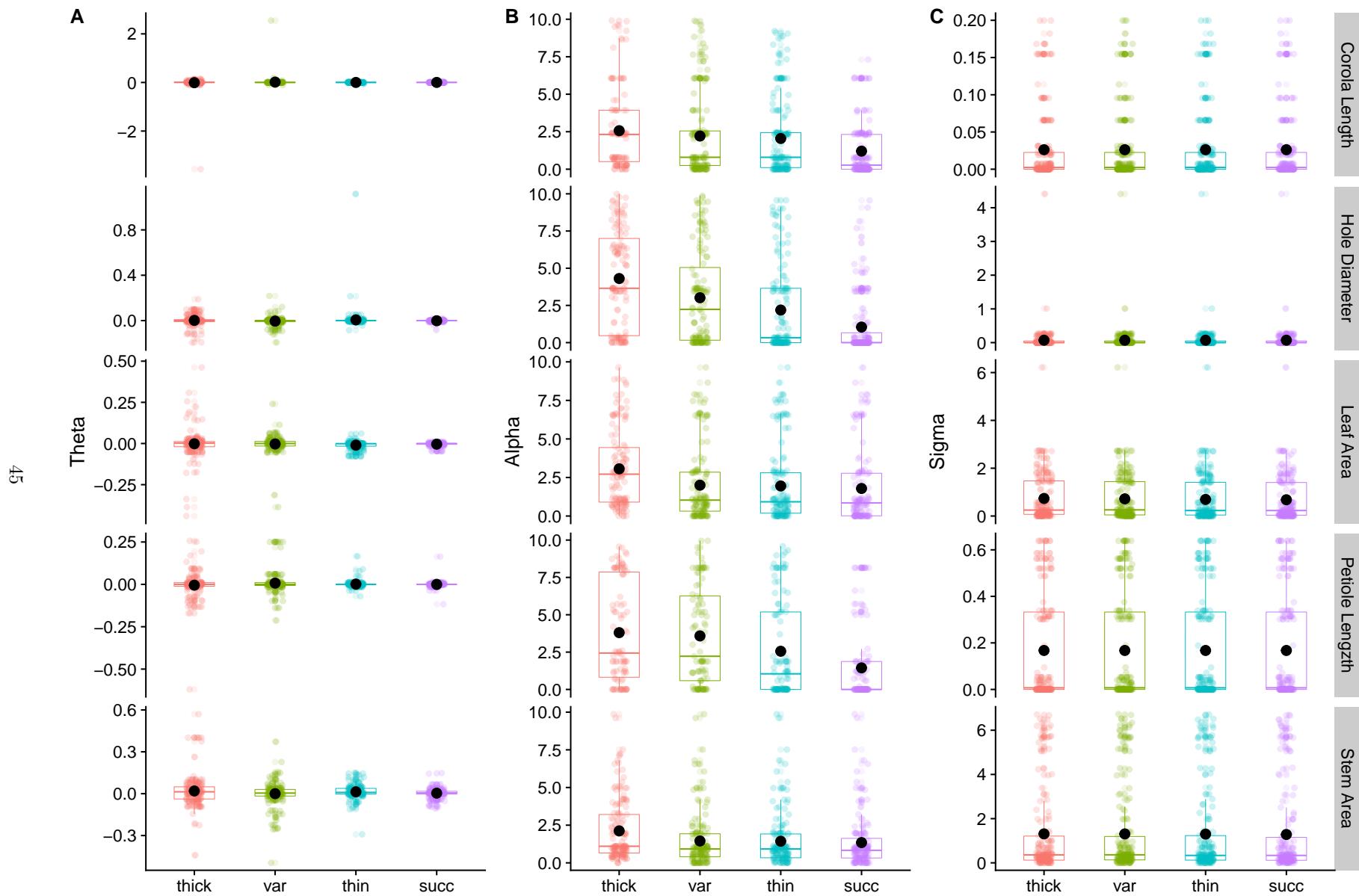


Figure 11: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Leaf Structure.

## **PC2 - Parameter differences**

Table 31: Differences in Theta values for PC2 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	114	123	113	0	105	84	95	0	96	103	103	0	72	79	78	0	88	83	95
var	72	0	81	61	82	0	64	62	98	0	105	86	110	0	94	97	97	0	75	96
thin	56	74	0	33	98	94	0	53	91	65	0	41	103	66	0	49	102	88	0	81
succ	66	84	58	0	87	84	44	0	91	84	68	0	104	54	48	0	90	67	32	0

Table 32: Differences in Alpha values for PC2 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	74	80	99	0	78	92	123	0	100	136	182	0	69	97	122	0	109	120	175
var	39	0	71	95	74	0	108	135	94	0	125	176	56	0	90	112	76	0	102	159
thin	34	44	0	70	40	44	0	87	58	69	0	119	26	35	0	74	65	83	0	112
succ	14	19	15	0	11	18	18	0	12	18	14	0	2	12	8	0	10	26	23	0

Table 33: Differences in Sigma values for PC2 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	36	54	68	0	31	46	59	0	46	92	139	0	53	66	77	0	78	99	140
var	37	0	54	66	29	0	38	55	103	0	104	140	27	0	59	74	75	0	97	140
thin	22	21	0	39	14	19	0	26	57	45	0	84	12	21	0	32	54	56	0	92
succ	6	9	5	0	1	1	5	0	10	9	11	0	1	6	5	0	13	13	11	0

## **PC3 - Parameters**

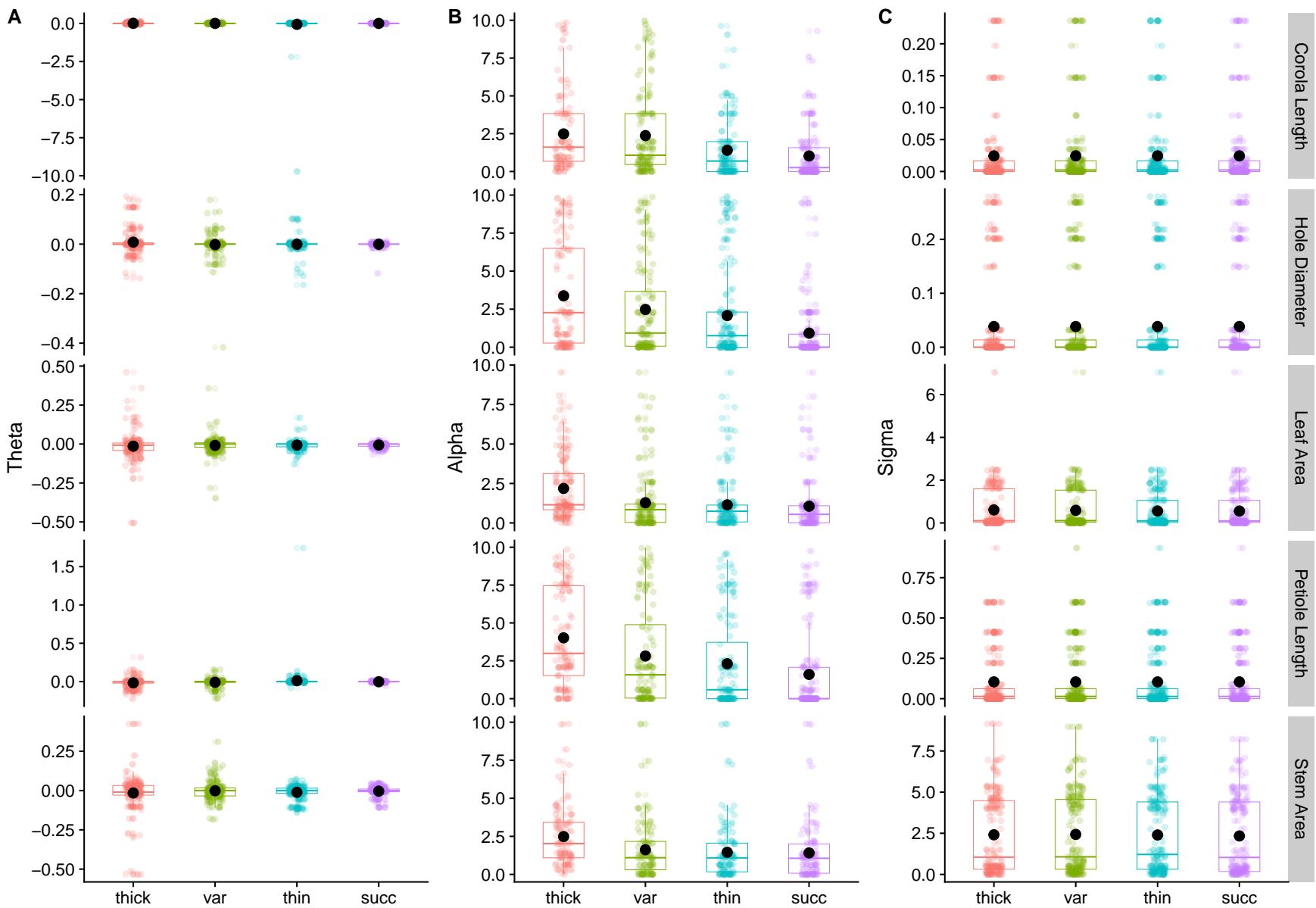


Figure 12: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Leaf Structure.

### **PC3 - Parameter differences**

Table 34: Differences in Theta values for PC3 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	<b>85</b>	<b>93</b>	<b>95</b>	0	<b>93</b>	<b>111</b>	<b>111</b>	0	<b>102</b>	<b>90</b>	<b>78</b>	0	<b>93</b>	<b>80</b>	<b>85</b>	0	<b>113</b>	<b>100</b>	<b>100</b>
var	<b>105</b>	0	<b>87</b>	<b>81</b>	<b>96</b>	0	<b>85</b>	<b>77</b>	<b>96</b>	0	<b>79</b>	<b>90</b>	<b>100</b>	0	<b>78</b>	<b>75</b>	<b>84</b>	0	<b>75</b>	<b>85</b>
thin	<b>97</b>	<b>65</b>	0	35	<b>77</b>	<b>72</b>	0	45	<b>108</b>	<b>87</b>	0	46	<b>112</b>	<b>82</b>	0	<b>54</b>	<b>97</b>	<b>96</b>	0	43
succ	<b>94</b>	<b>66</b>	<b>59</b>	0	<b>77</b>	<b>70</b>	49	0	<b>120</b>	<b>76</b>	<b>59</b>	0	<b>105</b>	<b>70</b>	45	0	<b>97</b>	<b>86</b>	<b>68</b>	0

Table 35: Differences in Alpha values for PC3 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	<b>77</b>	<b>81</b>	<b>109</b>	0	<b>80</b>	<b>90</b>	<b>127</b>	0	<b>103</b>	<b>138</b>	<b>187</b>	0	<b>80</b>	<b>118</b>	<b>138</b>	0	<b>102</b>	<b>136</b>	<b>189</b>
var	<b>62</b>	0	<b>90</b>	<b>123</b>	<b>75</b>	0	<b>108</b>	<b>141</b>	<b>95</b>	0	<b>116</b>	<b>175</b>	<b>62</b>	0	<b>108</b>	<b>125</b>	<b>95</b>	0	<b>124</b>	<b>173</b>
thin	<b>53</b>	48	0	<b>93</b>	47	50	0	<b>88</b>	<b>60</b>	<b>82</b>	0	<b>113</b>	27	38	0	<b>78</b>	<b>61</b>	<b>72</b>	0	<b>111</b>
succ	14	16	10	0	10	17	15	0	11	21	23	0	7	20	19	0	8	24	26	0

Table 36: Differences in Sigma values for PC3 analysis of Leaf Structure. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length				Hole Diameter				Leaf Area				Petiole Length				Stem Area			
	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ	thick	var	thin	succ
thick	0	21	<b>51</b>	<b>82</b>	0	17	40	<b>63</b>	0	<b>66</b>	<b>98</b>	<b>142</b>	0	34	<b>57</b>	<b>70</b>	0	<b>74</b>	<b>104</b>	<b>155</b>
var	<b>66</b>	0	<b>62</b>	<b>81</b>	43	0	35	<b>60</b>	<b>80</b>	0	<b>92</b>	<b>140</b>	38	0	<b>53</b>	<b>67</b>	<b>84</b>	0	<b>109</b>	<b>152</b>
thin	39	28	0	46	22	23	0	33	48	<b>54</b>	0	<b>76</b>	18	22	0	36	<b>54</b>	49	0	<b>95</b>
succ	9	9	8	0	2	1	1	0	4	6	10	0	4	9	4	0	3	6	10	0

**Mating System**

**PC1 - Parameters**

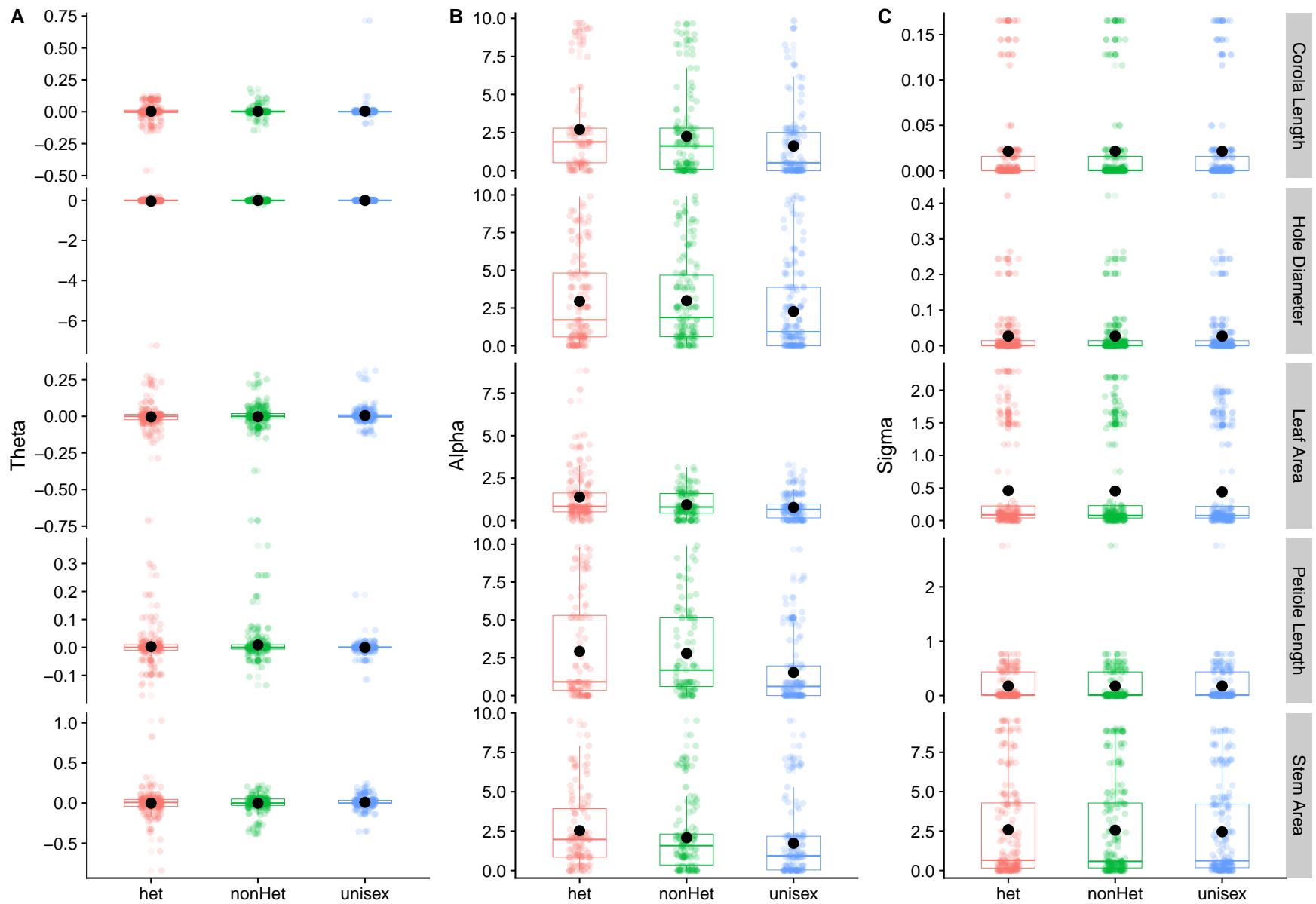


Figure 13: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Mating System.

## **PC1 - Parameter differences**

Table 37: Differences in Theta values for PC1 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	<b>90</b>	<b>95</b>	0	<b>94</b>	<b>99</b>	0	<b>88</b>	<b>81</b>	0	<b>77</b>	<b>90</b>	0	<b>104</b>	<b>104</b>
nonHet	<b>100</b>	0	<b>70</b>	<b>85</b>	0	<b>84</b>	<b>101</b>	0	<b>85</b>	<b>95</b>	0	<b>88</b>	<b>91</b>	0	<b>73</b>
unisex	<b>95</b>	<b>94</b>	0	<b>79</b>	<b>72</b>	0	<b>108</b>	<b>85</b>	0	<b>86</b>	<b>69</b>	0	<b>91</b>	<b>99</b>	0

Table 38: Differences in Alpha values for PC1 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	<b>81</b>	<b>86</b>	0	<b>60</b>	<b>76</b>	0	<b>104</b>	<b>145</b>	0	<b>64</b>	<b>106</b>	0	<b>96</b>	<b>127</b>
nonHet	46	0	<b>86</b>	<b>60</b>	0	<b>81</b>	<b>85</b>	0	<b>120</b>	<b>73</b>	0	<b>102</b>	<b>99</b>	0	<b>128</b>
unisex	31	41	0	37	38	0	44	<b>69</b>	0	32	36	0	<b>68</b>	<b>67</b>	0

Table 39: Differences in Sigma values for PC1 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	21	<b>56</b>	0	19	<b>55</b>	0	<b>90</b>	<b>115</b>	0	45	<b>63</b>	0	<b>84</b>	<b>100</b>
nonHet	47	0	<b>55</b>	49	0	<b>63</b>	<b>56</b>	0	<b>100</b>	35	0	<b>57</b>	<b>62</b>	0	<b>95</b>
unisex	12	13	0	17	10	0	31	46	0	17	23	0	46	<b>51</b>	0

## **PC2 - Parameters**

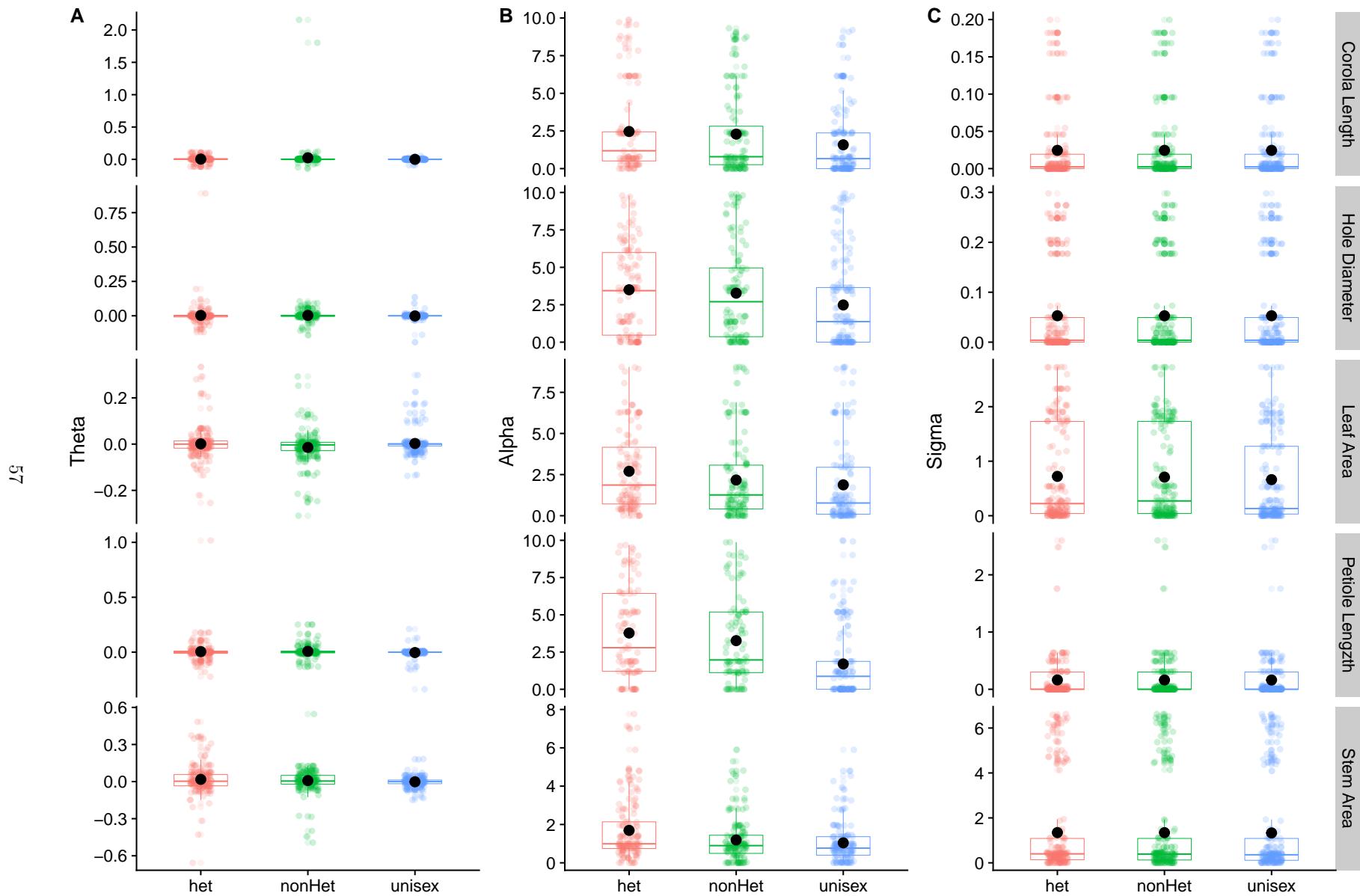


Figure 14: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Mating System.

## **PC2 - Parameter differences**

Table 40: Differences in Theta values for PC2 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	<b>90</b>	<b>98</b>	0	<b>79</b>	<b>83</b>	0	<b>121</b>	<b>92</b>	0	<b>63</b>	<b>80</b>	0	<b>74</b>	<b>94</b>
nonHet	<b>90</b>	0	<b>77</b>	<b>89</b>	0	<b>84</b>	<b>68</b>	0	<b>66</b>	<b>112</b>	0	<b>86</b>	<b>108</b>	0	<b>98</b>
unisex	<b>85</b>	<b>88</b>	0	<b>79</b>	<b>72</b>	0	<b>97</b>	<b>105</b>	0	<b>95</b>	<b>58</b>	0	<b>88</b>	<b>62</b>	0

Table 41: Differences in Alpha values for PC2 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	<b>73</b>	<b>88</b>	0	<b>61</b>	<b>79</b>	0	<b>89</b>	<b>138</b>	0	<b>67</b>	<b>113</b>	0	<b>96</b>	<b>121</b>
nonHet	43	0	<b>84</b>	<b>61</b>	0	<b>94</b>	<b>100</b>	0	<b>123</b>	<b>62</b>	0	<b>98</b>	<b>86</b>	0	<b>112</b>
unisex	27	31	0	39	28	0	<b>51</b>	<b>66</b>	0	16	30	0	<b>61</b>	<b>70</b>	0

Table 42: Differences in Sigma values for PC2 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	21	36	0	28	40	0	<b>73</b>	<b>115</b>	0	26	<b>54</b>	0	<b>64</b>	<b>90</b>
nonHet	40	0	41	28	0	48	<b>72</b>	0	<b>97</b>	43	0	<b>58</b>	<b>83</b>	0	<b>96</b>
unisex	25	20	0	17	10	0	30	48	0	15	9	0	<b>57</b>	<b>51</b>	0

## **PC3 - Parameters**

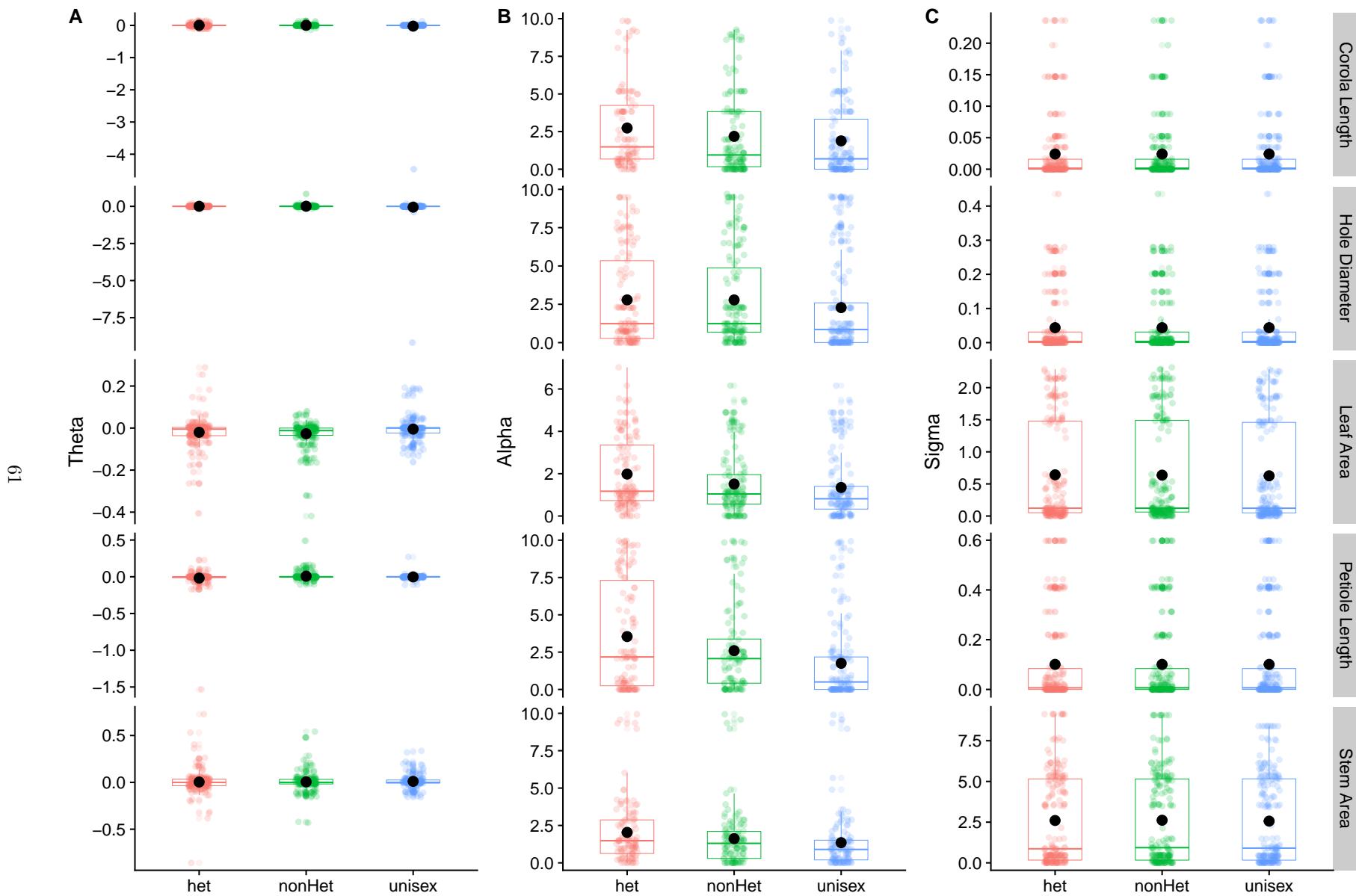


Figure 15: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Mating System.

### **PC3 - Parameter differences**

Table 43: Differences in Theta values for PC3 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	107	88	0	76	107	0	127	89	0	70	71	0	109	96
nonHet	81	0	69	105	0	101	64	0	52	112	0	87	84	0	76
unisex	100	96	0	73	64	0	102	120	0	110	74	0	97	103	0

Table 44: Differences in Alpha values for PC3 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	73	88	0	65	86	0	90	150	0	74	107	0	89	139
nonHet	46	0	80	57	0	99	101	0	117	70	0	105	104	0	133
unisex	31	38	0	27	21	0	41	74	0	37	39	0	54	60	0

Table 45: Differences in Sigma values for PC3 analysis of Mating System. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex	het	nonHet	unisex
het	0	21	48	0	32	60	0	78	121	0	34	59	0	95	108
nonHet	38	0	49	29	0	66	79	0	101	35	0	52	59	0	94
unisex	21	20	0	9	8	0	36	56	0	10	17	0	46	60	0

**Reward**

**PC1 - Parameters**

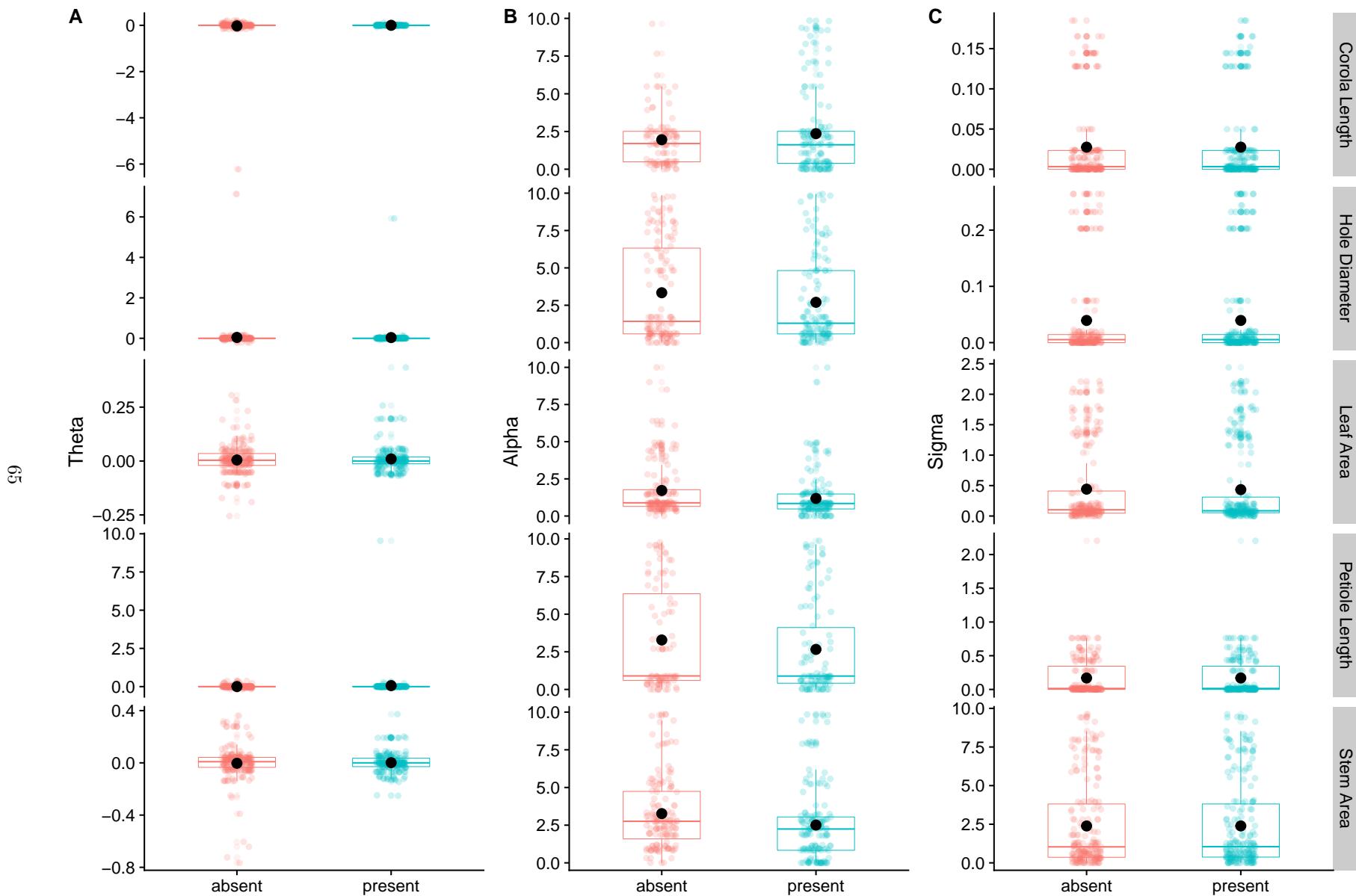


Figure 16: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Reward.

## **PC1 - Parameter differences**

Table 46: Differences in Theta values for PC1 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	<b>87</b>	0	<b>78</b>	0	<b>104</b>	0	<b>83</b>	0	<b>104</b>
present	<b>106</b>	0	<b>100</b>	0	<b>92</b>	0	<b>95</b>	0	<b>94</b>	0

Table 47: Differences in Alpha values for PC1 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

69

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	<b>72</b>	0	45	0	<b>114</b>	0	<b>61</b>	0	<b>112</b>
present	39	0	43	0	<b>82</b>	0	<b>69</b>	0	<b>84</b>	0

Table 48: Differences in Sigma values for PC1 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	33	0	22	0	<b>100</b>	0	34	0	<b>88</b>
present	34	0	<b>52</b>	0	<b>70</b>	0	48	0	<b>77</b>	0

## **PC2 - Parameter**

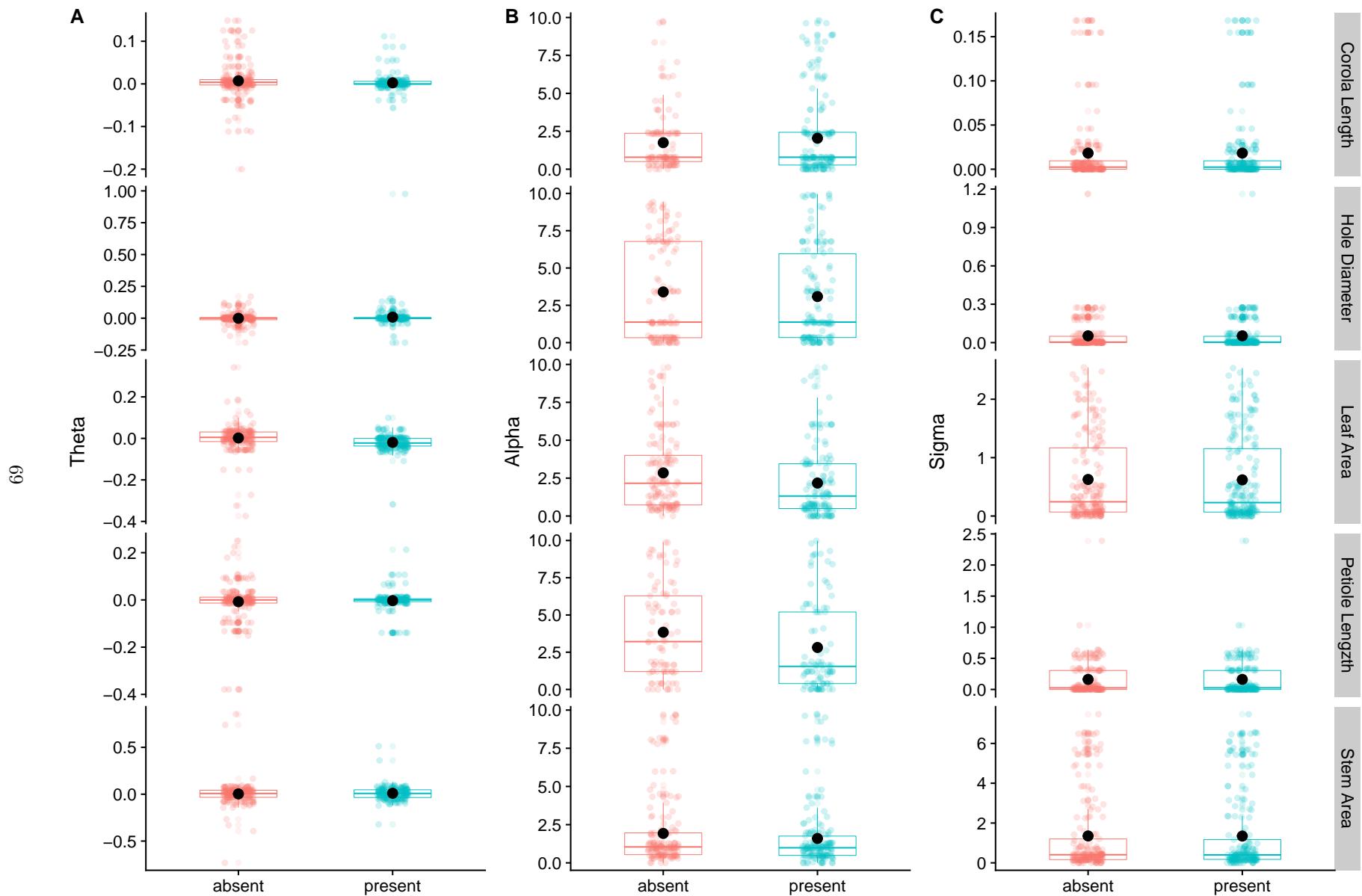


Figure 17: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Reward.

## **PC2 - Parameter differences**

Table 49: Differences in Theta values for PC2 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	<b>101</b>	0	<b>68</b>	0	<b>136</b>	0	<b>88</b>	0	<b>78</b>
present	<b>89</b>	0	<b>113</b>	0	<b>61</b>	0	<b>92</b>	0	<b>111</b>	0

Table 50: Differences in Alpha values for PC2 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	<b>64</b>	0	<b>58</b>	0	<b>113</b>	0	<b>57</b>	0	<b>106</b>
present	<b>60</b>	0	<b>70</b>	0	<b>81</b>	0	<b>62</b>	0	<b>83</b>	0

Table 51: Differences in Sigma values for PC2 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	41	0	9	0	<b>86</b>	0	26	0	<b>88</b>
present	48	0	<b>60</b>	0	<b>82</b>	0	<b>54</b>	0	<b>82</b>	0

## **PC3 - Parameters**

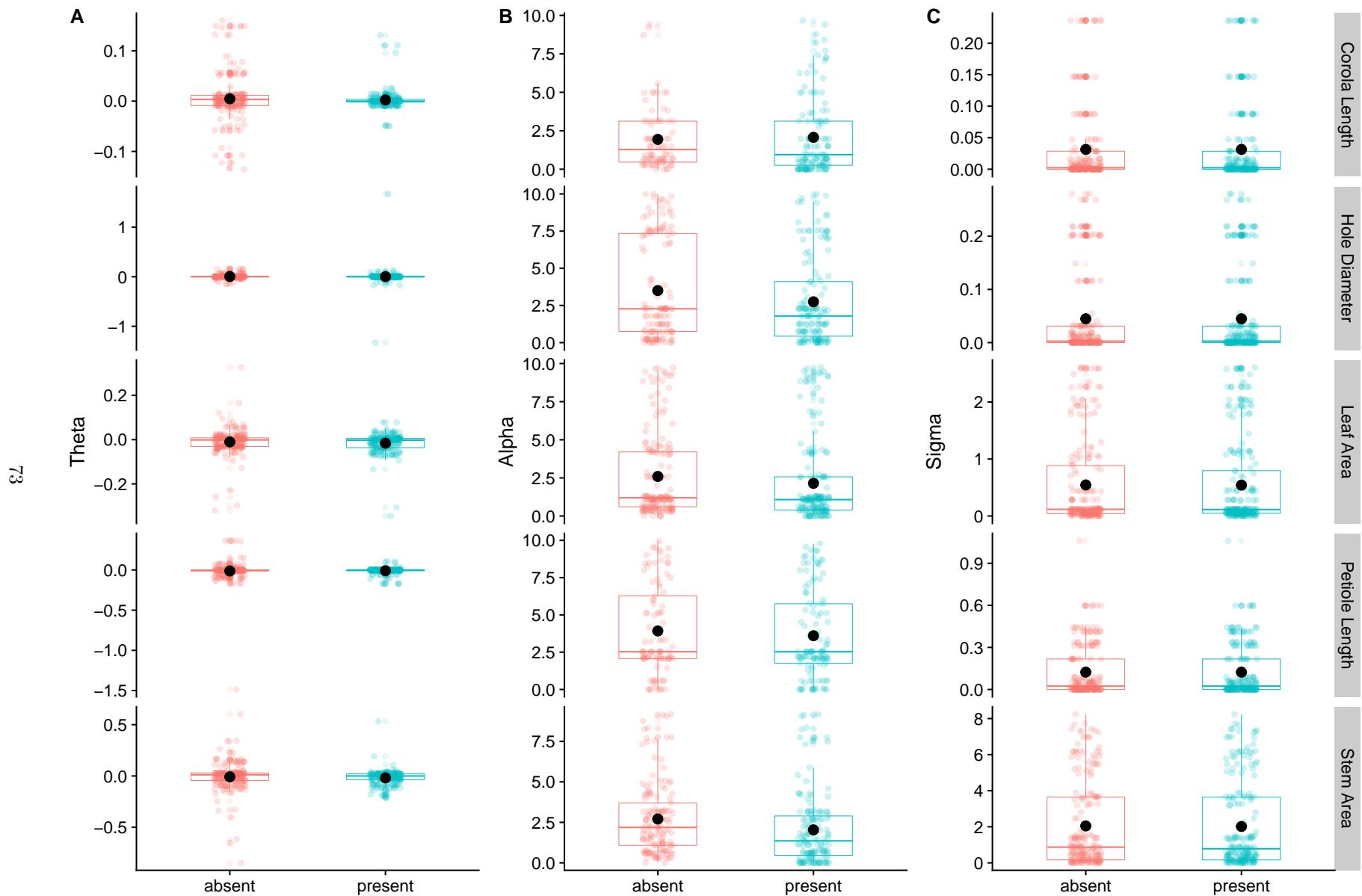


Figure 18: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Reward.

### **PC3 - Parameter differences**

Table 52: Differences in Theta values for PC3 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	<b>85</b>	0	<b>84</b>	0	<b>98</b>	0	<b>87</b>	0	<b>103</b>
present	<b>104</b>	0	<b>97</b>	0	<b>100</b>	0	<b>103</b>	0	<b>93</b>	0

Table 53: Differences in Alpha values for PC3 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	<b>77</b>	0	<b>58</b>	0	<b>115</b>	0	49	0	<b>143</b>
present	41	0	<b>63</b>	0	<b>83</b>	0	<b>63</b>	0	<b>53</b>	0

Table 54: Differences in Sigma values for PC3 analysis of Reward. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length		Hole Diameter		Leaf Area		Petiole Length		Stem Area	
	absent	present	absent	present	absent	present	absent	present	absent	present
absent	0	36	0	27	0	<b>96</b>	0	33	0	<b>112</b>
present	34	0	<b>51</b>	0	<b>76</b>	0	45	0	<b>54</b>	0

**Strategy**

**PC1 - Parameters**

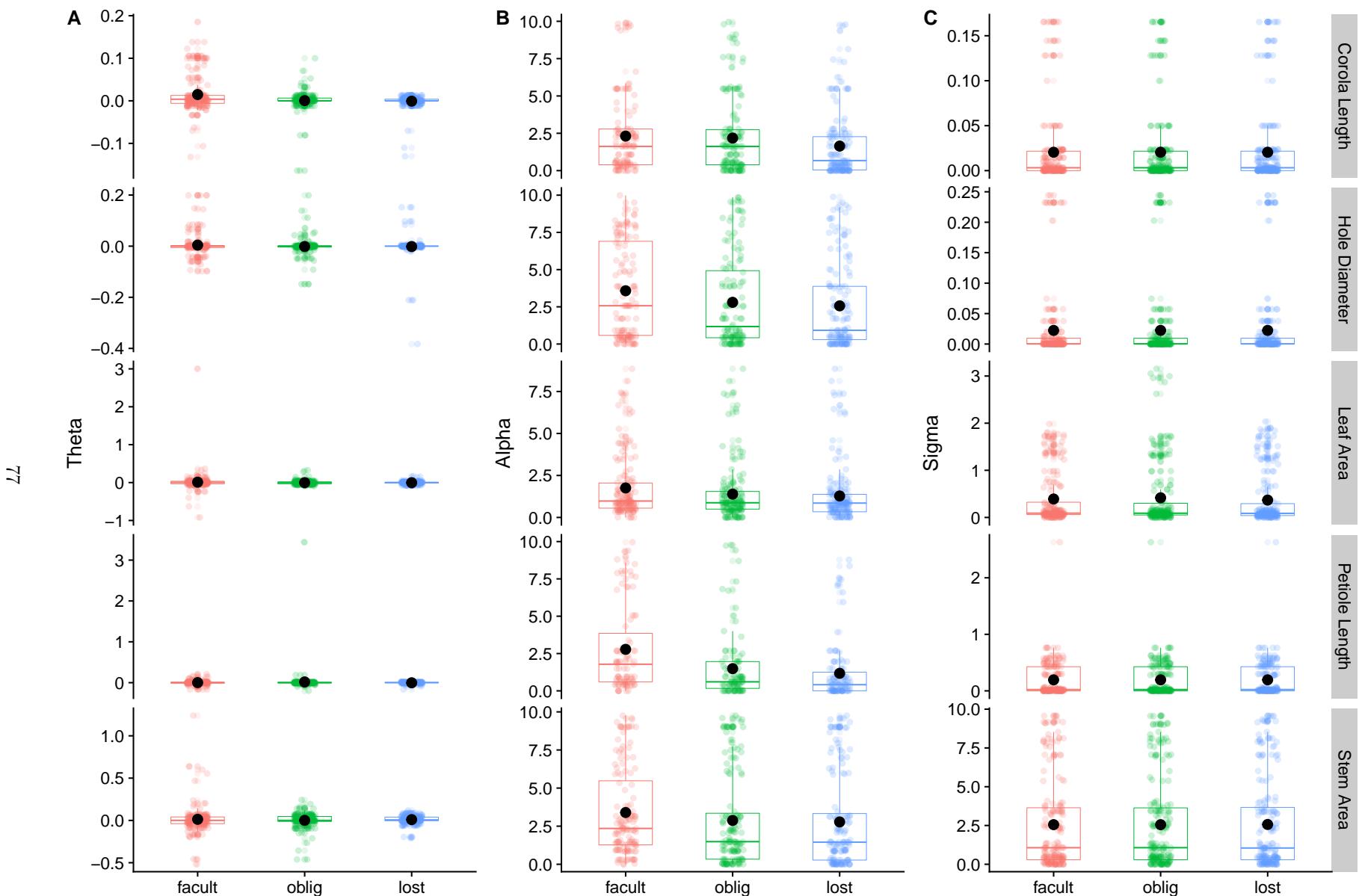


Figure 19: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Strategy.

## **PC1 - Parameter differences**

Table 55: Differences in Theta values for PC1 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	<b>98</b>	<b>115</b>	0	<b>85</b>	<b>81</b>	0	<b>111</b>	<b>119</b>	0	<b>100</b>	<b>97</b>	0	<b>102</b>	<b>71</b>
oblig	<b>94</b>	0	<b>93</b>	<b>93</b>	0	<b>77</b>	<b>89</b>	0	<b>85</b>	<b>82</b>	0	<b>81</b>	<b>94</b>	0	<b>75</b>
lost	<b>78</b>	<b>80</b>	0	<b>96</b>	<b>79</b>	0	<b>81</b>	<b>100</b>	0	<b>85</b>	<b>77</b>	0	<b>125</b>	<b>99</b>	0

Table 56: Differences in Alpha values for PC1 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	<b>60</b>	<b>83</b>	0	<b>61</b>	<b>73</b>	0	<b>109</b>	<b>147</b>	0	<b>63</b>	<b>75</b>	0	<b>74</b>	<b>147</b>
oblig	<b>55</b>	0	<b>80</b>	<b>57</b>	0	<b>70</b>	<b>91</b>	0	<b>134</b>	<b>54</b>	0	<b>67</b>	<b>117</b>	0	<b>145</b>
lost	28	36	0	46	<b>51</b>	0	<b>53</b>	<b>66</b>	0	36	<b>52</b>	0	44	44	0

Table 57: Differences in Sigma values for PC1 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corolla Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	26	<b>61</b>	0	<b>58</b>	<b>61</b>	0	<b>95</b>	<b>125</b>	0	50	<b>62</b>	0	<b>72</b>	<b>111</b>
oblig	<b>62</b>	0	<b>72</b>	13	0	46	<b>76</b>	0	<b>134</b>	48	0	<b>69</b>	<b>89</b>	0	<b>113</b>
lost	24	14	0	10	25	0	46	37	0	36	33	0	50	48	0

## **PC2 - Parameters**

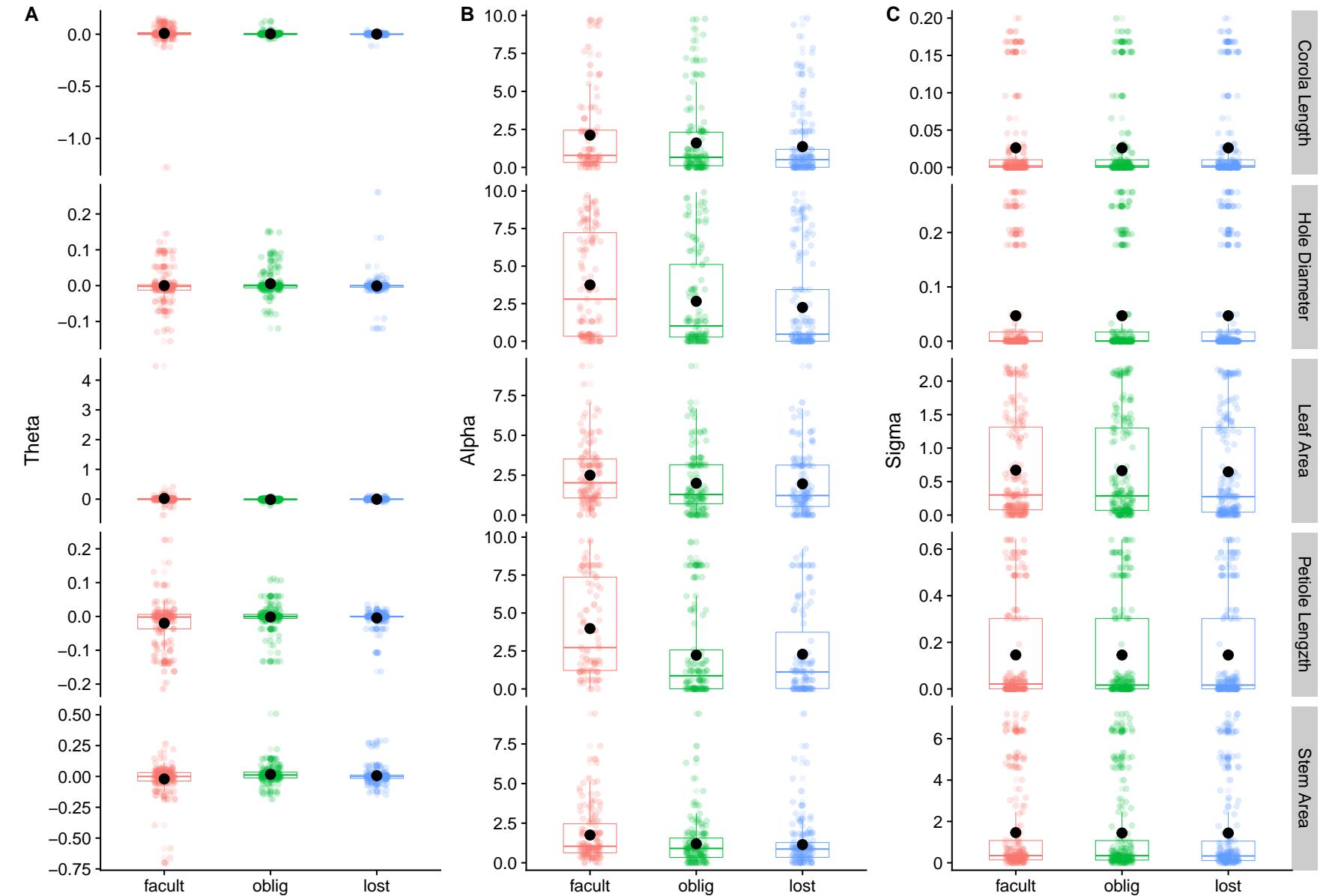


Figure 20: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Strategy.

## **PC2 - Parameter differences**

Table 58: Differences in Theta values for PC2 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	101	105	0	84	74	0	106	108	0	68	83	0	76	88
oblig	88	0	76	100	0	74	91	0	89	114	0	92	111	0	113
lost	84	86	0	109	89	0	89	95	0	99	73	0	99	56	0

Table 59: Differences in Alpha values for PC2 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	74	94	0	70	86	0	109	154	0	72	77	0	121	135
oblig	51	0	75	60	0	86	80	0	129	22	0	51	66	0	117
lost	30	49	0	42	46	0	35	59	0	14	43	0	52	70	0

Table 60: Differences in Sigma values for PC2 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	27	57	0	38	59	0	96	120	0	43	73	0	73	112
oblig	47	0	62	36	0	56	70	0	111	41	0	60	81	0	98
lost	19	14	0	18	22	0	46	55	0	11	21	0	42	56	0

## **PC3 - Parameters**

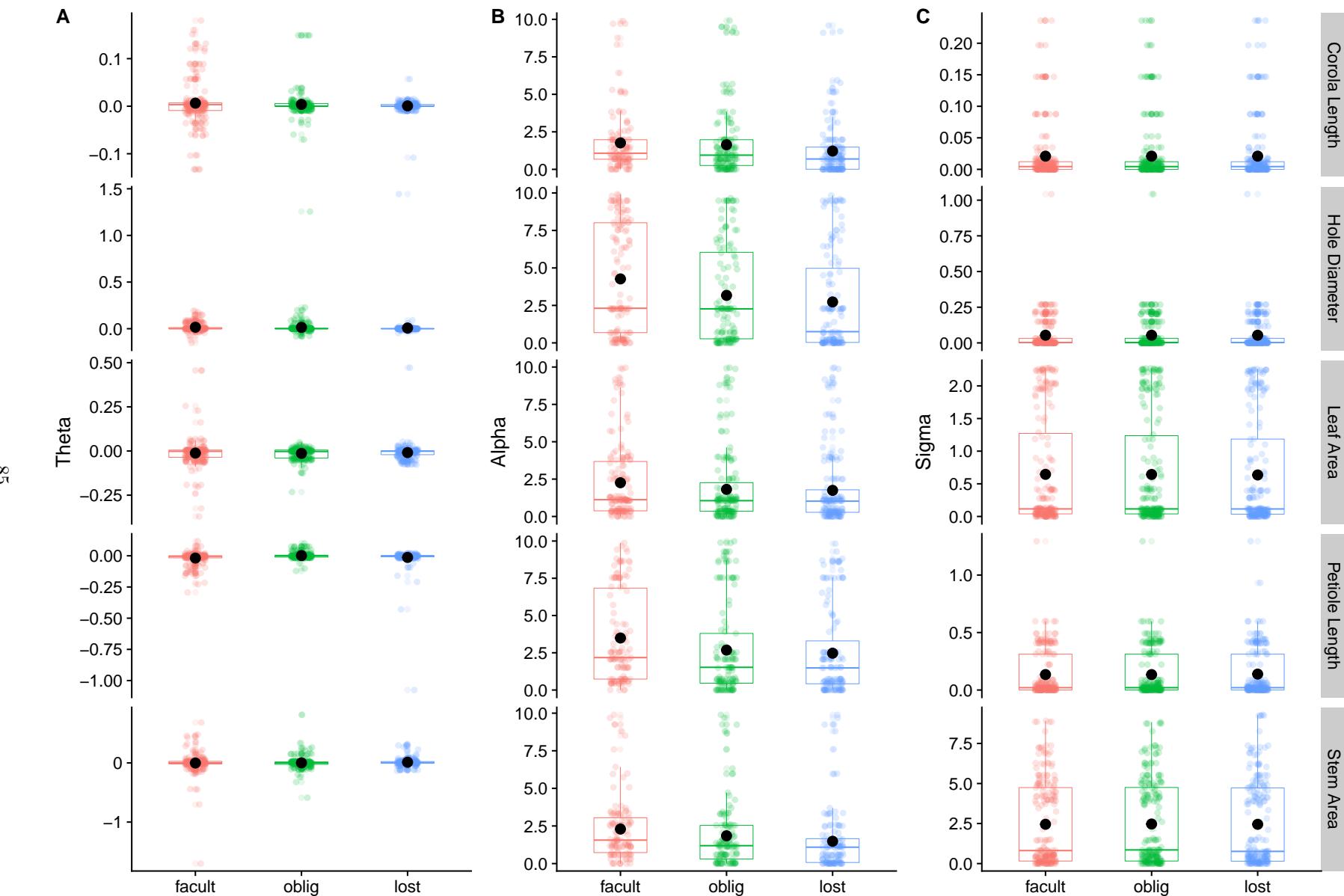


Figure 21: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Strategy.

### **PC3 - Parameter differences**

Table 61: Differences in Theta values for PC3 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	<b>92</b>	<b>92</b>	0	<b>105</b>	<b>100</b>	0	<b>81</b>	<b>105</b>	0	<b>88</b>	<b>88</b>	0	<b>107</b>	<b>80</b>
oblig	<b>97</b>	0	<b>85</b>	<b>76</b>	0	<b>80</b>	<b>117</b>	0	<b>94</b>	<b>111</b>	0	<b>93</b>	<b>93</b>	0	<b>89</b>
lost	<b>97</b>	<b>86</b>	0	<b>81</b>	<b>77</b>	0	<b>93</b>	<b>87</b>	0	<b>106</b>	<b>83</b>	0	<b>120</b>	<b>91</b>	0

Table 62: Differences in Alpha values for PC3 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	<b>63</b>	<b>77</b>	0	<b>68</b>	<b>68</b>	0	<b>104</b>	<b>144</b>	0	<b>57</b>	<b>74</b>	0	<b>79</b>	<b>144</b>
oblig	43	0	<b>79</b>	<b>58</b>	0	<b>84</b>	<b>94</b>	0	<b>138</b>	39	0	<b>59</b>	<b>116</b>	0	<b>131</b>
lost	21	28	0	49	44	0	<b>54</b>	<b>60</b>	0	21	37	0	<b>51</b>	<b>64</b>	0

Table 63: Differences in Sigma values for PC3 analysis of Strategy. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost	facult	oblig	lost
facult	0	23	<b>68</b>	0	29	<b>58</b>	0	<b>94</b>	<b>120</b>	0	37	<b>55</b>	0	<b>59</b>	<b>109</b>
oblig	<b>56</b>	0	<b>67</b>	44	0	<b>62</b>	<b>70</b>	0	<b>124</b>	44	0	<b>52</b>	<b>99</b>	0	<b>108</b>
lost	19	19	0	17	15	0	44	40	0	31	34	0	49	50	0

**Warts**

**PC1 - Parameters**

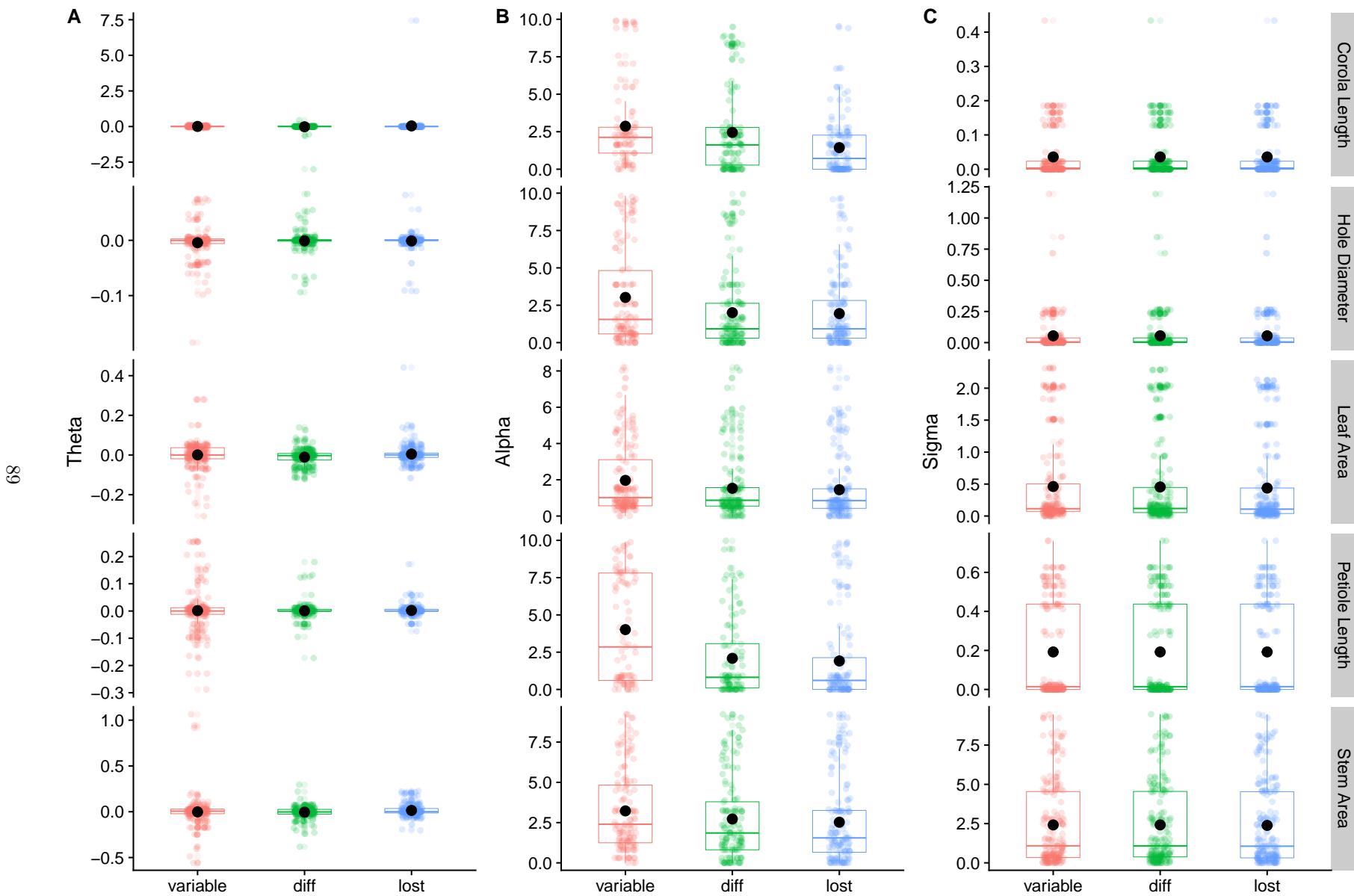


Figure 22: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Warts.

## **PC1 - Parameter differences**

Table 64: Differences in Theta values for PC1 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	103	83	0	64	95	0	133	112	0	85	94	0	91	81
diff	84	0	67	114	0	94	66	0	68	93	0	74	108	0	75
lost	96	91	0	83	57	0	87	122	0	85	80	0	118	114	0

Table 65: Differences in Alpha values for PC1 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	67	78	0	57	69	0	111	151	0	73	78	0	89	128
diff	42	0	73	54	0	72	88	0	146	58	0	78	110	0	125
lost	31	35	0	35	39	0	48	53	0	53	53	0	71	74	0

Table 66: Differences in Sigma values for PC1 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	30	52	0	46	77	0	116	136	0	35	58	0	73	102
diff	32	0	46	43	0	66	60	0	133	51	0	70	97	0	117
lost	13	18	0	9	23	0	40	43	0	25	18	0	68	53	0

## PC2 - Parameters

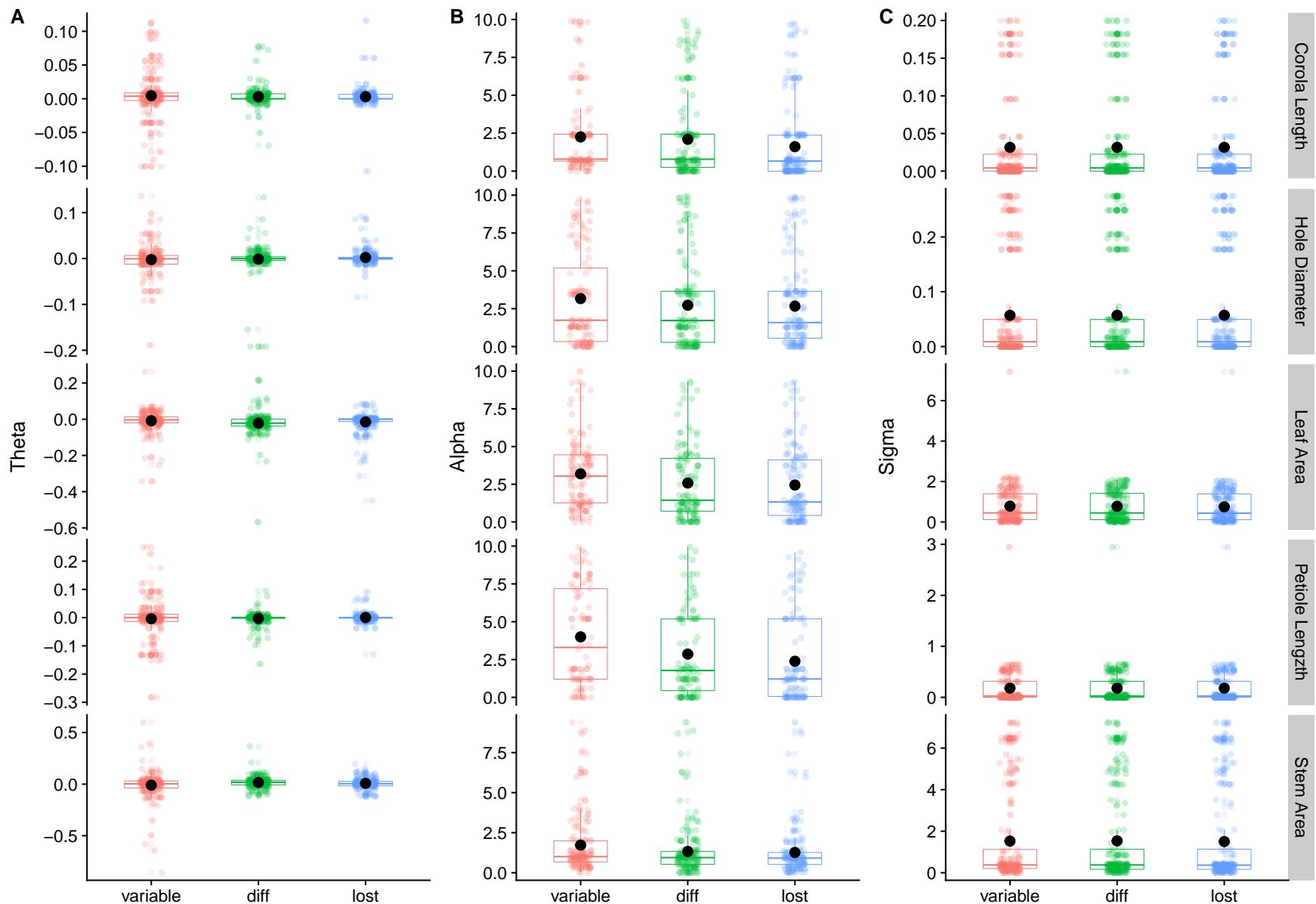


Figure 23: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Warts.

## **PC2 - Parameter differences**

Table 67: Differences in Theta values for PC2 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	<b>92</b>	<b>93</b>	0	<b>73</b>	<b>79</b>	0	<b>142</b>	<b>106</b>	0	<b>69</b>	<b>80</b>	0	<b>83</b>	<b>68</b>
diff	<b>104</b>	0	<b>83</b>	<b>111</b>	0	<b>77</b>	<b>58</b>	0	<b>62</b>	<b>113</b>	0	<b>89</b>	<b>105</b>	0	<b>82</b>
lost	<b>93</b>	<b>92</b>	0	<b>103</b>	<b>76</b>	0	<b>94</b>	<b>126</b>	0	<b>103</b>	<b>56</b>	0	<b>120</b>	<b>92</b>	0

Table 68: Differences in Alpha values for PC2 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	<b>67</b>	<b>84</b>	0	<b>51</b>	<b>59</b>	0	<b>122</b>	<b>154</b>	0	<b>62</b>	<b>87</b>	0	<b>74</b>	<b>122</b>
diff	<b>53</b>	0	<b>88</b>	<b>62</b>	0	<b>64</b>	<b>78</b>	0	<b>138</b>	48	0	<b>74</b>	<b>114</b>	0	<b>118</b>
lost	37	33	0	<b>51</b>	<b>53</b>	0	46	<b>62</b>	0	24	37	0	<b>66</b>	<b>70</b>	0

Table 69: Differences in Sigma values for PC2 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	<b>53</b>	<b>52</b>	0	31	<b>75</b>	0	<b>122</b>	<b>121</b>	0	31	<b>64</b>	0	<b>65</b>	<b>97</b>
diff	29	0	<b>51</b>	<b>58</b>	0	<b>76</b>	48	0	<b>115</b>	<b>51</b>	0	<b>67</b>	<b>102</b>	0	<b>95</b>
lost	27	34	0	15	14	0	49	<b>55</b>	0	17	15	0	<b>70</b>	<b>72</b>	0

## **PC3 - Parameters**

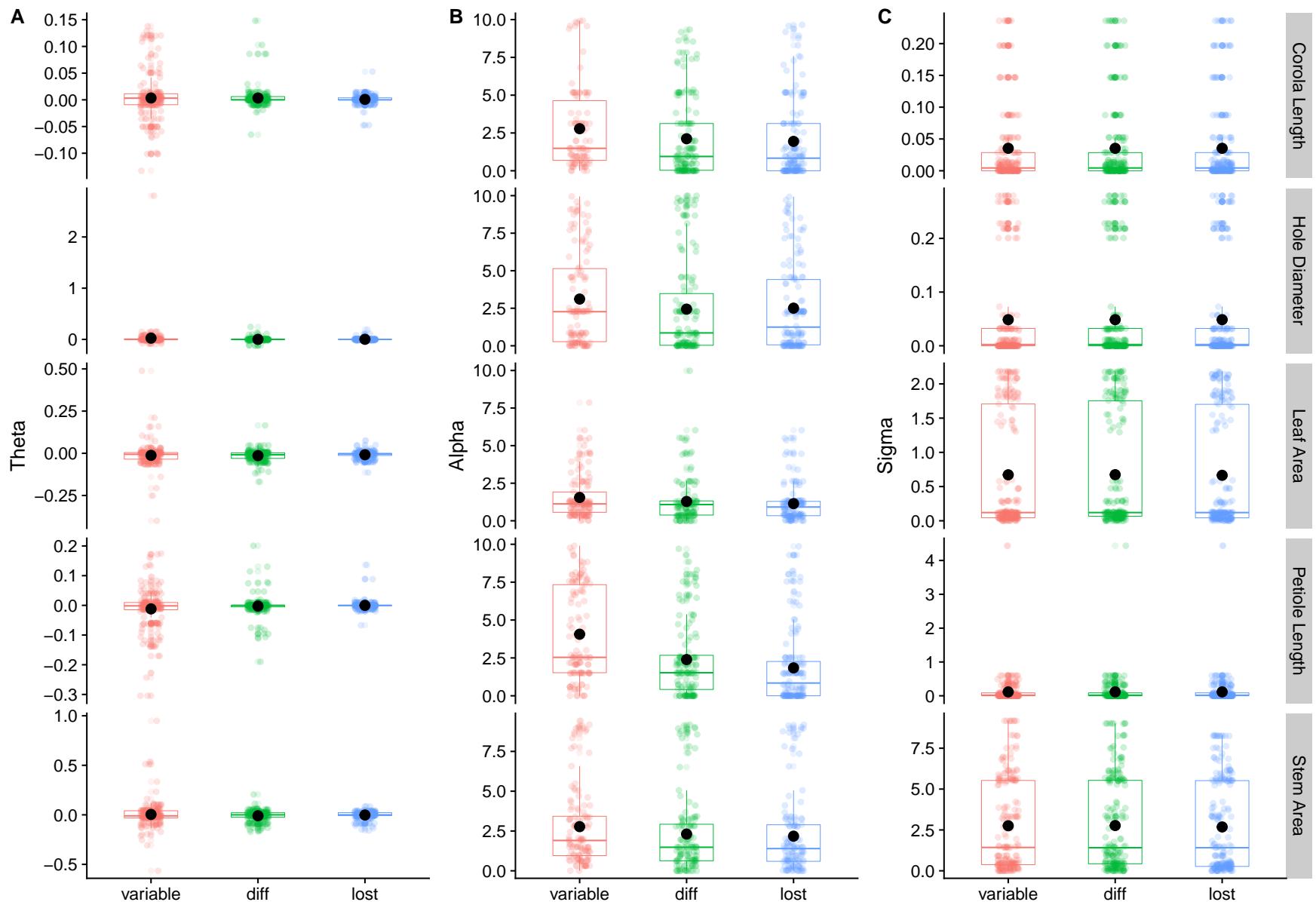


Figure 24: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Warts.

### **PC3 - Parameter differences**

Table 70: Differences in Theta values for PC3 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	97	96	0	110	106	0	103	94	0	102	91	0	111	105
diff	99	0	84	76	0	63	94	0	66	93	0	63	88	0	63
lost	90	92	0	80	90	0	103	119	0	101	94	0	94	125	0

Table 71: Differences in Alpha values for PC3 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	71	79	0	72	77	0	76	137	0	74	100	0	103	140
diff	35	0	74	65	0	85	121	0	148	51	0	87	96	0	138
lost	25	32	0	50	52	0	60	49	0	28	41	0	59	61	0

Table 72: Differences in Sigma values for PC3 analysis of Warts. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost	variable	diff	lost
variable	0	37	67	0	18	71	0	93	130	0	21	54	0	99	109
diff	39	0	66	68	0	74	83	0	138	57	0	57	77	0	126
lost	13	15	0	15	12	0	46	38	0	25	22	0	67	50	0

**Hole Diameter - Discrete**

**PC1 - Parameters**

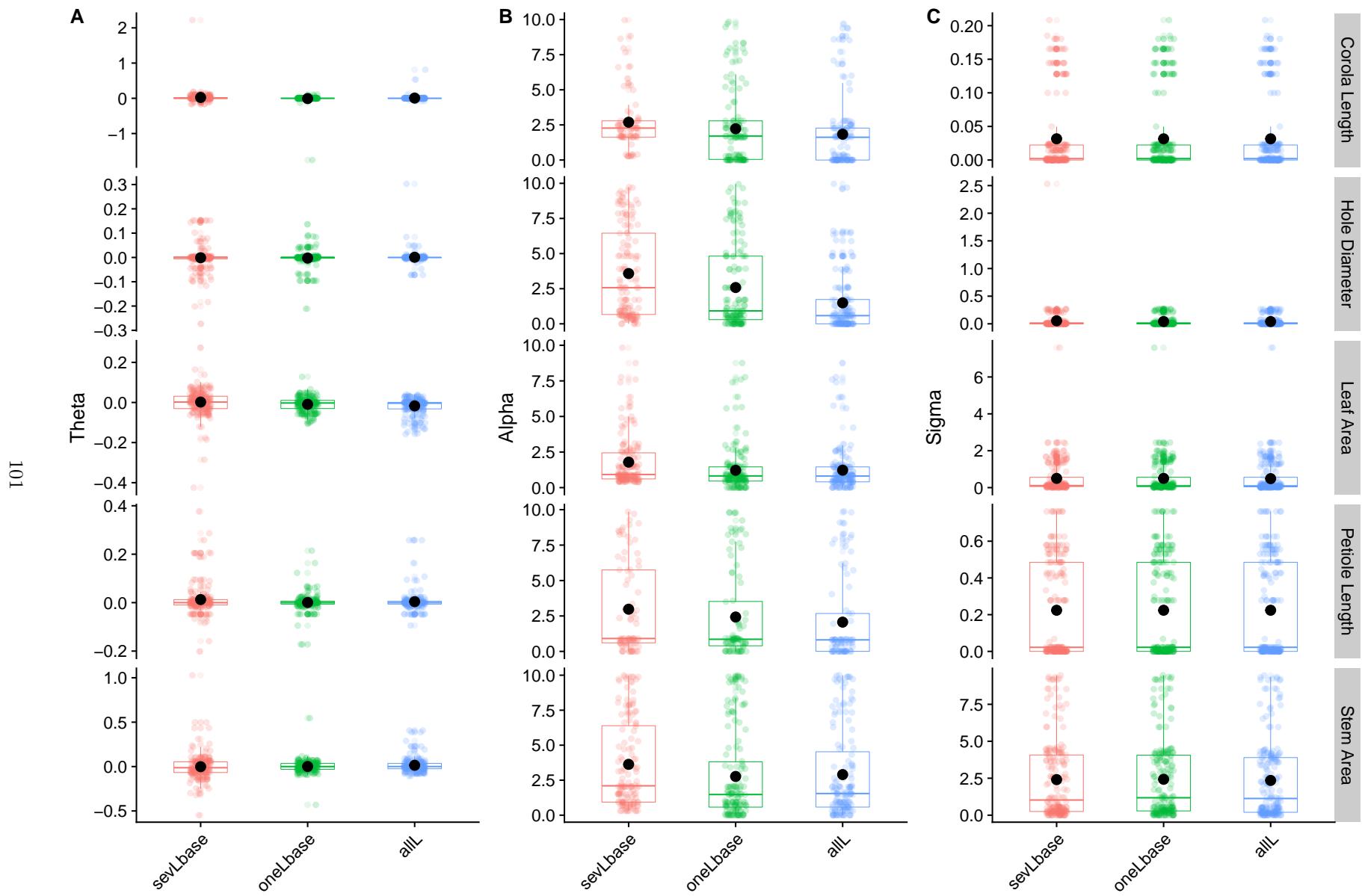


Figure 25: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Hole Diameter - Discrete.

## **PC1 - Parameter differences**

Table 73: Differences in Theta values for PC1 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	<b>98</b>	<b>99</b>	0	<b>72</b>	<b>71</b>	0	<b>115</b>	<b>116</b>	0	<b>106</b>	<b>91</b>	0	<b>64</b>	<b>78</b>
oneLbase	<b>95</b>	0	<b>69</b>	<b>112</b>	0	<b>80</b>	<b>84</b>	0	<b>109</b>	<b>69</b>	0	<b>53</b>	<b>134</b>	0	<b>84</b>
allL	<b>94</b>	<b>98</b>	0	<b>113</b>	94	0	<b>83</b>	<b>75</b>	0	<b>86</b>	<b>105</b>	0	<b>120</b>	<b>99</b>	0

Table 74: Differences in Alpha values for PC1 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	<b>80</b>	<b>89</b>	0	<b>64</b>	<b>86</b>	0	<b>96</b>	<b>137</b>	0	<b>67</b>	<b>86</b>	0	<b>116</b>	<b>153</b>
oneLbase	31	0	<b>69</b>	46	0	<b>79</b>	<b>103</b>	0	<b>121</b>	<b>67</b>	0	<b>94</b>	<b>76</b>	0	<b>138</b>
allL	22	42	0	23	25	0	<b>62</b>	<b>78</b>	0	47	41	0	39	<b>54</b>	0

Table 75: Differences in Sigma values for PC1 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	28	46	0	49	<b>73</b>	0	<b>77</b>	<b>112</b>	0	43	<b>78</b>	0	<b>83</b>	<b>128</b>
oneLbase	34	0	38	46	0	<b>68</b>	<b>92</b>	0	<b>105</b>	47	0	<b>79</b>	<b>85</b>	0	<b>128</b>
allL	20	26	0	21	26	0	<b>57</b>	<b>64</b>	0	16	18	0	40	40	0

## **PC2 - Parameters**

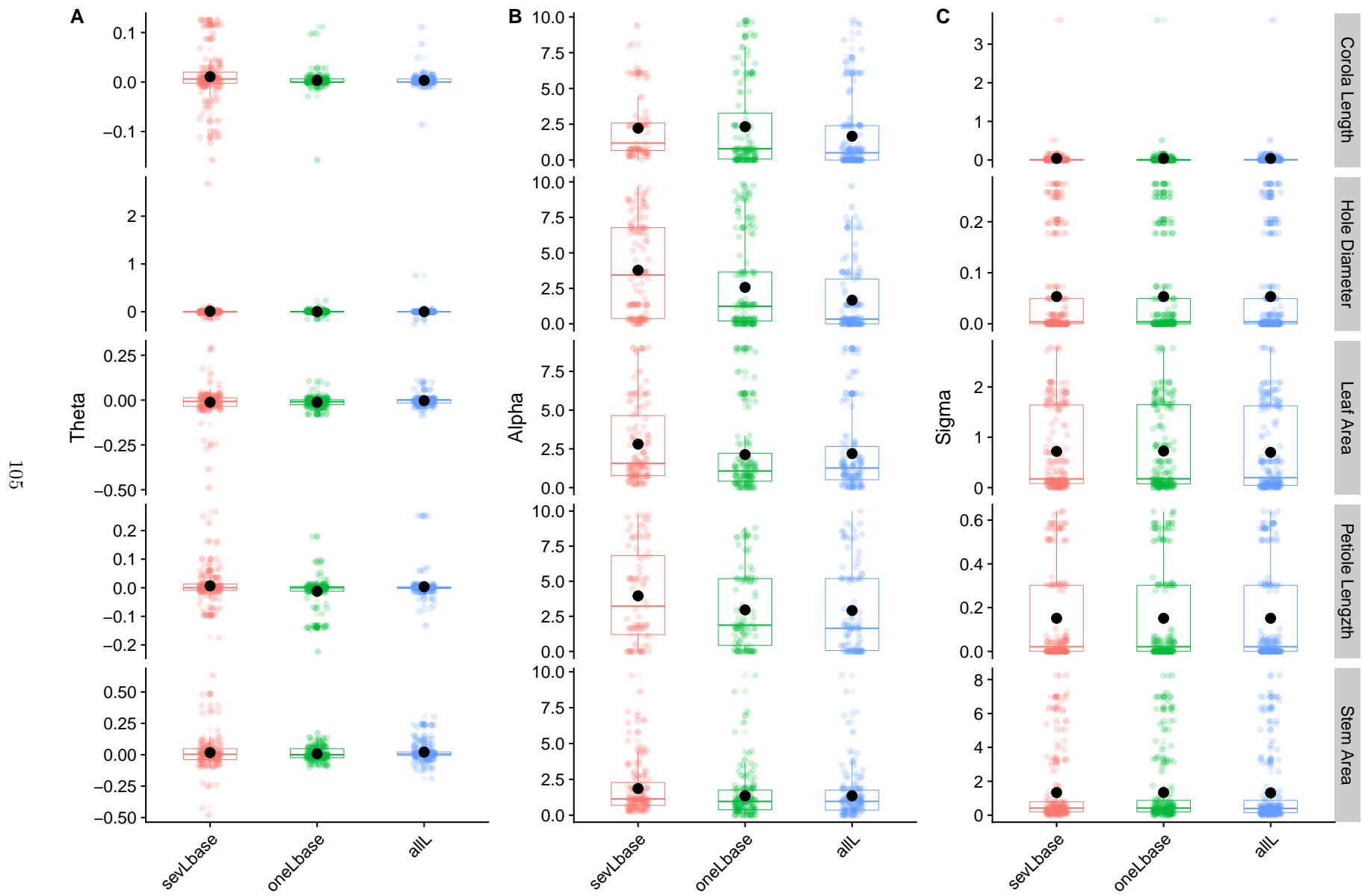


Figure 26: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Hole Diameter - Discrete.

## **PC2 - Parameter differences**

Table 76: Differences in Theta values for PC2 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	<b>98</b>	<b>102</b>	0	<b>75</b>	<b>74</b>	0	<b>99</b>	<b>100</b>	0	<b>91</b>	<b>86</b>	0	<b>73</b>	<b>63</b>
oneLbase	<b>95</b>	0	<b>87</b>	<b>105</b>	0	<b>92</b>	<b>100</b>	0	<b>86</b>	<b>89</b>	0	<b>66</b>	<b>113</b>	0	<b>88</b>
allL	<b>91</b>	<b>83</b>	0	<b>104</b>	<b>75</b>	0	<b>99</b>	<b>97</b>	0	<b>93</b>	<b>87</b>	0	<b>123</b>	<b>84</b>	0

Table 77: Differences in Alpha values for PC2 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	<b>88</b>	<b>102</b>	0	<b>71</b>	<b>92</b>	0	<b>87</b>	<b>125</b>	0	<b>69</b>	<b>83</b>	0	<b>96</b>	<b>127</b>
oneLbase	36	0	<b>85</b>	<b>51</b>	0	<b>78</b>	<b>105</b>	0	<b>126</b>	<b>51</b>	0	<b>88</b>	<b>90</b>	0	<b>128</b>
allL	20	39	0	23	40	0	<b>67</b>	<b>66</b>	0	36	31	0	<b>59</b>	<b>58</b>	0

Table 78: Differences in Sigma values for PC2 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	35	<b>51</b>	0	39	<b>55</b>	0	<b>86</b>	<b>115</b>	0	30	<b>68</b>	0	<b>83</b>	<b>112</b>
oneLbase	36	0	43	35	0	<b>52</b>	<b>90</b>	0	<b>124</b>	50	0	<b>70</b>	<b>81</b>	0	<b>114</b>
allL	18	28	0	18	22	0	<b>61</b>	<b>52</b>	0	12	10	0	<b>52</b>	50	0

## **PC3 - Parameters**

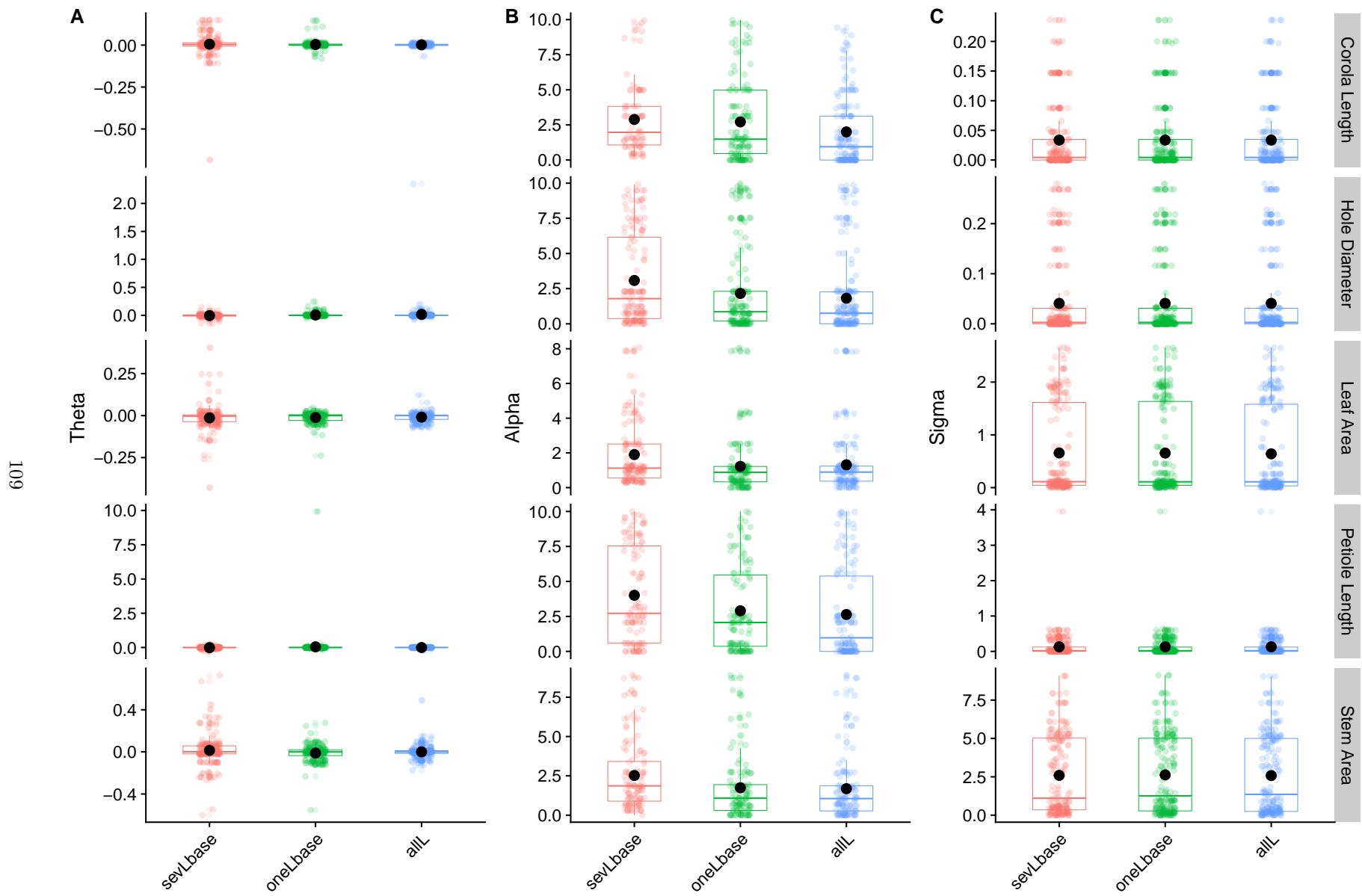


Figure 27: Distribution of Theta (A), Alpha (B) and Sigma (C) values for the OU-based models for each continuous trait in association with different states of Hole Diameter - Discrete.

### **PC3 - Parameter differences**

Table 79: Differences in Theta values for PC3 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	<b>98</b>	<b>97</b>	0	<b>68</b>	<b>82</b>	0	<b>93</b>	<b>88</b>	0	<b>80</b>	<b>83</b>	0	<b>109</b>	<b>83</b>
oneLbase	<b>93</b>	0	<b>94</b>	<b>123</b>	0	<b>87</b>	<b>104</b>	0	<b>100</b>	<b>116</b>	0	<b>97</b>	<b>89</b>	0	<b>87</b>
allL	<b>93</b>	<b>73</b>	0	<b>109</b>	91	0	<b>109</b>	<b>79</b>	0	<b>112</b>	<b>72</b>	0	<b>115</b>	<b>94</b>	0

Table 80: Differences in Alpha values for PC3 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	<b>77</b>	<b>98</b>	0	<b>68</b>	<b>93</b>	0	<b>108</b>	<b>127</b>	0	<b>83</b>	<b>111</b>	0	<b>113</b>	<b>142</b>
oneLbase	31	0	<b>72</b>	<b>67</b>	0	<b>95</b>	<b>89</b>	0	<b>108</b>	<b>55</b>	0	<b>113</b>	<b>82</b>	0	<b>135</b>
allL	12	37	0	29	42	0	<b>70</b>	<b>89</b>	0	27	25	0	<b>53</b>	<b>60</b>	0

Table 81: Differences in Sigma values for PC3 analysis of Holediam.Disc. Each cell contains the number of replicas for which the row state was higher than the column state. Green cells highlight cases with more than 150 replicas, orange cells highlight cases between 125 and 150 replicas, and yellow cells highlight cases between 100 and 125 replicas.

	Corola Length			Hole Diameter			Leaf Area			Petiole Length			Stem Area		
	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL	sevLbase	oneLbase	allL
sevLbase	0	32	<b>69</b>	0	49	<b>78</b>	0	<b>85</b>	<b>114</b>	0	28	<b>64</b>	0	<b>85</b>	<b>118</b>
oneLbase	<b>56</b>	0	<b>67</b>	<b>52</b>	0	<b>70</b>	<b>85</b>	0	<b>101</b>	46	0	<b>68</b>	<b>83</b>	0	<b>117</b>
allL	18	23	0	25	33	0	<b>56</b>	<b>69</b>	0	14	9	0	50	<b>51</b>	0