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Data Analysis

**Tadpole abundance versus insecticide use in nursery boxes**

> t.test(tadpole$TADPL ~ tadpole$INSE.A)

Welch Two Sample t-test

data: tadpole$TADPL by tadpole$INSE.A

t = -3.8503, df = 73.468, p-value = 0.0002498

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-144.26431 -45.86181

sample estimates:

mean in group No mean in group Yes

39.46237 134.52542

There is a significant difference in tadpole abundance between farms using insecticide in their nursery boxes and those that do not use insecticide in their nursery boxes.

**Tadpole abundance versus herbicide use on leaves**

> cor.test(tadpole$TADPL, tadpole$HRBF)

Pearson's product-moment correlation

data: x and y

t = 1.4542, df = 151, p-value = 0.148

alternative hypothesis: true correlation is not equal to 0

95 percent confidence interval:

-0.04193674 0.27114515

sample estimates:

cor

0.1175234

There is no correlation between tadpole abundance and herbicide use on leaves.

**H. japonica versus insecticide use in nursery boxes**

> t.test(frog$HYLA ~ frog$INSE.A)

Welch Two Sample t-test

data: frog$HYLA by frog$INSE.A

t = -0.45913, df = 150.09, p-value = 0.6468

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-10.379548 6.465359

sample estimates:

mean in group No mean in group Yes

14.42254 16.37963

There is no significant difference in H. japonica abundance at farms that use insecticides in nursery boxes and those who do not.

**H. japonica versus herbicide use on leaves**

> cor.test(frog$HYLA, frog$HRBF)

Pearson's product-moment correlation

data: x and y

t = 0.40388, df = 250, p-value = 0.6866

alternative hypothesis: true correlation is not equal to 0

95 percent confidence interval:

-0.0983478 0.1486392

sample estimates:

cor

0.02553538

There is no correlation between H. japonica abundance and herbicide use on leaves.

**Pelophylax versus insecticide use in nursery boxes**

> t.test(frog$PLPHY ~ frog$INSE.A)

Welch Two Sample t-test

data: frog$PLPHY by frog$INSE.A

t = 1.2747, df = 235.81, p-value = 0.2037

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-1.059545 4.944260

sample estimates:

mean in group No mean in group Yes

5.183099 3.240741

There is no significant difference in Pelophylax abundance on farms that use insecticides in nursery boxes and those who do not.

**Pelophylax versus herbicide use on leaves**

> cor.test(frog$PLPHY, frog$HRBF)

Pearson's product-moment correlation

data: x and y

t = -2.2933, df = 250, p-value = 0.02266

alternative hypothesis: true correlation is not equal to 0

95 percent confidence interval:

-0.26245734 -0.02032758

sample estimates:

cor

-0.1435399

There is a significant correlation between Pelophylax abundance and herbicide use on leaves.

**Frog abundance versus insecticide use in nursery boxes**

> t.test(frog$FROGR ~ frog$INSE.A)

Welch Two Sample t-test

data: frog$FROGR by frog$INSE.A

t = 2.3754, df = 246.66, p-value = 0.0183

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

0.03443731 0.36879691

sample estimates:

mean in group No mean in group Yes

1.683099 1.481481

There is a significant difference in frog abundance at farms that use insecticides in their nursery boxes and those who do not.